The California Tech

Vol. CXXVIII No. 13 | Pasadena, California | Tuesday, May 13, 2025

More Funding Cuts and Uncertainty at NSF

Emily Yu
News

Caltech jointly sued a third federal agency last Monday over another 15% cap on indirect cost rates–this time at the National Science Foundation (NSF). The lawsuit comes amid growing uncertainty about the agency's future, as NSF has terminated over 1,400 grants in the past month and has reportedly halted all funding actions for the time being.

The action against NSF follows two others filed against the National Institutes of Health (NIH) and the Department of Energy (DOE) earlier this year; both have resulted in district courts enjoining the indirect cost caps at those agencies.

According to the lawsuit, a reduction in the NSF indirect cost rate to 15% would result in an "annual loss of approximately $14.8 million to Caltech's planned research budget." An awarded grant consists of direct costs, which fund the research itself, and indirect costs, an added percentage that covers overhead such as infrastructure and administration. Caltech currently has 210 active awards and subawards from NSF. In Fiscal Year 2024, the Institute spent over $93 million on NSF-supported research, including nearly $22 million in indirect costs.

In the policy notice for the 15% cap, the NSF stated that the standard indirect cost rate is "intended to streamline funding practices, increase transparency, and ensure that more resources are directed toward direct scientific and engineering research activities." The policy also "improves government efficiency by eliminating the need for individualized indirect cost negotiations."

In the lawsuit against NSF, the plaintiffs state that "NSF's action is unlawful for most of the same reasons [as the NIH and DOE caps], and it is especially arbitrary because NSF has not even attempted to address many of the flaws the district courts found with NIH's and DOE's unlawful policies." They argue the 15% cap is "arbitrary and capricious," noting that NSF hasn't explained why its audits would not suffice to improve efficiency, and that the cap applies only to universities and not other grant recipients without explanation.

The legal challenge comes at a time when the agency is already in turmoil. On April 18, NSF stated it would start terminating active research grants. Most recently, around 380 grants were terminated on May 2, bringing the total to approximately 1,425 terminated grants as of May 6. The agency states that awards "not aligned with NSF's priorities have been terminated, including but not limited to those on diversity, equity, and inclusion (DEI) and misinformation/disinformation."

According to *Science*, sources say that the terminations are driven by a report released by Senator Ted Cruz and the U.S. Senate Committee on Commerce, Science, and Transportation minority staff in October 2024. The report, titled "Diversion. Extremism. Ideology: How the Biden-Harris NSF Politicized Science," identified 3,483 NSF grants that "went to questionable projects that promoted DEI or pushed neo-Marxist perspectives about enduring class struggle." These grants were grouped into five categories: Status, Social Justice, Gender, Race, and Environmental Justice.

In February, the database of all 3,483 grants was published. Three Caltech grants were included: Professor Brian Stoltz's "Transition Metal-Catalyzed Reaction Development Toward the Synthesis of Alkaloids," Professor Jennifer Jackson's "Melting of compressed iron-alloys using a multi-technique approach," and Professor Ryan Hadt's "CAREER: Probing Quantum Coherence in Biomolecular Microenvironments via Electron Spin Molecular Quantum Sensors." All three grants were categorized under Status, and Professor Stoltz's project was additionally categorized under Social Justice.

According to the report, Status is defined as "grants that described persons based on their membership in a population deemed underrepresented, underserved, socioeconomically disadvantaged, or excluded." Social Justice is defined as grants that "prioritized inclusivity over scientific advancements" and "impose social justice perspectives on scientific disciplines." Furthermore, the report states that many grants categorized as Social Justice "lacked a relevant academic or scientific mission." It is unclear how the three Caltech projects align with these categories or advance the ideological aims described in the report, specifically DEI and "neo-Marxist class warfare propaganda."

Last month, Democrats on the Committee on Science, Space and Technology in the House of Representatives published a rebuttal of Senator Cruz's report, stating that the authors "lack a basic understanding of how [NSF] awards are selected" and "the scientific literacy to discern technical terms with multiple meanings." The rebuttal pointed to examples of grants flagged for referencing biodiversity or focusing on topics such as "female" leopard seals.

Earlier this month, *Nature* reported that NSF staff were instructed to "stop awarding all funding actions until further notice," suspending new grants and additional funding or subawards for existing projects. Researchers should be able to use grant money that has already been disbursed, but the fate of future funding and how NSF will operate moving forward remains uncertain.

One NSF staff member told *Nature*, "This country's status as the global leader in science and innovation is seemingly hanging by a thread at this point."

Caltech and USC Rally Downtown to "Kill the Cuts"

Damian R. Wilson
The Outside World

On April 8, members of the Caltech community joined forces with union members from USC for the Kill the Cuts rally in Downtown Los Angeles—part of a National Day of Action opposing proposed federal cuts to scientific research funding. From undergraduate students to postdocs, organizers, and union representatives, our presence at the protest was unified, urgent, and unrelenting.

Jasmine Emtage, a fourth-year biology PhD student in the Prober Lab and a member-organizer with UAW 2478 of Caltech Grad Researchers and Postdocs United (CGPU), helped coordinate Caltech's involvement through her work on the union's communications and outreach teams. "It started in that we all, clearly, have a personal stake in continuing the funding of scientific research—that's where it was motivated," she said. "But also that we're in contact with our union siblings, both at USC and at the UCs. We started talking in collaboration with each other to stand up against these cuts that are being proposed, asking: 'What do you want to do as a broader union?' It was through these conversations that it all started, and this broader coalition was built."

Thus came the National Day of Action. The rally, which included a march to the 300 North Los Angeles Federal Building, was the first large-scale demonstration that some Caltech participants had ever attended. But Jasmine believes its impact extends far beyond a single day. "We took a campus that was otherwise not so well-versed in unionization and what that meant, and the process of standing up for your fellow workers. I think [Kill the Cuts] demystified it and made it a commonplace expected practice on campus," Jasmine said. "I think that's probably the biggest win."

For Jessie Gan, a Caltech senior studying chemistry and preparing to enter a biology PhD program, the rally struck a deeply personal chord. "This year, I was in the throes of grad school hell," she said. "You could tell that spots were getting smaller and smaller, and the mood was a lot more tense because people would realize that we've all been invited for interviews before funding cuts. The competition, because of the cuts, was a lot higher." Jessie has witnessed the impact of these cuts not only through her own experience but also through the fellow members of her House. "People in Dabney have had those experiences. It just shows how pervasive the issue is."

She emphasized the need for graduate students to understand how much these policies impact undergraduates, especially as the research environment grows increasingly hostile. "A number of grad students were surprised to see undergrads show up because we're always busy. But I told them you shouldn't be surprised at all because one of the most impacted groups is the senior undergraduate class," Jessie remarked. "I think students entering grad schools or postdocs trying to get a job right now are some of the most impacted groups."

Beyond the personal, Jessie is infuriated about what she saw as the cruel, self-defeating nature of these cuts. "What makes me the most mad about these cuts is that a lot of things that have been happening that have been affecting specifically liberal views, but what I think is the cruelest is the DoE defunding energy, or NIH defunding important scientific research across the board—I think they're bipartisan."

Like many, Jessie is bewil-

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NASA Faces 47% Budget Cut—Here's How You Can Fight Back

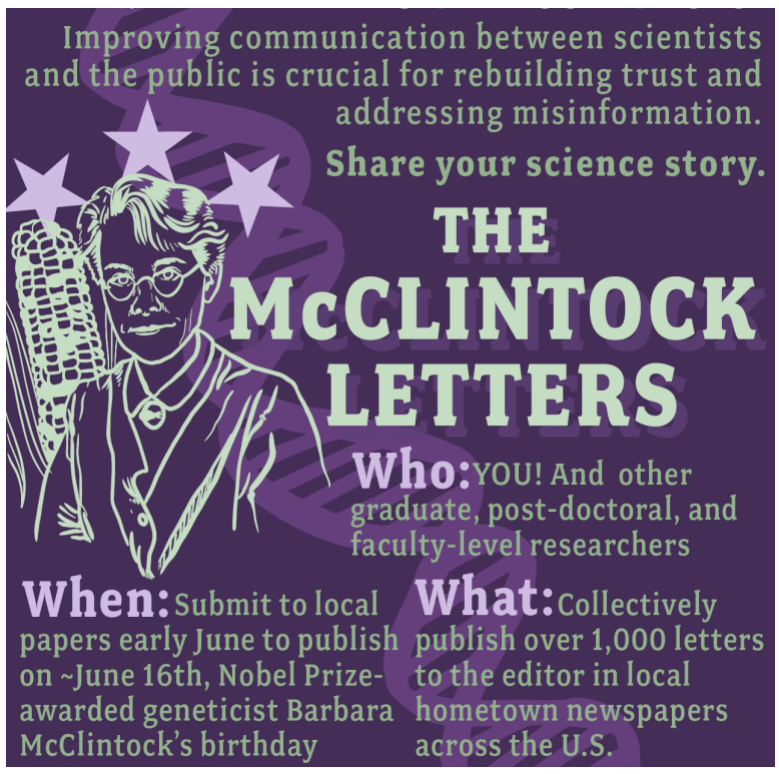
Bethany Ehlmann
Letter to the Community

The proposed 47% single-year cut to NASA's science budget eviscerates our nation's leadership in space science: ending missions already in space, halting those in build, and defunding telescopes and instruments of the future.

President Trump's first administration was strong on space exploration, so this incomprehensible, loser strategy from the Office of Management and Budget doesn't even seem to match the President's stated aims. It burns down in months U.S. capabilities that have taken decades to build and cedes leadership to other nations.

I encourage those who find space exploration inspiring to write the White House and Congress, letting them know that being second-rate is not what you want to see for the U.S.'s future in space. The Planetary Society has posted some specific actions you can take: planetary.org/advocacy-action-center/.

Also, write an op-ed for your hometown paper now about science and engineering and their importance for our future. Most people don't know of these awful proposals. But students can help make people aware and call more to action. There's an initiative out of Cornell University spanning all of science and engineering that students need to be aware of: blogs.cornell.edu/asap/events-initiatives/the-mcclintock-letters/.



The McClintock Letters, an opportunity to publish your science story in local newspapers across the country. (Image: Cornell Blogs)

Links to materials from The Planetary Society (top) and the McClintock Letters initiative (bottom).

Caltech and USC

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dered by the universally beneficial character of the projects affected. "All people need to agree we need to invest in making more energy more of the time, investing in curing cancer: these things are bipartisan goals. All can agree that we want to make America healthier. Maybe we disagree about how to do that, but we need to agree that research makes that better." Overall, the rally left Jessie feeling emboldened by solidarity. "Putting that energy toward expressing how we feel about the situation was useful, cathartic—much more so than just sitting in your room and crying."

Jane Glanzer, a postdoctoral scholar studying gravitational waves, echoed those concerns. "It's appalling. For the NIH, these cuts could gut work on cancer, mental health, infectious disease—tons of stuff. My NSF funding is okay, but past June, it might be in question. And especially in 2026, we have no idea. In the long term, it's up in the air if we're going to have it."

The rally was Jane's first union-organized action, which she found both empowering and bittersweet. "It sucks that we have to do it in the first place. But also having the union in place is great. Especially for international students and postdocs, it's nice that we have this group that will come together and say, 'Hey, we're not going to stand for this treatment!' and things like that." She added, "It's also a way to apply pressure to the lawmakers ahead of time to say, 'Hey, this sort of thing's really going to impact us.' Going off, blocking traffic, and circling the Federal Building—I think it makes a statement."

As explained by Coleman Pinkerton, a UAW organizer with experience across UC campuses, this rally marks only the beginning of a far larger process. "As I see it, obviously nothing is going to be fixed after one rally, one protest, one national day of action. That's not a material way of thinking," Coleman observed. "But I think it builds a movement to organize people. If we want to see substantial changes in our system, we need to organize very broadly."

While prospects for scientific funding remain uncertain, we retain the power to shape that future—as researchers, workers, and members of the public. Along these lines, the Kill the Cuts rally served as a liberating reminder: the value of institutions like Caltech comes from the people who make the science happen. And it's up to us to decide how that value is used, shared, and defended.

"We all fundamentally know that we're stronger together," Jasmine stated. "There's some inherent appeal in banding together in these events that affect us all. I don't think we taught anyone to do that—I think people intrinsically realized that was important, but didn't realize they had the power to do that. People understand that they have the power to do these things."

Protestors from the Caltech (UAW 2478) and USC (UAW 872) contingents march through Downtown Los Angeles, chanting among other messages: "TWO-FOUR-SEVEN-EIGHT, WE PROTECT THE NIH!" "THREE, POINT, ONE, FOUR—FUND SCIENCE, NOT WAR!" *and* "THE PEOPLE! UNITED! WILL NEVER BE DIVIDED!" *All photos courtesy of Alex Ramirez.*

Student Shop Announcement

Ethan Labelson
News

The Student Shop is opening! The Student Shop is an undergrad run machine shop which allows students to work on personal wood and metalworking projects. We had our grand opening yesterday (Monday May 12th) from 5pm to 7pm, with food courtesy of Tom Mannion—our faculty advisor. This was a great chance to look at what the shop has to offer and ask the managers questions. The shop is located near the big LN2 tank, right next to the loading docks and CES (near murder alley).

The shop has two areas; we have a metal shop with 2 mills, a lathe, and a CNC machine, as well as a woodshop which has a bandsaw, table saw, jointer, planer, drill press and more. We charge $20 per term in dues (billed to your bursars) to cover the cost of machine maintenance and shop improvements. Completion of ME13 does count as safety training to use the majority of the metal shop. For those without prior experience, we are also working on scheduling woodshop trainings with the carpentry shop.

Sign up at tinyurl.com/caltech-student-shop, or through the QR code below!

What If? The Disney Influence in My (and Probably Everyone's) Life

Camilla Fezzi
Opinion

As I lean over my desk, slumped between piles of textbooks and scrawled notes, the weight of my schoolwork drags down my mind. The pressure to excel academically and carve out a niche in the competitive university environment sometimes becomes overwhelming. Yet amidst the chaos of deadlines and exams, an old song unexpectedly pierces the drudgery. The rich, sweeping sounds of "Belle" from Beauty and the Beast sweep me, in the blink of an eye, from the chill of my dorm room to one of wonder and magic. In an instant, I am no longer a struggling student trying to find her place, but a capable, independent young woman, venturing out into the world's possibilities. The burden of academic intensity and the pressure to conform to societal norms melt away, replaced by a sense of empowerment, joy, and pure fantasy.

This dualism—the driven, high-achieving undergraduate and the stubborn inner princess—is one that I think most women can recognize, even as we struggle with the issues of higher education. Even as we strive to attain ends and stay resolute in our determination to make it despite adversity, there is deep within us a residual wish to be considered beautiful, elegant, and worthy of a fairy-tale ending.

The Lasting Impact of Disney

Disney's princesses have been strong archetypes since childhood, influencing the dreams and self-image of generations of women. It may be the optimistic and courageous Mulan, the fearless and free-spirited Merida, or the tough and determined Elsa. Whatever, these figures have become part of the cultural iconography of women like me. Their stories, with their grand love and happy endings that work, are a solution to a fundamental human desire to be noticed, admired, and ultimately empowered against adversity. Although the presentations of women in Disney's animated classics have evolved from one of passive weakness and male rescue through the years to that of more mature, empowered sensibilities, the underlying theme of the princess as the ultimate in feminine virtue and beauty remains constant.

This enduring effect is perhaps best illustrated by how Disney characters remain prevalent in our lives, even as we transition from youth to early adulthood. From the widespread Disney Princess merchandise that fills the shelves of college bookstores to the annual viewings of classic animated films that bring students together, the Disney brand is an integral part of female college life.

Women in STEM and the Disney Princess Paradox

As a female STEM degree student, I have struggled with this Disney princess dilemma in my own life. On one hand, I have dedicated myself to the rigorous pursuit of knowledge, motivated by an endless curiosity and an unwavering belief in the revolutionary power of science and technology. I have spent countless hours in the lab, meticulously conducting experiments, analyzing results, and pushing the boundaries of human knowledge. And yet, even as I become immersed in this hyper-rational, male-dominated world, a part of me still yearns for the fantasy escape of Disney fairy tales. I am attracted to the grace and elegance of the princesses, their ability to overcome adversity through a combination of inner strength, compassion, and resilience. In a way, these characters serve as a counterpoint to the often harsh, hyper-masculine STEM culture, providing a necessary outlet for my personality's more emotional, artistic aspects.

This tension is not merely my own, but a broader reflection of the challenges young women in STEM face. We are exhorted to be brilliant in domains that have traditionally been the male preserve, to prove ourselves by hard mental work and the achievement of advanced technical skills. And yet, simultaneously, we are bombarded with social messages that tell us our true worth lies in physical attractiveness, the ability to find a partner, and conformity to stereotypical feminine and masculine roles.

The Disney princess model, emphasizing physical attractiveness, passivity, and the pursuit of romantic love, can be employed to validate these restrictive narratives. And yet, there is also something compelling and uplifting about these women, particularly in their resolve to succeed against what appears to be insurmountable adversity.

As I pursue further study, I find myself drawn to a parallel between my own dreams and those of Disney's beloved princesses. Like they did, too, I wish for something greater, a life beyond the constraints of my current condition, a chance to unfurl my wings and find the boundless, untapped potentialities that lie before me. The heroines I have known and grown up with, from Belle's thirst for adventure to Jasmine's hunger for freedom, have instilled an astounding sense of wanderlust in me. They have shown me that not only can it be done, but it should be done, to break convention, to transgress beyond the boundaries placed upon us by society and tradition. Whether Ariel's desire to be a part of the human world or Mulan's desire to define herself on her own terms beyond the predetermined path set before her, these princesses have demonstrated an unwavering commitment to forging their own destinies.

In many respects, their stories have served as a blueprint for my own life as a young woman in higher education. Like them, I too long to break free from the shackles that would hold me back – the family obligations, the suffocating institutions of higher education, and the restrictive social norms governing what it means to be a woman. Just as these princesses have continually proven themselves to be strong, resilient, and capable of overcoming adversity, I now commit myself to do the same and embark on my own journey of self-realization and fulfillment.

Towards a New Synthesis: Embracing the Duality of the Modern Undergraduate Woman

Looking at this tension, I am struck by the reminder that the duality of the woman's experience—the coexistence of the princess and the STEM scholar, the rational and the emotional, the powerful and the vulnerable—is not weakness but strength to be praised. For it is in accepting this complicated womanhood that we may find actual freedom. By acknowledging and honoring our multiple forms of womanhood, we can move beyond the limiting either/or dualisms that have often confined us to narrow expectations and self-definition.

We can be intelligent, enthusiastic STEM students who also appreciate Disney princesses' beauty and elegance. We can be assertive, self-sufficient leaders who still love finding our "happily ever after." We can be rational, analytical thinkers who tap into the power of imagination, creativity, and emotional intelligence. In doing so, we not only challenge the narrow societal norms placed upon us but also redefine what it means to be an empowered, successful woman in today's world. By integrating the broken pieces of our identity, we can forge a new, expanded model of female identity—one that celebrates the diversity of our experiences and the limitless potential of our dreams.

I will honor that I am at once a sharp, motivated student and an optimist to a fault, besotted with the magic and promise of Disney's timeless tales. Within the complete exchange of these two halves of myself, I find my inner strength, resilience, and firm sense of purpose. This shared desire for something more, this relentless pursuit of our most unrealistic dreams, binds me together with the Disney princesses whom I have come to love. Their lives have inspired me and shown me how to tackle the fragile challenges and exhilarating possibilities that lie ahead. And as I proceed further down the winding path of my education and life journey, I will carry with me their spirit of adventure, boundless courage, and unshakeable belief in the power of dreams, always ready to spread my wings and soar.

Now, six years ago... I met Snow White! At Disneyland here in L.A. I would have never thought I would be living here!

Image from "Here are the Disney Princesses reimagined as empowered women" by Meredith Lepore, Ladders*, June 8, 2018.*

Po- ner. etry Cor-

MAGNIFICAT. BRAVE CAT AT SNIFTER FISHBOWL.

For May Swenson

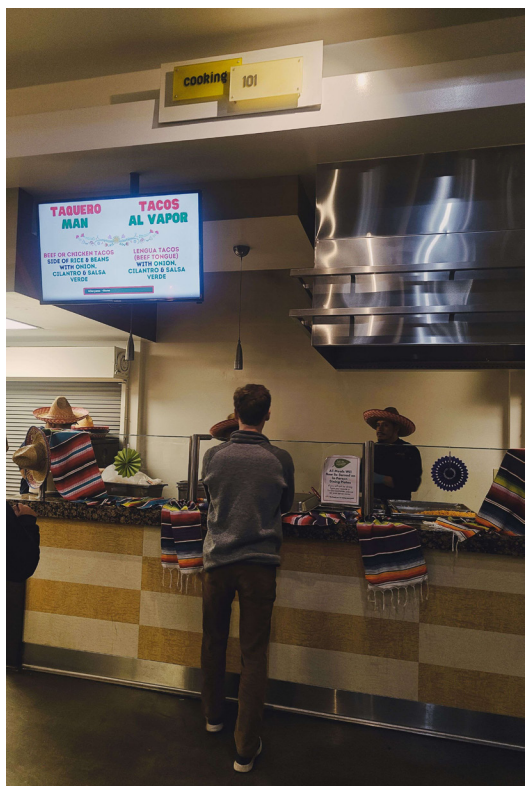
Mmm, just might. Minnow a
moment now here
now nowhere,
tower a moment enlarged, like a heretic
cataract plunging unchanging, like a cat's-eye
catter, like a deco herence, a
fracting flaw. There's half
attraction: eye, the ethereal, shot
cathed into lithosphere, swims!
a Kitt Peak vision, is a dis-
cation, like the starfish maw
catapultable out. Palomar! The proffered paw
widens and the sum of
hun-
gers
beg-
gars
Gar-
gantua's and you arrive
up to your ears in a handstand on one claw.

Cinco de Mayo Fiesta Lights Up Browne Dining Hall

Damian Wilson
The Inside World

Last Monday, in celebration of Cinco de Mayo, a special dinner in Browne Dining Hall was held from 5-7:30 p.m. The event was a collaboration between Caltech Dining Services and the Caltech Wellness Center. Featuring a festive spread of Mexican dishes and pastries, the evening offered a welcome and flavorful break from the usual weekday grind at Caltech.

All photos courtesy of Alicia Zhang.



What You Will: And What a Delight! EXPLiCIT's Twelfth Night

Raquel Maldonado
Culture

Watching William Shakespeare's *Twelfth Night* is always a delve into the delightful confusion between desire, identity, and illusion, in a dramatic comedy that plays with what we feel and how we show ourselves.

In the production directed by Miranda Stewart, presented at the Ramo Auditorium between April 25th and 27th by EXPLiCIT (EXtracurricular Players at California Institute of Technology—the 'i' is imaginary), the 1601 classic from the Elizabethan era gains new life with freshness, rhythm and a staging that honors the carnival spirit of the work without losing its emotional depth.

You probably already know the story behind Shakespeare's play: *Twelfth Night* refers to the twelfth day after Christmas, specifically January 6th. At the time, this marked the end of the Christmas festivities, which were celebrated with a carnival and anarchic spirit, with music, drinking, eating, and pranks. In this scenario of theatrical freedom, Shakespeare created an ingenious comedy that explores humor and love.

Viola, a shipwreck survivor, disguises herself as a man (Cesario) and begins to serve Duke Orsino, who is in love with Olivia. But Olivia is enchanted by Cesario, without knowing that he is, in fact, Viola. And it is in this game of deception and crossed desires that Shakespeare delves deeply into the absurdity and beauty of passion.

Damian R. Wilson delivers a captivating Duke Orsino immersed in the delirium of unrequited love. His vocal presence gives the Duke a passionate solemnity. At the same time, the broad and calculated gestures reinforce the theatrical tone of the figure who loves the idea of love more than the woman herself. Wilson creates an Orsino who is romantic and blind in his obstinacy.

Mahak Mathur, as Viola, elegantly and subtly balances the comedy of farce with the tenderness of a woman in love hidden behind a disguise. Mathur stands out for her silences charged with emotion; her strength lies in her expressive and precise looks, which reveal the character's internal conflict.

Arabella Camuñez brings Olivia to life with a confident and engaging stage presence. From her first appearance, she imposes herself with a firm voice and a naturalness that captivates. Her gestures are spontaneous, never excessive, and reveal an actress at ease on stage, capable of authentically inhabiting the character. Her Olivia does not sound caricatured or rigid, but deeply human.

Solvin Sigurdson plays Feste with a luminous lightness, making the fool much more than just comic relief, but also a poetic conscience of the play. His soft, tuned voice beautifully cradles the songs, and there is an evident confidence in his performance: Solvin carries a serene, almost magical joy in his body, and he is spontaneous without losing his stage strength.

Max Gorbachev dominates the stage as Malvolio with an imposing presence that borders on a hurricane; his presence is captivating from the moment of his first entrance. His strong voice projects authority, and his body and facial expressions are meticulously honed, creating a rigid and vain character. His performance captures attention and gives depth to the character who, even when ridiculed, arouses empathy from the audience.

Sullivan Braun embodies the character Sir Toby Belch with charisma. He naturally portrays the disorder and unbridled joy, delivering a striking and firm performance. He is quick with his lines, spontaneous, and has excellent comic timing. Sullivan maintains clarity in his intentions and builds a Sir Toby who entertains with authenticity.

Eric F. Smith plays Sir Andrew Aguecheek with ease and a well-tuned comedic flair, especially in the scenes where he partners with Sir Toby. Together, the two form a hilarious duo whose clumsy and absurd dynamics provoke genuine laughter from the audience.

Cai Tong Ng shines as Maria, bringing her performance an irresistible balance between humor and arrogance. She is hilarious, funny, irritating, and graceful. Maria is more than a cunning lady-in-waiting: she is a character who articulates comedy with intelligence and charm. She is a true highlight of the production.

It was a joy to watch this production and, even more so, to write about it. This review also carries an emotional responsibility since I know dear people who made this play happen. But the truth is that honesty is written with ease when art is well done. I am pleased to say I saw a committed, creative, and generous work. It is a classic play that, under inspired direction, gained momentum and left the audience, and me, wanting to return to it.

Despite being a 17th-century work, *Twelfth Night* continues to speak directly to our times, addressing with humor and sensitivity what has always made us human: the complexity of relationships. Miranda Stewart's direction hits the nail on the head by offering a lively, original, and personality-filled production. Instead of merely presenting a classic comedy, Miranda stamps her signature with sensitivity, acid humor, and a confident direction directly reflected in the cast's delivery. There is a palpable dynamic between the actors, a complicity that shines through on stage and reveals talent, and an atmosphere of trust. It is as if the joy of being together, guided by a clear and generous vision, brings out the play's truth, rhythm, and vitality. The way the characters interact clearly shows that the direction not only guided but also illuminated each actor's path. Miranda Stewart incorporates contemporary elements into the staging, without disrespecting the essence of the original text.

The visual and sound elements of the production accompany the free and vibrant spirit of the staging. The set design, lighting, and music are precise, well-measured, and aesthetically harmonious. Each choice complements the play's tone, enhancing its expressiveness without ever overshadowing the actors. The costumes, in particular, stand out for their creativity. With references to the classics but reinterpreted with a touch of humor, a hint of modernity, and an intense color palette, they reinforce the playful and farcical character of the production.

The audience responded enthusiastically to the production, with loud laughter echoing throughout the Ramo Auditorium throughout the performance. The contagious energy between the stage and the audience created a vibrant atmosphere where time did not pass. The connection between the actors and the spectators was one of the great strengths of this production, demonstrating how Shakespeare, even after more than four centuries, still has the power to connect us through laughter and emotion.

The cast of EXPLiCIT's Twelfth Night. Back, from left to right: Reggy Granovskiy, Arabella Camuñez, Joyce Kim, Damian R. Wilson, Daniil Asafov, Lihang Zhou. Middle: Mahak Mathur, Max Gorbachev, Cai Tong Ng, Carol Cyr, Ting-Juan Liao. Front: Eric F. Smith, Solvin Sigurdson, Sullivan Braun.

The production team also featured Cai Tong Ng as Assistant Director, Sofia Lyon as Stage Manager, Seri Jane Kim as Assistant Stage Manager, Laura Flower Kim as Producer, Joyce Hutter as Set Designer, Linda Muggeridge as Costume Designer, Crystal Dilworth as Movement Director, Max Gorbachev as Sound Designer, and Edvar Bautista as Light Board Operator. EXPLiCIT would also like to thank Eitan Levin, Brian Brophy, Steve Kim, David Seal, Ariane Helou, Hyesung Park, Caltech's OcTech, and the staff of Ramo Auditorium.

Make-A-Difference at Ya'anna: Lila Rodriguez-Aceves Brings Land-Based Learning to Caltech

Damian R. Wilson
Culture

On April 12th, as part of Make-A-Difference (MAD) Day with the Caltech Y, seven other Caltech community members and I joined Lila Rodriguez-Aceves at the Chief Ya'anna Learning Village—12 acres of land in El Sereno, about 20 minutes from campus, where we helped tend the land. The Village is the first parcel of land returned to the Gabrielino Shoshone Nation, an Indigenous community of the Los Angeles region. It is stewarded in partnership with Anahuacalmecac, the first and only Indigenous public K-12 school in California.

Lila, who is of Nahua heritage, graduated from Anahuacalmecac after attending from kindergarten through the twelfth grade. She is now a first-year student in the Environmental Science and Engineering option, pursuing the environmental chemistry track, and plans to add a second major in History with a focus on pre-colonial Latin America. She also conducts paleontology research in the Tejada Lab.

Lila arrived at Caltech with a mission. "People in my community deserve to have education like Caltech and have these resources," she said. "I got involved with the Y my first term—immediately."

She began by bringing Caltech tutors to Anahuacalmecac. "It took us first term to organize tutoring," Lila recalled. "Then last term, we took some students to go and tutor the high schoolers. We didn't have AP classes or accelerated classes, and in math specifically. That's how I became involved—and [the Y has] been supportive with me helping my community and bringing these resources back."

Next came the land work. Ya'anna hosts a monthly Land Tending Day, drawing in local volunteers for hands-on care. "My school's been doing Land Tending Day since they started partnering with Ya'anna Village, to get El Sereno and other communities involved with land-based learning," Lila explained. "They were doing land tending the same day as MAD Day, and reached out to some people to tell them this is something we're doing with MAD Day, and if you'd be interested."

Two primary motivations guided her: family, and a desire to deepen Caltech's engagement with Indigenous communities. "My sister is the assistant manager of Ya'anna, and I thought it would be really great in the Caltech community," Lila said. "Caltech is very isolated just to Pasadena and what's going on in Pasadena, even through El Sereno is just 15-20 minutes away."

Her devotion to reciprocity is clear: "Me coming to Caltech has always been about: *How do I give back to my community? How do I give my resources to them after graduation and while I'm here?* Oh, I can help my community by bringing volunteers there and helping them with whatever they're doing. But it would also broaden the worldview of people here at Caltech to other things going on."

Lila stressed the extent to which Indigenous science is often overlooked, and how much events like MAD Day can showcase its richness. "I want to show to people that our science is holistic, and sustainable, and valuable. A lot of that is working with the land, preparing the land for the corn, the way we water—that's all science," she emphasized. "And being here at Caltech, I can give my community here to share their science, and bring my science to them, so we can create the most efficient and sustainable solutions."

She gave an example: "We plant close to the well so instead of electricity we typically just use gravity, and the physics of just how to work with the land. You plant diagonally, the water will come down. They look like puzzles—the way it moves. If we have rows going this way, the water will continue to move without any real implementation of how to do. The water's our tool, and we learn how to do it in the most efficient way."

Tilling the soil, as I learned while at Ya'anna, is far more than a mechanical act of cultivation—a ceremonial practice that Lila instead describes as a *reawakening* of the land. Rather than imposing upon the earth, this process honors its vitality and spirit. In this way, the land is understood as more than inert matter to be exploited, but a living relative to be awakened, nourished, and thanked.

This ethos of interconnectedness—between land, people, and knowledge—is central to Ya'anna's teachings. "Nothing in the way we work and believe and have our science is singular. Everything works together, just like the people," Lila said. "It proves to be the most productive and efficient way of growing the food." This interconnectedness extends beyond soil to the very structure of community: I've learned so much from what it means to be part of this growing culture. And I see it very much reflected in our people. The elders are always the people who hold it up; the youth are always the ones who continuously grow from the knowledge we have."

Lila's own growth is rooted in that cycle of reciprocity. "When I grew corn for the first time, it was a gift back to my parents for graduation: *Thank you for giving me this.* I'm going to move on to the next stage of my life, which is Caltech, and continue to have that knowledge which is important to me and

Ya'anna Village land tenders—including several from Caltech—prepare the soil for planting and ceremony. (Photo: Damian R. Wilson)

to them." For her, planting is more than tradition—it's a way of healing generational wounds and re-establishing belonging. "It's also about them returning to their roots. Not just our children, but our parents and elders feeling safe in their Indigeneity, which was once taken away."

The Caltech Y has been instrumental in supporting Lila's work. Liz Jackman, Associate Director of Student Programs at the Y, helped coordinate a relationship between Caltech and Ya'anna. "I think the Y is really about student leadership," Liz said. "I see our role, or the part I find most exciting about my role, is seeing students who have this vision and just supporting it to make it a reality. Because they're really the ones who are making it happen."

In her interview with the *Tech*, Liz was effusive in her admiration for Lila. "I just want to sing her praises! Lila's amazing because she's a frosh, right? I met her really early on. She just stopped by the Caltech Y table and is so passionate about her school and wanting to give back—to just do something for her community."

Liz noted how intentional Lila has been in building meaningful partnerships: "I think sometimes with service, you can do more harm than good. You need to be careful when you do it. And I think [Lila] knows the community and knows how to serve the community in a meaningful way. It's just impressive!"

And Lila's work is just beginning. "Caltech should do a better job with its Indigenous people—not just partnership, but uplifting sovereignty—just 20 minutes away, where these spaces are working as hard as they can to flourish," she said. "I don't think Caltech is doing enough, but I'm grateful for Caltech Y for giving me these resources and letting me do this work. And I can see it flourishing in the next four years that I'm here."

Those interested in participating can find monthly Land Tending Day announcements on Ya'anna's Instagram account, @regenvillage, as dates vary each month.

The Magical Campus of Caltech

Camilla Fezzi
News

If you stroll past the Olive Walk on a sunny Pasadena day, you might see something magical in the air. Is it the scent of freshly pranked upperclassmen? The echo of the Fleming cannon? Or perhaps it's just the spirit of Caltech's brand of wizardry—a house system that would make even J.K. Rowling jealous. At Caltech, the hallowed tradition of "houses" isn't just about where you sleep; it's about forging family, engineering pranks, and unleashing a level of creativity that would make even Dumbledore drop his lemon drop.

But what if we took things one step further? Imagine blending the best of Hogwarts—the Sorting Hat, the House Cup, the Triwizard Tournament—with the wild, inventive, and occasionally soaked (thanks, Avery Assassins) energy of Techers. Welcome to Caltech's House System: Harry Potter 2.0, now featuring the ultimate House Championship.

Sorting, Tech-Style: The Rotation Ritual

Forget the Sorting Hat. At Caltech, you embark on "Rotation"—a week-long, turbocharged round of dinners, desserts, and social events in all eight houses. Instead of whispering your fate in your ear, the process lets you sample every flavor of house life, from Blacker's cryptic mischief to Avery's water gun warfare. When the Fleming cannon finally booms across campus, it's not a call to arms—it's the moment you discover your new home, your "family," and, inevitably, your lifelong rivals.

The Houses: If the Hogwarts Founders Were Engineers and Scientists

Blacker House: The Slytherin of Schemes and Genius

- **Color:** Black | **Mascot:** Mole
- **Signature Magic:** The infamous "Hellride" (think Wagner's "Ride of the Valkyries" at ear-splitting volume while barricaded in a hallway), heaven/hell-themed corridors, and elevator pranks that would make Peeves proud. Their mysterious "γδβγ" slogan has even stowed away on the Curiosity Mars rover.
- **Fun Fact:** "God damn Blacker gang"—a phrase uttered by a flummoxed security guard—became an enduring emblem, now immortalized in Greek letters.
- **Wizard Comparison:** Slytherins wish they were this clever (and mischievous).

Dabney House: Hufflepuff Meets Punk Rock

- **Color:** Green | **Mascot:** Darb
- **Signature Magic:** The annual Millikan Pumpkin Drop—frozen pumpkins plunging from Caltech Hall, hoping for a triboluminescent glow. "DEI" graffiti is everywhere, from video games to lunar surfaces. The Chouse (student-run coffee house) keeps the house buzzing with caffeine and conversation. Anti-authoritarian streak included!
- **Fun Fact:** Once protested Nixon with a banner visible from space (okay, maybe not quite, but it was legendary).
- **Wizard Comparison:** Hufflepuff, but with a rebellious streak and an espresso habit.

Fleming House: Gryffindor, but with a Real Cannon (I asked around and they told me that Fleming must be Gryffindor, the arrogant house ☹️)

- **Color:** Red | **Mascot:** Flem
- **Signature Magic:** The Fleming cannon was fired for milestones, parties, and occasionally to remind everyone who's boss. Fierce is in interhouse sports and even more vicious in pranks (MIT, beware).
- **Fun Fact:** The cannon has been "borrowed" by MIT and Harvey Mudd, but always returns home—sometimes with a story (and a gold-plated MIT ring).
- **Wizard Comparison:** Gryffindors with extra decibels and a penchant for friendly warfare.

Ricketts House: Slytherin/Ravenclaw with a Side of Pyromania

- **Color:** Maroon | **Mascot:** Skurve
- **Signature Magic:** Once famous for courtyard firepots and the legendary brakedrum contest between classes. Murals abound—a tradition rivaled only by their fondness for inclusivity.
- **Fun Fact:** The only house that doesn't offer social membership. Once a Skurve, always a Skurve.
- **Wizard Comparison:** Slytherin, but with more fire and zero tolerance for cliques.

Lloyd House: Gryffindor's Golden Pranksters

- **Color:** Gold | **Mascot:** Lloydie
- **Signature Magic:** The "Lloyd Lights"—a nine-story Christmas tree of lights cascading down Caltech Hall. Notorious for the "Great Rose Bowl Hoax" and for transforming the Hollywood sign.
- **Fun Fact:** Alleged to have run a clandestine LSD lab in the 1970s (purely folklore, of course).
- **Wizard Comparison:** Gryffindors with a holiday decorator's soul, a prankster's heart, and a flair for epic mischief.

Page House: The Slytherclaw of Shenanigans

- **Color:** Blue | **Mascot:** Page Dude
- **Signature Magic:** Greased Frosh Races (Crisco, Beckman Lawn, and glory), a pirate radio station, and the legendary blue-painting of Fleming's cannon.
- **Fun Fact:** The only things off-limits for pranks are the pool table felt and a Nixon poster—sacred relics of Page.
- **Wizard Comparison:** Slytherins and Ravenclaws united in cunning, creativity, and a refusal to take anything too seriously.

Venerable House: The Artistic and Philosophical Ravenclaws

- **Color:** Navy Blue | **Mascot:** Ven
- **Signature Magic:** OPI (Our Private Interhouse), where the house transforms into Mayan temples, Moulin Rouge windmills, or the Roman Colosseum. Murals everywhere (including a two-story astronaut), and Halloween zombie sieges on Dabney.
- **Fun Fact:** Bread-throwing and "floating"

The science of thought: philosophical insights into scientific practice

What is Love?

Love in the Quiet Hours: Reflections from the Windowsill at Caltech

Camilla Fezzi
Column

It's 2:17 a.m., and here, time—so rigid during daylight, dictated by the unyielding rhythm of schedules and the steady ticking of laboratory clocks—has become fluid, expanding and contracting with the beat of my thoughts. I sit cross-legged on the windowsill of my Caltech dorm, my knees pressed against the cold glass, staring out at a city that sparkles with flickering lights and unformed aspirations. In the stillness of these early hours, with a mug of tea cooling beside me, the world falls quiet enough for the oldest questions to resonate more powerfully: What is love, if it even exists?

The question lingers in my mind, relentless and stubborn. Maybe it's because of two students I saw earlier today, holding hands under the olive trees, their fingers intertwined as if to ground themselves amidst the chaos. Or it could be the recollection of my mother's daily messages—soft reminders to eat, take breaks, and be gentle with myself. Her love, a fabric made of small, continuous acts, now feels like a missing part of me. Amid Caltech's brilliant intellect and unwavering demands, I sense this absence more than ever.

Is love something we can touch—skin against skin, the warmth of a hand—or is it found in the softness of a voice, the tenderness of a name spoken? Could it be both, or perhaps neither? In his Symposium, Plato characterizes love (*eros*) as a yearning for wholeness, a quest for our "other half" (*Symposium*, 385–370 BCE). He posits that we are incomplete, and we aim to achieve completeness in our pursuit of love. However, in the solitude that colors these academic halls, I ponder whether love is less about fulfillment and more about recognition: to be seen, acknowledged, and cherished for who we truly are.

As I flip through my notebook, I find a line marked in red: "We accept the love we think we deserve." (Stephen Chbosky, The Perks of Being a Wallflower). Is this why many of us, even among Caltech's most brilliant, settle for so little? We make jokes about being "emotionally unavailable," treating self-protection as a badge of honor instead of recognizing it as a sign of fear, of wanting too much, of loving without receiving love in return. Reflecting this existential conflict, Sartre stated, "Freedom is what you do with what's been done to you" (Existentialism Is a Humanism). Our past influences our decisions regarding love and vulnerability, yet we possess the freedom to rise above them.

I remember a childhood dawn: at twelve, I rode my horse while the world glowed in golden tranquility. In that moment, I felt profoundly connected—not just to the horse, but to the earth and something larger and kinder. Was it love, or merely a transient feeling of belonging? C.S. Lewis noted, "Affection is responsible for nine-tenths of whatever solid and durable happiness there is in our lives" (*The Four Loves*, 1960). Maybe love is less about grand displays and more about the quiet, enduring connections we nurture—a friend's laughter, the comfort of being truly understood.

Still, I yearn for something more profound: the type of love Rainer Maria Rilke depicted, "to be a world for oneself and for another at the same time" (*Letters to a Young Poet*, 1929). Is this kind of closeness attainable, or are we inherently solitary beings? Jean-Paul Sartre cautioned, "Hell is other people" (*No Exit*, 1944), implying that genuine mutual understanding is elusive. Yet, Simone de Beauvoir argued, "One is not born, but rather becomes, a woman" (The Second Sex, 1949), and perhaps through becoming—through connecting and caring—we cultivate a love that transcends solitude.

At Caltech, love seldom appears grand. It manifests in my lab partner bringing me cold brew during intense calculations, Kayane's voice resonating in the vacant auditorium, and Lindsay saving a front-row seat for me because she knows I dislike sitting at the back. Love is reflected in the swim team captain's encouraging notes before a meet, my suitemate's chamomile tea on sleepless nights, and in the professor who remembers my name. Toni Morrison says, "Love is or it ain't. Thin love ain't love at all" (*Beloved*, 1987). Here, amidst equations and fatigue, I long for the profound love that arrives, persists, and doesn't need to be loud to be authentic.

However, love is also defined by absence and yearning: the friend who gradually disappears, the ignored messages, and the loneliness that sets in as others pair off, forcing you to observe someone else's happiness. In this light, love assumes a different form: self-love. Audre Lorde pointed out, "Caring for myself is not self-indulgence, it is self-preservation, and that is an act of political warfare" (*A Burst of Light*, 1988). Amid constant pressures, prioritizing self-care—making the bed, taking medication, embracing imperfections—emerges as a profoundly radical act.

But what about the love that dwells in longing? The unspoken agony of wishing to be understood, chosen, and acknowledged? Kierkegaard, the father of existentialism, stated, "To cheat oneself out of love is the most terrible deception; it is an eternal loss for which there is no reparation, either in time or in eternity" (*Works of Love*, 1847). At Caltech, a place where brilliant minds strive to uncover the secrets of the universe, perhaps the most significant challenge lies in understanding the intricacies of our hearts and daring to embrace vulnerability in an environment that expects continuous competence and self-sufficiency.

As I stroll through the Caltech campus at dusk, I'm intrigued by the contradiction of being close yet distant. We walk the same paths, attend the same lectures, and struggle with identical challenging assignments, yet each of us navigates our internal worlds. In his influential book *I and Thou*, Martin Buber suggested that true love—and indeed any authentic relationship—necessitates an "I-Thou" interaction, a moment in which we encounter another not merely as an object, but as a living entity. Amidst the hustle between labs and lectures, how often do we genuinely acknowledge one another? When I pass friends in the corridor, I ponder: are we merely exchanging an "I-It"

Image from "The Philosophy of Love: Can We Learn How to Love?" By Nicole Becker, TheCollector*, March 29, 2023.*

glance, or do we occasionally find ourselves in that sacred, ephemeral "I-Thou" moment, where love quietly resides? There is significance when you gaze at me; engage with me, see me for who I truly am.

Some nights, the pursuit of understanding becomes overwhelming, and the city's lights outside my window flicker with unresolved questions. In these moments of solitude, I feel the wisdom of Hannah Arendt, who stated, "Love, by its very nature, is unworldly, and it is for this reason rather than its rarity that it is not only apolitical but antipolitical, perhaps the most powerful of all antipolitical human forces" (*The Human Condition*, 1958). In the incessant pursuit of achievement that defines Caltech, love emerges as a subversive force—a reminder that our worth isn't determined by publications or problem sets, but by our ability to care, to take a moment, and to create connections that defy commodification and competition.

As dawn seeps through the city, painting gold across the glass, I realize that love at Caltech is both a rebellion and a refuge. It is rebellion in how we carve out moments for one another, despite the pressure always to do more, be more, know more. It is refuge in the gentle rituals we build: the late-night study sessions that turn into philosophy debates, the shared playlists passed like secret notes, the comfort of silence in a friend's presence when words fail. Perhaps love is less a destination and more a practice—a daily choice, as Aristotle might say, to cultivate virtue through small acts of kindness and recognition. In this, love becomes not an answer to be solved, but a way of being in the world, even—or especially—here, among the dreaming spires of Caltech.

As life buzzes outside my window tonight, I understand that love exists in countless small moments: laughter, music, quiet togetherness, and the enduring hope that tomorrow holds promise. Nietzsche once mused, "Invisible threads are the strongest ties" (*Human, All Too Human*, 1878). Maybe love isn't just an answer; it's a question worth revisiting in every act of kindness, every look shared, every aspiration that reassures us we are not alone.

If you had asked me ten years ago about love, I might have filled the margins of my math notebook with heart drawings, crafting dreams of soulmates and fairy tales. Now, at twenty, love seems less like a thunderstorm and more akin to light rain: gentle, steady, and nurturing in ways I never anticipated. The journey continues, with each day at Caltech revealing a new piece of the puzzle. For now, it's enough to believe that love exists—not as a certainty, but as a possibility. In the pursuit of this question, perhaps we will uncover what we truly seek.

Because, in the end, love is not the solution to the equation, but the equation itself—an ever-evolving proof that we work out in the margins of our lives, hoping that one day, the answer will appear, beautiful and authentic.

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rule-breakers at dinner are standard fare.

- **Wizard Comparison:** Ravenclaws with paint-stained robes and a penchant for spectacle.

Avery House: Hufflepuff, but with Water Guns and Open Arms

- **Color:** Purple | **Mascot:** Averite
- **Signature Magic:** "Avery Assassins"—a 36-hour campus-wide water gun game that rivals Dumbledore's Army for strategy. Annual beach trips, open kitchen, and murals on canvas (so even Filch can't complain).
- **Fun Fact:** Membership is open—just collect ten signatures and you're in.
- **Wizard Comparison:** Hufflepuffs with super-soakers and a beach house.

Bechtel Residence: The Room of Requirement

- **Not technically a house, but...** Bechtel is the all-welcoming, ever-adaptable suite-style haven. If you can imagine it, you can probably find it in Bechtel.
- **Wizard Comparison:** The Room of Requirement, minus the vanishing cabinets.

You belong in this story no matter who you are or what you bring. So come as you are, do what you love, and watch your house rise because every Techer's magic truly counts here at Caltech.

A condensed 8-bit map of the Caltech campus created during the virtual Rotation of 2021. Image from Caltech News.

What Cuts Kill: On Wonder and Revolution

Damian R. Wilson
Opinion

At the Kill the Cuts rally on April 8th, I gave the following speech to Caltech and USC contingents in front of the 300 North Los Angeles Federal Building. I hope its words resonate with the current scientific/political/cultural moment. They represent my truest feelings, the joyous and the vitriolic, as best as I can compress and verbalize them.

Hello, everyone. I speak to you today from the perspective of someone on the highly basic end of the scientific spectrum, working in theoretical high energy physics, who has been determined since I knew of its existence to go to grad school and earn a PhD.

As it happens, scientific funding in this country has never been an easygoing enterprise. Federal funding for science as a percentage of the GDP has been on a steady decline since the 1960s, and with these unprecedented threats to the NIH and NSF, we are watching that decline massively accelerate—just as the problems we face as a society grow ever more complex, more urgent, and more global.

At best, the justification for these cuts is a flimsy pretext based on the supposed shortcomings of DEI. At worst, it is a flagrant abandonment of the scientific enterprise in favor of an authoritarian with no tolerance for an informed republic.

And the skies are already darkened. As an undergrad, friends of mine have had funding from grad schools suddenly rescinded; scores of undergrad research programs have been forced to downsize; and the general climate of joining the scientific workforce, let alone advancing in academia, has never looked bleaker. This nation cannot, in good conscience, transmit this message to the next generation of scientists: that their passion is a liability, their curiosity dispensable.

Let me ask you:

Can we do this to the next generation?

Can we do this to the next generation?

Allow me to emphasize something elementary. The goal of science—particularly that of basic research—is to, according to the best of our ability as a species, eke out a genuine form of truth. That is, armed with the immortal instruments of curiosity, skepticism, and humility, we can erode our biases and reshape our prejudices, moving ever closer to a clearer, more sincere appreciation of the world as it truly is. This is, firstly, not to extinguish the experience of wonder, but to serve its ultimate expression, and in so doing, best cherish what beauty accompanies the shape of the cosmos or the weirdness of the quantum.

This fact was especially and famously well-captured by the 1969 congressional testimony of Robert R. Wilson, the founder of Fermilab and a champion of high energy physics in America. At the suggestion that findings from a particle collider confer no national value, he gave this unflinching reply: "[The collider's] new knowledge has all to do with honor and country but nothing to do directly with defending our country except to make it worth defending."

Also demanding emphasis is what, for the impatient industrialist, science can secondarily accomplish: the enrichment of society with what applications emerge, often incidentally, from pure intellectual curiosity.

So goes the story of quantum mechanics, initially charged as it was by an honest desire—really, an obsession—to resolve these numerous bizarre paradoxes of atomic spectra and

My delivery of the speech on the steps of the Federal Building. (Photo: Alex Ramirez)

ments; the physics of nuclear magnetic resonance, based in quantum spin, led in the 1970s to the MRI machine, without which the modern hospital would not exist.

How in the world could Heisenberg have foreseen that questions about atomic spectra would lead to smartphones and MRI machines?

Of course, my point is that scientific research, ultimately of all kinds, is immeasurably valuable—both intrinsically, in virtue, that prizes knowledge as a public good, and that believes in a future worth building as a result. For isn't that the kind of future we owe ourselves—one founded not on fear or ignorance, but on wonder, discovery, and truth?

So to Congress, to the administration, and to anyone willing to listen:

Fund wonder. Fund discovery. Fund what truly makes America great.

Thank you.

Caltech Wildlife: Fox Squirrels

Jieyu Zheng
Column

Some call them cute furry fairies; others regard them as rats with bushy tails. Love them or not, fox squirrels are there, every day on the Caltech campus.

Among the mammals of Caltech, they're arguably the happiest and freest. While *Homo sapiens* are burdened with homework and deadlines, and coyotes stick to moonlit hours to avoid the crowd, the fox squirrels roam wherever their paws take them. Stroll across campus and you're guaranteed to spot one: foraging randomly in the grass (no, they don't remember where they bury their nuts), lounging on a branch, or chasing a friend in spirals around tree trunks, like a dazzling ribbon in the hand of a gymnast. Even if you don't see one, just look up: the treetops are decorated with their nests—ready for year-round breeding.

Though not native to the West Coast, fox squirrels have become the dominant city-dwelling squirrel in California. They've outcompeted local ground and gray squirrels with their larger size and bold attitude. If you pause to watch one, it might instantly detect your gaze, pause what it is doing, approach you without hesitation, and expect a snack. Some even work in teams: while one distracts you with its wagging tail and rearing posture, another would creep up behind you, like a well-trained assassin ready to snap the lunch bag in your hand. This comfort with humans might stem from their Civil War-era origins—brought west as pets by soldiers, their descendants might carry a hint of domestication in their veins.

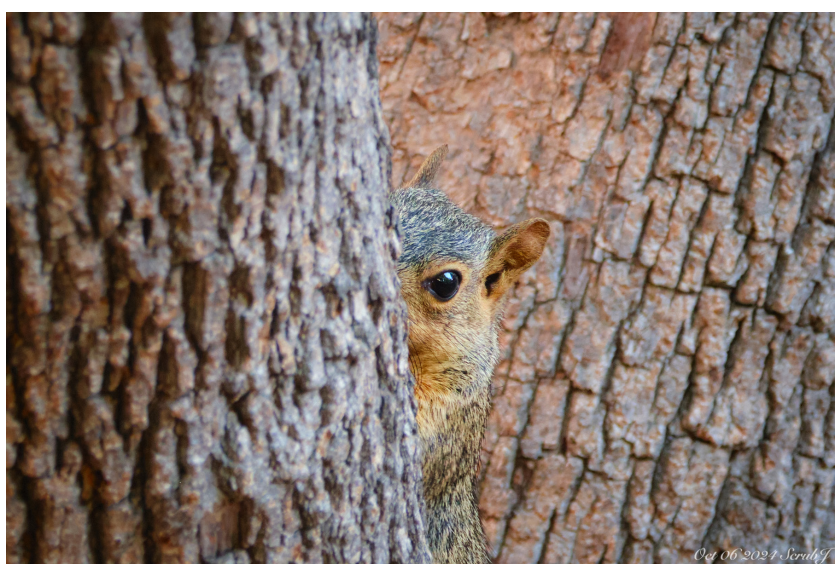
Their human-friendly nature has earned them many admirers. Over the years, I've often seen the same man with a sack of walnuts, visiting at dawn and dusk to knock on trees and summon his squirrel disciples. If you arrive late, you'll still witness an unusual scene: each squirrel with a nut, settled on a branch and nibbling it slowly. For a few minutes, the campus quiets to the rhythmic crunching of satisfied squirrels—a temporary ceasefire in their endless chase games.

Besides eating, their most common pose is resting. You'll often see them sprawled belly-down on shaded branches or directly on concretes, cooling off the Southern California heat. Once, I saw a mother squirrel lounging on the BBB stairs while her two babies play fought in the tree above—perhaps the most relaxed childcare imaginable.

But life isn't without danger. Coyotes and birds of prey (more on them in a future column) are always watching. Fox squirrels stay alert, using warning calls and rapid tail flicks to signal danger. Their vocalization is louder and more frequent than other squirrels', acting as both territorial defense and group alarm. With its dexterous climbing skill, a lucky escapee will scamper up a tall tree and sound the alarm from above, warning the rest of the neighborhood.

The greatest danger these squirrels face, however, may be the road kills. Unlike Caltech students, they aren't confident jaywalkers. They often freeze in fear, like typical rodents, which can end tragically. With so many animals—students, squirrels, coyotes, and even peafowl—crossing campus roads, more signage and slower driving could go a long way.

Finally, a gentle reminder: admire these creatures from a distance. **Don't hand-feed them**—their vision is not legendary, and they might mistake your fingers for food. This happened to a poor Caltech graduate student I once knew. And please, don't film it if they do—unless you want the next viral clip to be of your ER visit.



All photos courtesy of Jieyu Zheng.

Caltech Athletics Bloom in Spring Season

Kyra Phaychanpheng
The Inside World

At Caltech, student-athletes aren't just competing—they are redefining what it means to balance intensity in both sports and academics. They exhibit not only commitment but a certain kind of mental toughness and passionate energy to their teams and to the Caltech community. Here's the latest from Caltech Athletics, highlighting the records, rivalries, and relentless drive that define our teams. With the spring quarter underway, our Caltech athletics have achieved like never before. Let's dive into the many accomplishments the spring sport beavers have to show off this year.

Tennis

Our women's tennis team started off the season by bringing home four straight non-conference wins in a row. These beavers took down countless nationally ranked teams, including No. 33 Colby. The match was extremely exciting, with a result of 4-3. Caltech Women's Tennis ended the season claiming the No. 28 spot in the latest ITA national team rankings. The beavers climbed as high as rank No. 16 during SCIAC conference play. Payal Patel reigned as the ITA No. 16 regional women's singles player and brought home a Second Team All-SCIAC award, alongside Anika Arora. Both of these ladies played a crucial part in singles and doubles wins for the team. Standout freshman Carissa Gerung earned SCIAC Athlete of the Week honors, contributing greatly to the team's success and anticipating more in years to come.

Men's tennis also started the season hot with a five-win streak of their own, ending with a final record of 11-5. This relentless group defeated ranked conference teams, pulling through with huge upsets. Caltech finished the season in the national rankings in the No. 31 spot as a team, and made it to the SCIAC conference semi-finals. Sophomore duo Tejas Ramare and Constantin Cedillo-Vayson de Pradenne and ranked as No. 6 regionally in doubles, with the latter also earning First Team All-SCIAC awards. A second successful doubles team, Andrew Zabelo and Eric He, are the regional No. 8 pair, with the former earning Second Team All-SCIAC recognition.

Track and Field

Caltech Track and Field has had a remarkable season, rounding out this week with the last meet at Redlands this Wednesday and Thursday. Our team has had immense success on both the Men's and Women's side. At the recent SCIAC Championships, the Men's team scored a total of 31 points and the Women's team scored a total of 22 points. In 2023, our teams scored 2 and 9 points respectively. Over the course of the 2024-25 season, eight school records have been broken by this exceptional group of student-athletes.

On the field side, the throws squad showed out in SCIAC championships, with nine throwers scoring and three podium finishers. Emily Hu, our star senior, earned the SCIAC Jennifer Stary Character Award and topped it off with a bronze medal in the hammer throw with a new personal best of 43.92m. Twin flame, Daniel Amelinez-Robles, also placed third in the men's hammer competition with a huge toss of 49.43m. He also holds the school record in this event with a throw earlier this season marking 53.27m. Members of the men's hammer squad, Ezra Johnson, Maxwell Braithwaite, Jadon Hale, Luke Lamitina, defied the odds and scored with 4th, 5th, 7th, and 8th place in the event. Ezra also scored in shot put, as did Sophia Steven. Rounding out the women's hammer squad, myself (Kyra Phaychanpheng) and fellow first-year Clara Stevens, scored 6th and 7th place. In my pursuit of a successful side quest aside from basketball, I threw 39.10m for a second place finish and set a new school record in women's discus. Most recently, Lamitina broke the school javelin record for the third time now with a throw of 59.48 at the APU Franson's Last Chance meet.

Also on the field stands success within the pole vault and jumps squad. Caltech's pole vault squad made a strong impression this season, with junior Aaban Syed and first-year Brendan Rudberg both flying over school record heights of 4.42m. This was done when it counted, placing 4th and 5th at SCIACs as well. The dynamic duo is chasing higher heights with the upcoming meet this week. Sophomore high jumper, Tyler Gatewood, holds a school record this season as well with a height of 2.00m.

Back on the track, one of Caltech's fastest, Ivy Brainard, broke her own 100m record this year, with an outstanding time of 12.81 seconds. She also contributed to the women's 4x100m record this year as well, alongside Isha Goswami, Lily Randall, and Bela Cenicieros. They ran a time of 50.43 seconds. Ivy and Isha added another program record together with first-years Katelyn Sadorf and Hypatia Hamkins in the 4x400m event, destroying the previous record times with 4:05.75. These sprinters are looking to track down more records and personal bests in the upcoming seasons.

The Caltech distance group is the epitome of hard work paying off, as they always shine in every competition. Two beavers medaled in the women's 10K in Championships, Gigi Pistilli with second place and a personal best 37:17.70 and Sophia Dalfonzo snatching up third place with a time of 37:23.68. Miles Jones currently holds four top ten all-time spots in the record book, three of which happening this year in the 1500m, 3K, and 5K. Newcomer freshman, Stephen Goehringer eager to run the 3000m steeplechase this season ran a personal best 9:31.14 at Championships, scoring and putting himself at No.2 in program history.

Baseball

Baseball took home some early non-conference wins and started conference play off strong, stealing wins from Occidental, Redlands, and Whittier. The Beavers brought home 10 regular season wins this year, tying last year's squad for the most wins in a season in program history. Plus, as a team, Caltech pitched a 7.21 ERA in the 24-25 season, improving upon their last seasons' statistics of a 7.67 ERA in 2024.

This season's remarkable performance by senior outfielder, Jack Fishel, was exemplified by breaking a long-standing all-time hits record. He will leave his mark with a new school record of 151 career hits and a .377 batting average for the season. Another notable player, Brendan Flaherty led baseball on the mound this season, with a 4.61 ERA. He led the team with a high of 88 innings pitched.

Women's Water Polo

Women's water polo faced tough competition in non-conference matchups and SCIAC games this season. Early in the season, the Beavers had a movie of a game against Chapman, being down 2-10 at the half, and nearly coming back, ending the game 13-15. This remarkable game certainly left an impression on the rest of the teams in the division, showing how Caltech gave the No. 3 team in Division III a run for their money. And on top of that, history was finally made as the team secured their first ever SCIAC win in program history with a 10-8 dub against Redlands on March 26th!

Throughout the season, two standout beavers acquired many accolades, Maya Dickson and Elizabeth Field. Both were named SCIAC Defensive Athlete of the Week during conference play. As a goalkeeper, Field put up massive numbers with 56 saves, 0.318 save percentage and 12.63 goals against average, which also earned her a SCIAC Character Award. Dickson earned SecondTeam All-SCIAC honors this season, etching her name in the record books with a career year, leading the Beavers in 55 goals, 76 points scored, 67 steals, 28 field blocks and 30 drawn exclusions.

As the season comes to a close, Caltech's student-athletes continue to prove that excellence isn't limited to the classroom. Behind the wins and records, there are dedicated people contributing to the culture of the Caltech community. We will celebrate all these exemplary student-athletes at the Student Athlete Celebration on May 19th. Stay tuned for more inside coverage on Caltech athletics.

QUESTION THE QUAIL

Awoken from slumber, the QUAIL is hungry for your questions. Feed the poor aminal here:

Unions Like UAW Must Shift Their Focus to Defend America's Scientific Future

Seneca Velling
Opinion

It is no secret that America's leadership in science and technology was not born by accident—it was built through public investment, public partnerships with academia, and government sanction of private sector monopoly. From the Apollo program to the Human Genome Project, from the internet to the transistor, the United States once treated research and development (R&D) as a cornerstone of national security and economic strength. For some time the facade has been quietly crumbling away, but last week's FY2026 Discretionary Budget Request rocked the foundations of that legacy hard enough to bring down its edifice.

We were already in the midst of a slow-moving crisis in federal science funding—one that has gone largely unaddressed for decades. Recent developments have thrown this trend into sharp relief. The Trump administration's FY2026 budget proposal calls for massive cuts to nearly every federal agency that supports basic and applied research: a 55% cut to the National Science Foundation, nearly 50% slashed from NASA's science programs, and a 24% reduction to NOAA, among others (**Table 1**). The NSF has already frozen new grants and proposed caps on indirect cost rates. NIH and DOE have moved to cap these indirect costs—critical for the shared infrastructure that makes research possible. Entire research programs are being halted mid-stream. This is happening where it has not been temporarily restrained by injunctive relief in the courts. As the AAU put it in their recent filing, if allowed to stand, the cap will "badly undermine scientific research at America's universities and erode our Nation's enviable status as a global leader in scientific research and innovation."

These are not just statistics. They are salaries lost, experiments canceled, graduates and postdocs terminated, and futures foreclosed.

Yet in this moment of existential threat to science, national labor institutions like the United Auto Workers (UAW), who represent a growing constituency of graduate students and postdoctoral researchers, must respond with far greater urgency and clarity. Some actions are already underway—UAW is a party in litigation challenging NIH's funding cuts, national lobbying is reportedly occurring, and Region 6 locals have participated in protest actions like the Kill the Cuts rallies. (Our local chapter has taken part in these initial efforts, including participation in Kill the Cuts actions and coordination with the UAW Higher Ed Council.) These are good first steps. But, given the scale and speed of the threat, UAW national leadership must do more to coordinate, expand, and amplify these efforts across its entire academic membership.

Agency/Program	FY2025 Enacted ($M)	FY2026 Proposed ($M)	% Change
Department of Energy (DOE)	49,800	45,100	-9%
DOE Office of Science	*8,240*	*7,092*	*-14%*
Environmental Protection Agency (EPA)	9,100	5,000	-45%
National Aeronautics and Space Aministration (NASA)	24,800	18,800	-24%
NASA Science Mission Directorate (SMD)	*7,565.70*	*3,908.2*	*-48%*
National Oceanic and Atmospheric Administration	6,319	4,799	-24%
National Science Foundation (NSF)	8,800	3,900	-56%
U.S. Geological Survey (USGS)	1,455.43	891.43	-39%
National Institutes of Health (NIH)	48,500	30,535	-37%

Table 1. *Proposed FY2026 budget cuts to major U.S. science agencies comparing enacted FY2025 funding levels with the President's FY2026 Budget Request. Bottom-line figures showing sharp proposed reductions for key research institutions. Data compiled from OMB and appropriations documentation based on enacted appropriations legislation and continuing resolutions.*

Allow me to make the case: **graduate workers now make up a rapidly growing share of UAW's membership**. As of early 2024, approximately 38% of graduate student employees in the United States are represented by unions (an increase of 133% in union representation since 2012). UAW's success in organizing student workers at institutions like Columbia, Harvard, University of California, and Caltech has transformed the union. These student researchers are the ones filling labs, winning grants, and producing the science that drives innovation and economic growth. This accounts for ~26% of UAW's total membership coming from academia, making it one of the largest and fastest-growing sectoral constituencies. They now increasingly fill UAW's membership rolls and its coffers.

So where are our national heralds of labor? UAW's national leadership has increasingly aligned itself with President Trump on issues like

The Obligation to Work-Life Balance

Sophie Elam
News

My reign of terror is over, and my era as ASCIT President has come to its end. Through this opportunity, Caltech and its community have taught me countless lessons that I wouldn't be able to learn in any classroom, and I thank each and every one of you for the faith you've put in me as the ASCIT President and the ways you've helped me grow.

As some small return to the confidence you've put in me, I'd like to offer one final piece of unsolicited perspective I've gained over my past three and a half years at Caltech (for a little context, previous ASCIT Presidents have set the precedent of publishing "parting words" or "farewell addresses", and this is my version of it).

Something we've all come to be very familiar with is the unparalleled work rate and dedication exhibited by Caltech community members. I doubt that there are many (if any) assemblages of people who work harder than the individuals at this institution. This culture of working hard defines us. The pride we take in our tireless dedication to our passions and responsibilities is an integral part of our identity and is likely a major contributor to why many of us chose to come here. Incredible inspiration comes from being immersed in this atmosphere of commitment; it fuels Nobel Prize-winning research, world-changing innovation, and unimaginable breakthroughs.

However, I also suspect that many of you will also relate when I say there is a caveat to this work-centric lifestyle. I know I've done it myself and watched as my peers have "flown too close to the sun." For at least some period, many of us have likely been in a position where work on whatever project—or even projects—becomes all-consuming. Inevitably, we've all probably faced the same conclusion to this Caltech tale that is old as time: we find that this level of work isn't sustainable, and we burn out. Many of us find that the passion that fueled our enthusiasm has been replaced with resentment. Luckily, this state of demotivation is relatively short-lived and often warded off thanks to the resilience and optimism of those surrounding us (which could be the topic of a whole other article).

But I want to take a moment to acknowledge the lead-up to this temporary burnout and its consequences. Even if we don't reach complete burnout, there are many times when we toe the line for extended periods and push ourselves to extremes. So what does this look like? (Does "adrenal fatigue" ring a bell for anyone?) You probably don't need me to tell you, and it probably looks different for each of us. But to make myself explicitly clear, I'm referring to the extreme sacrifices we expect ourselves—and maybe those around us, too—to make in the name of our work. Hours of sleep lost, number of weekends spent in the lab, opportunities foregone: these are what I mean.

On occasion, I see no issue with making these sacrifices. After all, a large part of what makes us "Techers" is our willingness—and sometimes even preference—to pass up a given alternative for the sake of our academic pursuits. This becomes problematic when this sacrifice is no longer a preference or choice, but an obligation forced upon us by both internal and external pressures. Maybe it's going into the lab all weekend, because if you don't work 7 days a week, you won't meet the demands made of you. Or perhaps it's working 12 hours each day because that's just what everyone else does. Or maybe it's not academic. Maybe it's responding to emails at 2 a.m., or skipping lunch to go to a club meeting. I'm sure you get the picture. We go to extremes to meet the expectations we have of ourselves.

When verbalized, I think we can all appreciate how these expectations are quite intense, and many of us would never ask any of our peers to make these sacrifices. Yet, I also think many of us would not bat an eye at doing these things ourselves, even if we didn't particularly want to. Once again, I want to emphasize that I am not saying that there is something wrong with not going to the beach every weekend because you have to work on a set or complete a task. But when we dedicate all of our bandwidth to our work and leave no room for work-life balance, there are negative consequences.

For anyone who's had a general physician's exam in the past year, I imagine you're familiar with the regular questions of: "How much quality sleep do you get?" "Are you eating three meals a day?" and "What's your daily stress level?" As a community, we recognize that simple habits for maintaining a human body are important for our health and well-being, and when we sell our souls to our work, some of the healthy habits may be neglected in the name of productivity. Maybe you're agreeing with me now, thinking "Yeah, Sophie. I get it. Don't stay up all night doing sets," or "You're right; I'll try to do better." But this is Caltech, and I see right through your pretty white lies! And personally, I don't believe you—because I tell myself the same lies!

For many of us, it's all too easy to make promises to treat ourselves better, and then remain stuck on the "work hamster wheel" (you can thank Evan for that analogy). So I want to offer a different incentive to make a case for work-life balance.

Please humor me as I start by asking us to reflect on 2020. During the pandemic, one of the things that stuck with me was the notion of compassion fatigue. Originally, this term was popularized in the context of essential workers under ceaseless demand to support the ill and ailing. But for me, its reach has much broader implications: this phrase reminds me of the similar concept that "you can't fill someone else's cup when your own is empty." During the pandemic, I imagine many of us "maxed out" our bandwidth by trying to cope with the constant uncertainty and isolation. Although we are no longer amid the pandemic, I think this recognition of bandwidth remains extremely pertinent and, for this article, of what happens when we have none of it left.

As scientists and engineers, bandwidth as a descriptor for mental capacity may be quite intuitive: our emotional, physical, and intellectual resources are limited, and we can't allocate what we don't have. Put simply, although our mental faculties are intangible, they are still finite. So when we're operating on near-burnout settings, I think many of us are damn near close to using all of our bandwidth for our work, leaving little, if any, for caring for ourselves and others.

This is where I think the notion of work-life balance becomes relevant in an application beyond ourselves. If we are using all of our bandwidth for academic or productive purposes, are we saving any for interfacing with each other?

At Caltech, another massive part of our identity and culture lies in collaboration—in some sense, it's what enables us to maintain such a prestigious work ethic—but collaboration isn't always easy! Efficiently working with other humans requires empathy, patience, communication, and emotional intelligence, and I think we often underestimate how much bandwidth it takes to apply these skills effectively. So when we're at an extreme level of "grind mode" or "lost in the sauce" for our academic pursuits, we severely limit our ability to cooperate with those around us. At the surface level, we can think of this as being slightly irritable when we haven't eaten or slept (and I'm sure we all have experienced the unpleasantness of working with an irritable coworker). On a deeper level, thinking about compassion fatigue, this same level of irritability can arise in response to the chronic stress and fatigue that accompany the pressure we put ourselves under when we walk the line of burnout.

From a fly-over level, this issue is likely ubiquitous to workplaces beyond Caltech. But we're not like other girls, and I suggest that the severity of these circumstances is largely amplified at Caltech to the point that it becomes unhealthy. In particular, while I love the "grind" culture at Caltech, it is glorified to a toxic extent. There is an implicit praise in getting less sleep, spending the night in the library, and pushing ourselves to extremes. Even if we don't explicitly promote martyrdom for academic success, we enable it daily by normalizing these extreme behaviors in our day-to-day lives.

So what is the line between extremity and enthusiasm? And how do we balance a prestigious work ethic with a sus-

tariffs and trade policy, showing that taking political stances (even economically illiterate ones) on behalf of its membership is possible. Meanwhile, UAW national's public response to the administration's full-frontal assault on America's research enterprise has remained limited in scope and visibility. While some interventions (e.g. the NIH lawsuit) have occurred, for the national union this characterization is broadly true. To me, that is an untenable contradiction. You cannot claim to represent current academic researchers and the future of American labor while watching the backbone of that future wither and die.

It is time for UAW's national leadership and other major labor organizations to reorient their policy advocacy. They must stop treating science funding as someone else's issue. It is their issue now.

This is not a new problem, so it is one I would have hoped UAW might have seen earlier. Since the late Cold War, public R&D spending has steadily declined as a percentage of GDP and of the federal budget. According to the American Association for the Advancement of Science (AAAS), federal R&D spending as a share of the economy has dropped from nearly 2% of GDP in the 1960s to under 0.7% today. In real terms, many grants that once supported entire labs now struggle to fund a single graduate student at fully burdened costing. This hollowing out of American science has been occurring for decades, but today's policies accelerate that decline precipitously, toward a dangerous new low.

There is a hopeful counterpoint: the organizing of academic workers has never been stronger. As I mentioned a moment ago, academia accounts for one of the largest and fastest-growing sectors in the labor movement; tens of thousands of graduate students and postdocs are unionized. If unions like UAW embrace their new scientific base, rather than longfully yearning for the bygone era of factory work, then they have the numbers—and the moral authority—to be a powerful voice in federal policy debates about research, education, and innovation.

That means taking action. I would like to see UAW and our local chapter CGPU (UAW-2478) coordinating with Caltech and other academic institutions on this common cause to lobby Congress to restore and expand research budgets. I would like to see them expand their filing amicus briefs or joining lawsuits challenging unlawful or punitive policy changes like overhead caps. I would like to see them organizing national coalitions of grad student/postdoc unions across disciplines and institutions. I would like to see them sending representatives to Washington, D.C., to speak directly with lawmakers to highlight the importance of these programs, the nature and function of indirect costs, and (I cannot believe I have to say this so explicitly) the relevance of R&D to our modern economy. Efforts like Caltech's legal challenges to the NIH, DoE, and NSF indirect cost caps should not be led by academic administrations alone; organized labor must stand alongside them to a much greater degree.

These are not extraordinary measures. They are long overdue. In sum, these are the bare minimum actions we should expect from UAW's national leadership. The union has collected dues from graduate members at other universities for long enough to do more than pay lip service to the needs of the moment (*I would point national leadership in the direction of UAW Region 6 to see what stronger communication on this issue could look like*). Now that Shawn Fain and his cadre represent Caltech grads on the national scale, I want them to put *our* money where *their* mouth is.

In the interests of fairness, I do feel I need to highlight my own views on indirect costs specifically. In my opinion, it often goes without saying that not every dollar of indirect cost reimbursement has been spent wisely—many institutions, including Stanford, now employ more staff than they enroll students, and some administrative growth has rightly been criticized as bureaucratic bloat. I'm sure we have elements of waste in our own institution too; I've certainly seen some of that in student affairs during my time with GSC. But to respond with a battleaxe where a scalpel is needed is to risk turning the body of research into its corpse. The solution to inefficiencies in economically indispensable programs is calculated and careful reform, not ruin. Broad-brush caps on indirect costs don't distinguish between essential infrastructure (e.g. shared core facilities, building upkeep, EH&S offices, grant administration, research compliance) and excessive administrative bloat. By gutting indirect cost recovery wholesale, we don't just trim fat—we sever arteries.

Even hard-won victories can be vulnerable. At Caltech, our newly ratified collective bargaining agreement with the Institute includes meaningful wage increases and legal protections—most notably, Article 4, which guarantees that Caltech must supplement externally funded stipends or salaries if they fall below contractual minimums. But even this safeguard has limits. If a federal agency were to impose binding restrictions prohibiting such top-ups, Article 28 appears to give clear deference to the funder/grantor's terms, taking precedence over our bargained contract. Meanwhile, Article 6 allows Caltech to terminate appointments due to the loss of funding for reasons beyond its control, and Article 20 reserves to the Institute broad discretion over its budgets and grant administration (*viz.* if a drastic budget cut forces a reduction in funded positions or necessitates reallocation of resources, the Institute may have the discretion to act accordingly). Taken together, these clauses don't erase our gains—but they do provide evidence for how fragile those gains could become in the face of deepening federal science cuts. And if the National Labor Relations Board (NLRB) is further weakened, politicized, or dismantled, even the limited recourse we currently have could vanish. Without funding, and without enforcement, a contract cannot protect us.

The story of America's scientific preeminence is, in large part, a story of its willingness to invest in the potential for future returns on investment. That is, to see research for the public good. It is clear to me now that willingness is faltering. And unless those who depend on that funding—students, postdocs, universities, industries, and now unions—fight for it *together*, the story may be nearing its end.

Take heed, Shawn Fain: if the national UAW wants to be the union of the future workforce, it must fight for the future. That means fighting for science today.

Author's Note: I am a member of the Caltech Graduate Postdoctoral Union (CGPU-UAW Local 2478). The views expressed here are my own and do not represent our union, the Graduate Student Council, or the Institute.

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tainable work-life balance? I don't know. The answers to these questions vary for all of us, but I genuinely believe that answering them can help move our community culture in a direction where we can create bandwidth to be kinder, more patient, more understanding, and more effective collaborators.

I recognize that this article may just be covering old news. Maybe we've all always known that the price of prestige is extreme sacrifice. Yet I implore us not to be complacent and accept that a toxic overcommitment to one's work is the only way to achieve high-level success. There are those on campus who have found the balance between investing in their passions and fostering their non-academic lives and we can look to as we seek to address the collective struggle to reconcile the demands of academia with the nuances of being human.

My hope is that, in writing this article, we can begin to normalize having these conversations and learn to acknowledge when we are enabling habits that undermine our mental well-being and collaborative capacity. However, cultures don't shift simply because of conversations. While these are crucial starting points, institutional change comes from individuals taking action, which can cumulatively drive realignments. Yet as I am writing this, I realize how dramatic and intimidating phrases like institutional change and realignment may seem. Maybe these are too ambitious. Or, maybe, I don't truly have the "Caltech Spirit" of commitment.

I reassure you, I would not be taking the time to write this if I did not believe it was important enough to justify such verbiage. The last line of thought I offer about this comes from the Caltech mission statement, which states: "The mission of the California Institute of Technology is to expand human knowledge and benefit society through research integrated with education. We investigate the most challenging, fundamental problems in science and technology in a singularly collegial, interdisciplinary atmosphere, while educating outstanding students to become creative members of society".

This is what we stand for: the benefit of society. We are an institute of scientific philanthropy where we aren't just committed to our work, we're committed to work that serves the greater world. I argue that there is something inherently altruistic about this mission, and there is a humanitarian core to the impetus of all of our efforts. We have an obligation, then, not just to be great researchers, but to be great humans. These are two incredibly lofty demands, yet there is no better community to meet them than the Caltech community. Yet the fact of the matter is that we can't conjure more bandwidth, so unless someone discovers a way to squeeze more hours into the day or reduce the amount of sleep a human needs to function, we are left with the need to reconcile the way we allocate our mental resources and the demands we make of ourselves. Again, I'm not asking us to switch to a four-day work week or abandon late nights in the lab. Instead, I'm asking us all to do an honest self-assessment of how much bandwidth we have and how it's being used. This isn't easy either. I think a lot of us will encounter uncomfortable truths, but by reflecting on these matters and analyzing how they impact our abilities to be engaging and collaborative humans sharing a community, we can enhance the overall productivity, happiness, and well-being of our campus.

By no means is this meant to be condemning or attacking in any way. In all honesty, I am constantly astounded by the kindness, graciousness, and humility of those I encounter at Caltech. I am amazed by the many balancing acts everyone is managing and recognize the immense energy and effort that everyone is expending to be remarkable researchers and stellar people. I know that, in reflecting on my own habits and in talking to countless others on campus, many of us feel that our ability to collaborate and support one another is hindered by our tendencies to spread our bandwidth so thinly. Thus, more than anything, this statement is a call to awareness of the campus climate surrounding work habits.

Because it can be difficult to see the value in doing something for yourself, I hope that by addressing how our intense work habits and normalization of extreme sacrifice impact the community beyond ourselves, I can compel us to begin considering some of the toxic nature behind the Caltech "hustle" culture. I truly believe we can retain this "grind" mentality and even enhance our productivity and achievement if we take a step back and assess what it means to have a healthy work-life balance.

art + photos spotlight

"Hummingbird Sipping Nectar on San Pasqual" by Asmat Taunque

How Peru Changed Me: A Bridge Between Two Worlds

Camilla Fezzi
Culture

Hello everyone, my name is Camilla Fezzi, and you probably know me, always running around, without any free time, and I am kind of recognizable because of my Italian (fashion style) 😜.

I'm a freshman at Caltech, with the goal of double majoring in biology and chemistry and dreaming, one day, of becoming a doctor and researcher in the oncology/neuroscience field. But before I am any of those things, I am Italian—a daughter, a sister, a friend. I grew up beneath the Verona sun, in a place where the dinner table is sacred and where family is the compass that guides everything. I have always known warmth—of home-cooked meals, of laughter echoing through ancient streets, of a mother's arms around my shoulders. I know what it is to feel safe, to take fresh water and a doctor's appointment for granted.

And yet, I have always had a restless heart. Maybe it's the scientist in me, or maybe it's just curiosity, but I have always wondered what life is like beyond my own familiar hills. I wanted to see the world, not just as a tourist, but as a participant. To be useful. To serve. To understand. During sprain break I left few days early and alone, leaving my comfort zone I flew for my first time to South America. That's how I found myself, heart pounding and suitcase rattling, stepping off a plane in Lima, Peru, with MEDLIFE. The air was thick, and the city pulsed with a kind of energy I had never felt before—a wild, unstoppable current that swept me along before I even had time to catch my breath.

In Italy, we talk about our struggles. We talk about politics, about jobs, about dreams that sometimes feel too big for a small town. But most of us don't worry about whether the tap will run dry, or if there's enough food on the table. I have argued with my parents about my future, cried over exams, felt the weight of expectation, and sometimes even the heaviness of not knowing who I am.

But in Peru, I saw children racing up endless stairs for a bucket of water, mothers waiting all day in the sun for a doctor who might only be able to offer comfort, not a cure. I saw hope shining through dirt-smeared faces—children in Celtics jerseys, little girls with tangled hair and shy smiles. I saw poverty, yes, but I also saw pride. I saw neighborhoods built on nothing but trust, laughter, and the stubborn refusal to give up. One afternoon, as we walked through the hills, our Peruvian guide stopped and looked at me. "You know," he said, "in Norway, people struggle with the will to live. Here, we fight for water." His words landed like a stone in my chest. The struggles are different, but the pain is real in both places. There is no monopoly on suffering.

I learned that sometimes medicine is a bandage, and sometimes it's a conversation. Sometimes the most healing thing you can do is listen. I measured the weight and height of children whose eyes dared me to look away—and I didn't. I helped build staircases, each step a promise of a safer journey for some family I'd never see again. I painted walls, learned to laugh at my broken Spanish, and let the music of Barranco's streets seep into my bones.

I met Romiri, a pregnant girl who was barely more than a child herself. I learned her name, and I held her hand for a few moments longer than necessary, because I wanted her to know she mattered. I danced at a neighborhood festival, my feet stumbling on unfamiliar rhythms but my heart beating in time with everyone else's. I shared stories and food with Crystal, a Chinese-American volunteer who reminded me that identity is a mosaic, not a single tile.

I was changed most by the moments of quiet—by the old woman who thanked us for a staircase that let her visit her sister again, by the doctor in the Amazon who told me, "The medicine is not the cure. The education is the cure." I saw it in the faces of the Machuchiro tribe, in the wild eyes of children running in the jungle, in the long braids of girls in Cusco who giggled at my accent and asked about my home.

I came to Peru thinking I would give, but I received so much more. I found humility in the face of need. I found joy that defies explanation. I found a bridge between two worlds—between the comfort of my Italian upbringing and the raw, urgent beauty of survival in Peru.

This article is my attempt to honor that journey. It is a collection of memories, mistakes, lessons, and love. It is not a story of saving anyone, but of being saved—by the people who welcomed me, by the land that challenged me, by the realization that I am, and always will be, a bridge between worlds.

If you are reading this, I invite you to walk with me—not as a tourist, but as a fellow traveler, willing to be changed by what you see.

A world away, a reality away

I never understood the full meaning of "distance" until that first night in Lima. My plane landed late, and the city glimmered beneath me, stretching further than I could have ever imagined a city could go. The air was thick-almost tangible, humid with the ocean's breath and the weight of so many lives. I'd left the stately, predictable rhythm of LA behind, and already, Lima's music was different: louder, raw, vibrating with a pulse that unsettled and intrigued me at the same time. The drive from the airport was a sensory assault. Even at night, people filled the streets, vendors hawking snacks at stoplights, children weaving through traffic that seemed to obey no rules except momentum. I pressed my forehead to the window, trying to take it all in—billboards in Spanish, graffiti that felt more like art than protest, the faded reds and blues of mototaxis darting like minnows in a stream. The driver, sensing my wonder, simply smiled and said, "Lima nunca duerme." Lima never sleeps. Arriving at our hostel in Miraflores (a nice neighborhood in Lima), I was greeted by the soft glow of lanterns and the voices of other MEDLIFE volunteers who had already formed easy friendships over shared exhaustion and newness. My room was simple, well, our room, we were in 12, girls I have never seen in my life, on sky beds, literally in 12 meters squared and ONE shower—a window that overlooked a courtyard, a single bulb that flickered when the fan turned on. I unpacked slowly, laying out my stethoscope and notebooks. I suddenly felt very small, all my confidence shrinking in the shadows of this enormous, unfamiliar place. That first night, sleep was elusive. I listened to the city-stray dogs barking, laughter echoing from the street, the distant sound of a guitar. I thought about home, about my father's steady voice and my mother's gentle hands, and wondered if I'd made a mistake. But even beneath the doubt, there was something else: excitement, possibility, a sense that my world was about to grow beyond anything I could imagine. I woke early, the sun just a rumor behind a grey sky, and wandered out to the terrace. The ocean was invisible but close enough to taste in the air. Lima felt ancient and restless, a city built on layers of history and hope. I took a deep breath, letting the unfamiliar become a little less frightening. I was here. I was ready, or at least willing, to let this place change me.

The Call to Serve: Choosing the MEDLIFE Path

My decision to join MEDLIFE wasn't a single, thunderclap moment—it was a quiet accumulation of questions I couldn't shake. Why does health feel like a birthright in one country and a lottery in another? What does it mean to serve, truly—not just as charity, but as solidarity?

Back in Italy, I'd volunteered at food drives and tutored younger students, but it always felt like I was playing at the edges of real need. I craved an experience that would unsettle me, strip away the comfort of knowing all the answers. My professors spoke passionately about global health, but their words felt abstract until I saw the MEDLIFE flyer in the university hallway and the club here: "Travel. Serve. Learn. Change." Something in me said, "Go."

The application process forced me to confront my own limitations. I wrote, honestly, about my fears—about being a foreigner, about not knowing enough Spanish, about the possibility of hurting more than helping. The MEDLIFE staff encouraged us to see ourselves as learners first, helpers second. That humility, that openness to being changed, was what drew me in. The reality of Peru was more complicated than anything I'd imagined. The first morning, Gladys, our local coordinator, looked each of us in the eye and said, "You have skills, yes. But more important, you have ears and hearts. Use them." That set the tone for everything that followed.

We spent our first days in orientation—learning how to set up clinics, how to ask questions that didn't shame, how to respect the boundaries of families who had every reason not to trust outsiders. Our group was a curious mix: future doctors and engineers, artists, a linguistics major who could already switch between five languages. I felt both intimidated and inspired, acutely aware of how much I had to learn.

The first time I stood in front of a line of mothers waiting for care, I realized how much the MEDLIFE philosophy had seeped into me. My purpose wasn't to fix, but to witness; not to rescue, but to walk alongside. That shift was subtle but seismic. It changed the way I listened, the way I touched a child's hand, the way I asked, "How can I help?" instead of "What's wrong?"

Each night, I scribbled in my journal—scraps of dialogue, the names of children, moments that made me question what I thought I knew about medicine and myself. I could feel my old ambitions stretching, reshaping themselves around a new understanding of what it means to serve. I was no longer just a student—I was a guest, a witness, a participant in stories that would stay with me long after the trip was over.

First Impressions: Lima's Contrasts

Lima is a city where opposites do not just coexist—they collide. Each morning, the bus ride to our project site was a lesson in contrasts. One moment, we passed shiny malls and manicured parks, the next,

we climbed into the hills where roads dissolved into dust and houses stacked atop each other like building blocks left behind by a careless child.

I remember the first time I saw the city at dawn. The fog hugged the ground, softening the edges of brick and tin. A woman swept the stoop in front of her home, pausing to wave at a neighbor who balanced a basket of bread on her head. Above us, murals exploded in color—here, a goddess with wild hair; there, a flock of birds escaping a broken cage. I was struck by how art seemed to push back against the bleakness, as if the city itself refused to be defined by its hardships.

What startled me most was not the poverty, but the pride. People kept their homes immaculate, even if their walls were patched with cardboard. Children wore their school uniforms with care, even when their shoes were too small. There was a dignity in the way families stood in line for the mobile clinic, in the way they greeted us with "Buenos días" and a smile that reached their eyes. The disparities were everywhere, but so was ingenuity. I watched a group of teenagers use a plastic bottle and some string to create a makeshift soccer ball. I saw mothers handing out steaming cups of avena (oatmeal) to neighbors as the day began. I heard laughter—so much laughter—in places I would have expected only fatigue and tears.

One day, I got lost on my way back from the market and ended up in a narrow alley where a young boy was teaching his little sister to read. He looked up at me, wary but unafraid, and when I smiled, he returned it shyly. I realized, in that moment, that the Lima I was seeing was not one of victims, but of survivors—of people who, despite everything, chose hope.

Every evening, as the sun set behind the hills, the city seemed to exhale—a brief moment of peace before the night's chaos returned. I would sit on the hostel's rooftop, watching the lights flicker on, and feel both the weight of what I'd witnessed and the privilege of being allowed to witness it at all.

Barranco: Art, Music, and the Soul of a City

If Lima's hills were the city's backbone, Barranco was its beating heart. I quickly fell in love with the neighborhood's bohemian spirit—its tangled streets, its riot of colors, its refusal to be ordinary. On weekends, I wandered the streets with other volunteers, drawn by the sound of music and the scent of street food. There was always something happening—a guitarist perched on a stoop, a painter hunched over his mural, a group of teenagers breakdancing in the plaza. Barranco was alive with creativity, and it welcomed outsiders with open arms.

One afternoon, I stumbled into a tiny gallery where the artist himself explained each piece. He told me how, during the pandemic, he painted murals on abandoned buildings to bring hope back to the neighborhood. His eyes shone with pride. "Art is how we survive," he said, and I believed him.

The ocean was never far away in Barranco. Some mornings, I'd walk to the cliffs and watch the surfers chase waves below. The sea was wild and unpredictable, like the city itself. Standing there, wind tangling my hair, I felt a rare sense of freedom—a reminder that there was more to life than schedules and deadlines. Barranco taught me the value of joy—even defiant, imperfect joy. It was in the music that spilled from open windows, in the laughter of friends sharing a single plate of ceviche, in the children racing through puddles after a sudden rain. I learned to dance badly, to eat with my hands, to say yes more often than no. I learned that survival is not enough; we are built for celebration, even when there is little to celebrate.

I carried Barranco with me everywhere after that—a reminder that beauty can be an act of resistance, and that sometimes, the soul of a city is found not in its monuments, but in its music.

Stairways of Hope: Building, Painting, Belonging

I thought I knew what hard work was until I spent a week building stairs in the hills above Lima. Every morning, our team would trudge up dusty paths, greeted by the smell of wood smoke and the calls of early-rising children. The task was simple—mix cement, haul bricks, lay down steps—but the meaning was anything but. Each staircase we built felt like a small revolution. Families would gather to watch, children eager to help, elders offering advice and encouragement. The work was grueling; my arms ached, my skin burned, and there were moments I wanted to quit (A-LOT!). But the laughter and gratitude of the community kept me going.

The painting was my favorite part. We let the kids choose the colors, and they picked the brightest ones—turquoise, tangerine, sunflower yellow. Their hands left prints everywhere, little smudges of joy that would last long after we were gone. One boy insisted on painting a sun at the top of the stairs. "So everyone remembers to be happy," he explained with a grin.

It was during these projects that I truly felt I belonged. The language barriers faded, replaced by shared purpose, my Italian-English-Spanish was very functional. We ate together—rice and beans, fresh mangoes passed from hand to hand. We celebrated every finished step with cheers and sometimes a dance. I learned the names of every dog on the hill, and they learned to beg for my sandwich. On our last day, as we watched an elderly woman climb the new steps with ease, she turned to us, tears sparkling in her eyes, and said, "Ahora puedo ir a ver a mi hija." Now I can go see my daughter. Her gratitude was a gift, one I will carry with me for the rest of my life.

Building those stairs taught me that hope is not abstract. It is built, brick by brick, hand in hand, in small acts of care and connection. In the end, it was not just the community that changed—it was me.

Children of the Hills: Eyes That Speak

The children in Lima's hills taught me more than any textbook or lecture ever could. Their world was a patchwork of dirt paths, makeshift homes, and laughter that cut through the morning fog. They greeted us each day with curiosity, sometimes shy, sometimes bold, but always watching—eyes wide, searching, and impossibly alive. I remember the first time I knelt to tie the shoelace of a little boy who couldn't have been older than five. His shoes were worn thin, the laces knotted and frayed. He watched me with a strange mixture of suspicion and hope, as if unsure whether kindness was real or a trick. When I finished, he whispered "gracias" and darted away, only to return minutes later with a handful of wildflowers, pressed into my palm with a bashful grin.

There was a language to their play—a mix of Spanish, Quechua, and the universal code of running, tumbling, and shrieking with joy. Soccer balls made of tied-up plastic bags, jump ropes fashioned from bits of wire, dolls with faces drawn in marker. They invented games out of nothing, turning rocks into treasure and abandoned tires into carnival rides. I saw, too, the shadows behind their eyes. The way some flinched at sudden movements, or clung to younger siblings with protectiveness that felt too heavy for such small shoulders. One girl, Lucía, wore her school uniform every day, even when there was no class. She said it made her feel smart, closer to her dream of becoming a teacher. She asked me endless questions about Italy, about what I studied, about whether snow was really as cold as it looked in pictures.

During the health clinics, I watched children line up with their mothers, fidgeting nervously as we measured their height and weight. Some were undernourished, their arms thin as reeds, but their spirits were fierce. They giggled as I tried out my Spanish, correcting me with peals of laughter when I stumbled over a word. One tiny girl named Marisol insisted on teaching me a new phrase every day. By the end of the week, my notebook was full of her careful handwriting—her gift to me.

What struck me most was their resilience. Even after a long day of work, after carrying water up endless stairs or caring for younger siblings, they found ways to make joy. A game of tag at sunset, a dance in the dust, a song for no reason at all. Their eyes told stories—of hunger, yes, but also of hope, determination, and a stubborn refusal to be defined by what they lacked.

Sometimes, after the clinics closed and the tools were packed away, I'd sit on a crumbling wall and watch the children play as the sun slipped behind the hills. Their laughter echoed down the valley, a promise that life could be bright, even in the hardest places. I realized then that what I offered them was so small compared to what they gave me: a reminder of what it means to be open, to be brave, to dream. Then I felt extremely alone

Learning the Language of Kindness

If there is one language that transcends all borders, it is kindness. My Spanish was clumsy, my accent stubbornly Italian_English, but I quickly learned that a smile, a gentle touch, or a shared laugh could build bridges words could never cross.

Each morning, I tried to greet everyone I met with "buenos días," letting the warmth of my intention make up for the awkwardness of my pronunciation. Sometimes I stumbled, sometimes I was met with puzzled looks, but more often, faces lit up with recognition and encouragement. "Hablas bien," they'd reassure me, even when it wasn't true...at all.

In the clinics, kindness became a necessity. Mothers arrived anxious, holding sick children close, their eyes scanning our faces for reassurance. I learned to slow down, to kneel so I was on their level, to offer

a gentle "todo va a estar bien" even when I couldn't promise it was true. The doctors modeled patience—explaining treatments, listening carefully, never rushing. I watched the way they touched a shoulder, the way they waited for a mother's nod before beginning an exam. There were moments when kindness was all I had. Once, a little boy named Ernesto arrived with a deep cut on his hand. He was brave at first, but as the nurse cleaned the wound, he began to cry. I didn't have the words to comfort him, so I simply took his other hand, squeezed it gently, and hummed a lullaby my mother used to sing. His sobs faded, replaced by hiccups and then, finally, a shaky smile.

Sharing meals became another language of care. Families offered us bowls of soup, cups of sweet, milky coffee, sometimes even their only piece of bread. I struggled at first—to accept so much from those who had so little—but I learned that accepting was its own form of respect. It was a way of saying, "I see you as equal. I trust you." We laughed over spilled drinks, compared recipes, swapped stories about our homes.

Sometimes, kindness meant stepping back—letting community leaders take charge, letting mothers comfort their children, letting a local nurse explain a treatment in her own words. I learned to listen more than I spoke, to let go of the need to be in control.

The Weight of Disparity: Water, Food, and Dreams

The hardest truth I faced in Lima was the weight of disparity—the daily, grinding reality that some have so much and others so little. I saw it everywhere: in the lines for water trucks, in the patchwork of roofs barely holding back the rain, in the eyes of mothers who counted every coin. Water was a constant struggle. Whole neighborhoods depended on deliveries from aging tanker trucks, their schedules unpredictable. I watched as families collected every drop in battered buckets, rationing it for drinking, cooking, washing. Children learned early not to waste a sip. On days when the truck didn't come, tension hung in the air, and mothers gathered in the street, sharing rumors and worry.

Food was another battleground. The local markets brimmed with color—piles of mangoes, sacks of rice, mountains of potatoes—yet for many, the prices were out of reach. I visited a comedor popular, a community kitchen where women cooked enormous pots of lentils and rice to feed dozens of families. The food was simple but nourishing, and the sense of solidarity was palpable. Everyone contributed what they could—an onion here, a handful of beans there. When I joined them, peeling potatoes and listening to their stories, I felt a kinship born not of shared language, but of shared purpose.

Education was a dream for many, but also a privilege. I met children desperate to go to school, their hopes pinned to a worn uniform or a borrowed textbook. Some walked for miles each day, braving mudslides and stray dogs, determined not to let poverty steal their future. Others stayed home to care for siblings or help their parents work. I saw

the pain on their faces, the way they watched their friends leave for class with a mixture of envy and pride.

The disparities wore on me, gnawed at my conscience. Why should a child's future depend on where they are born? Why should a mother have to choose between water and medicine? I wrestled with these questions, angry at the unfairness of it all, guilty for the ease of my own life.

The Gift of Education: Beyond Pills and Bandages

The more time I spent in Peru, the clearer it became that true healing was rooted in education. Medicine could treat symptoms, but only knowledge could change the future.

I saw this most clearly in the health workshops MEDLIFE organized for the community. Mothers gathered under a makeshift awning, babies balanced on their hips, eager to learn about nutrition, hygiene, and first aid. The sessions were interactive—demonstrations with soap and water, games that taught children how to brush their teeth, stories about germs and how illness spreads.

At first, I worried that my efforts were too simple, too basic. But as I watched women ask questions, take notes, and practice new skills, I realized how powerful these moments were. One mother, Julia, told me she'd lost a child to diarrhea years before because she didn't know the signs of dehydration. She was determined to share what she'd learned with her neighbors. Her courage humbled me. I still wonder what the difference could be, seeing those little cars, speeding through dusty hills with Michael Jordan stickers stuck on them. In the end, Michael Jordan was the same person, for me, for them, but the parallel, the contrast of a civilization of mine had made me think. The children with the Warriors or Bulls t-shirts, were symbols for them, perhaps something unattainable and, in some way, I saw myself among them, because for me it had been too. Italy is a place where you can dream and wear a t-shirt hoping that one day you will set foot in a sports hall. But there, could you dream?

I also witnessed the ripple effect of education in the children. After a lesson on handwashing, a group of girls set up a "clinic" for their dolls, meticulously washing their hands and teaching their friends what they'd learned. Their pride was contagious, their curiosity boundless. Education, I saw, was not just about information—it was about empowerment. It gave people the tools to protect themselves, to demand better services, to dream bigger dreams. It was a gift that multiplied, spreading from person to person, generation to generation.

I thought of my own education—the teachers who encouraged me, the books that opened my world, the privilege of learning without fear. I realized how much I had taken for granted, how much responsibility came with that privilege. On my final day in the hills, a young boy handed me a note. In careful, blocky letters, he'd written, "Gracias por enseñar." Thank you for teaching. I tucked it into my journal, a reminder that the smallest lessons can have the biggest impact.

Community, Culture, and Celebration

My last weeks in Peru overflowed with community. There was a rhythm to life in the hills that I came to crave—a sense of belonging that went beyond language or blood. Every day, I was invited to witness the way people leaned on each other, how they celebrated not just festivals but the simple act of making it through another day. One afternoon, after a long session of painting and check-ups, we were invited to a community gathering. The invitation was casual—a passing word from a grandmother as she handed me a cup of maize chicha—but the meaning was deep. As dusk settled, families emerged from doorways, children washing up at spigots, women smoothing their hair, men straightening tired backs. The air was alive with anticipation.

Music started first—an old radio set on a windowsill, then a guitar, then hands clapping out a beat. Food appeared as if by magic: steaming pots of rice and beans, roasted chicken, fruit cut into careful slices. We sat together on plastic chairs, knees and shoulders touching, plates balanced in our laps. Conversation flowed in a patchwork of Spanish and laughter. Someone asked me to dance, and, blushing, I let myself be pulled into the circle. My steps were clumsy, but no one cared; here, joy was more important than perfection.

After the meal, the stories began. Elders told tales of their childhoods in the mountains, of the journey to Lima, of heartbreak and resilience. Younger voices chimed in with dreams—of scholarships, of new jobs, of a better future. I listened, sometimes catching only fragments, but the emotion was always clear. Here was pride, here was sorrow, here was hope.

Later, as the stars blinked on above the city, I found myself sitting beside Rosa, a mother of three. She told me about her daily routine—caring for her children, helping at the community kitchen, organizing neighbors for water deliveries. "It's not easy," she said, "but together, we find reasons to celebrate." Her words stayed with me, a quiet anthem to the power of community. That night, walking home along the winding paths, I realized how much I had received. I came to serve, but I was the one being filled—by generosity, by laughter, by the unbreakable bonds that held these families together. In their celebration, I saw a blueprint for living: find the light, share it, and let it multiply.

Faces of Resilience: Stories from the Andes

When our MEDLIFE group traveled inland, the landscape changed—but so did the people and their stories. The thin air of the Andes made every breath a conscious act, and the mountains seemed to watch over the valleys with ancient, silent wisdom.

In the villages outside Cusco, I met men and women whose resilience was written in every line of their faces. I remember meeting Don Mateo, a farmer with hands rough as tree bark, who invited us to share a lunch of potatoes and cheese by a tumbling stream. He spoke of his fields, of the unpredictable rains, of the struggle to send his daughters to school. "The land gives," he said, "but only if you respect it." I saw that respect in every careful movement, in the way he touched the soil, in the way he greeted the sunrise each morning.

Children in the Andes grew up fast. I watched little girls herd sheep up impossible slopes, their braids swinging, laughter echoing through the thin air. Boys helped their fathers repair stone terraces, learning ancient skills passed down through generations. Yet, in their eyes, there was still mischief, still that universal spark of childhood hope. One day, I joined a group of women weaving blankets. Their fingers moved quickly, weaving not just patterns but stories—symbols for the mountains, for water, for family. "We weave our lives into these threads," one woman told me. She handed me a strip of bright cloth, and I traced its rough edges, feeling the weight of tradition and love.

The Andes taught me that resilience is not just survival—it's adaptation, it's pride, it's finding beauty in hardship. I saw it in the way people gathered for festivals, in the way they prayed to the mountain spirits, in the way they welcomed a foreign student into their circle, offering food and laughter without hesitation. As we left, a little boy pressed a small stone into my hand—a token "for luck on the road ahead." I carried it with me, a reminder that sometimes, the smallest gifts hold the greatest meaning.

Into the Sacred Valley: Traditions That Endure

The Sacred Valley was a place where past and present danced together. Here, tradition lived not in museums, but in the daily rituals of life—in the planting of potatoes, the blessing of rivers, the songs sung at dusk as shadows stretched across the fields.

Traveling by bus along winding roads, I watched the valley unfold: emerald terraces carved by Inca hands, villages painted in sun-faded hues, market stalls overflowing with maize and quinoa. Our guide, Marisol, grew up in this valley. She spoke reverently of Pachamama—the earth mother—and the rituals that shaped her childhood. "Every seed we plant, every stone we move, is a prayer," she said. We visited a school perched on a hillside, where children greeted us with songs and questions. Their curiosity was electric. They wanted to know about my home, my studies, my favorite Peruvian food. I told them about Italy, LA, the very difficult Caltech, about my family, about the things I hoped to learn from them. We played games in the schoolyard, our laughter rising above the valley floor.

One afternoon, we witnessed a traditional ceremony—a blessing for the harvest. Elders poured chicha into the earth, offering thanks for the year's bounty. The air was thick with incense and song. I felt both outsider and participant, humbled by the depth of gratitude woven into every gesture.

Dancing with Life: Cusco's Joyful Spirit

Cusco pulsed with joy, even in the rain. Its streets were a tapestry of history and hope—Inca stones beneath Spanish balconies, narrow alleys blooming with flowers and laughter. Every day felt like a festival, and every plaza was alive with movement.

The first night, I joined a crowd in the Plaza de Armas, drawn by music and dancing. The air was crisp, the lights golden. I watched as couples twirled in traditional dress, their steps telling stories older than the city itself. A little girl grabbed my hand and pulled me into the circle. At first, I stumbled, but soon I found the rhythm—spinning, laughing,

forgetting my self-consciousness. Cusco was a city that celebrated everything: a soccer win, a saint's day, the simple joy of being together. Street vendors sold sweet breads and corn on the cob; musicians played Andean flutes as children chased pigeons across cobblestones. I spent hours wandering the markets, marveling at textiles bright as rainbows, tasting fruits I couldn't pronounce.

One afternoon, I met a group of university students practicing for a parade. They invited me to watch, then insisted I try on a costume—a heavy, embroidered skirt and a hat festooned with ribbons. I laughed at my reflection, but they cheered, snapping photos and teaching me the steps. "In Cusco, everyone dances," they declared. The city also held space for reflection. I visited ancient temples, lit candles in quiet chapels, climbed steep streets to watch the sun rise over red rooftops. In those moments, I felt small and infinite—a single heartbeat in the city's long, unbroken song. And then Machu Picchu... well, no words needed, for this treasure in the mountains. ⛰️

Leaving Peru was harder than I expected. As the plane lifted over Lima's endless sprawl, I pressed my face to the window and watched the city shrink into a blur of lights and memory. I carried with me more than souvenirs: I carried stories, faces, lessons that pressed against my heart and refused to be left behind.

Back in LA, the comforts of campus felt both familiar and strange. My classmates' voices, the scent of coffee and bread, the order of everyday life—all seemed unchanged, yet I was not the same. I found myself seeking out little reminders of Peru—a woven bracelet, a photo of the children, the rough stone from the Andes in my jacket pocket, and the passionfruit smoothie at red door.

I struggled to put my experience into words. How could I explain the way the hills of

Lima had taught me humility? The way a mother's gratitude had made me question everything I thought I knew about giving? The way a child's laughter could break your heart and heal it at the same time?

I threw myself into my studies with new purpose. Medicine was no longer an abstract pursuit—it was a promise, a responsibility. I joined campus organizations even more, shared my stories, tried to build bridges between my world and the one I'd left behind. Sometimes, I felt overwhelmed by the gulf between abundance and need, by the unfairness that still gnawed at me. But I also felt hope—an urgent, persistent hope that small acts, multiplied, could change the world. I was not brave enough to write this, I needed time.

Peru left me with questions I'll spend a lifetime answering. What does it mean to serve without saving? To honor tradition while embracing change? To let yourself be changed by the people you came to help?

I don't have all the answers. I only know that I am different now—more open, more grateful, more willing to listen. I carry Peru within me: the music, the mountains, the hands I held, the lessons I learned. And wherever I go, whatever I become, I will try to live as they taught me—finding reasons to celebrate, to share, to hope.

My journey is far from over. In many ways, it has only just begun.

Epilogue: A Letter to the Reader

Dear Reader,

If you have traveled this far with me—across oceans and continents, through the tangled streets of Lima and the soaring silence of the Andes—thank you. Thank you for stepping into my shoes, for opening your heart to the lives and lessons that reshaped me. I have tried, with every page, to honor the people who welcomed me into their homes and stories, and to be honest about my own transformation along the way.

When I first set out for Peru, I was searching for something I couldn't name—a sense of purpose, a test of my resolve, a deeper understanding of what it means to help. I thought I would be the one offering service, bringing knowledge or comfort to those in need. But the truth is, I was the one who received the greatest gifts.

Peru taught me humility in the face of hardship, and awe in the presence of resilience. I learned that suffering wears many faces, but so does hope. I learned that medicine is not just a pill or a procedure, but a hand held, a word spoken, a promise that you are not alone. I learned that education is a form of healing, and that community—real, messy, beautiful community—is the strongest medicine of all.

I carry with me the laughter of children who turned dust into playgrounds, the wisdom of elders who measured wealth in memories rather than money, the songs and dances that insisted on joy in the very shadow of difficulty. I carry questions, too: about justice, about privilege, about what it means to live a life that matters—not just to yourself, but to the world around you.

If you are holding the *Tech* now, perhaps you too are searching. Maybe you are wondering how to bridge the distance between worlds, or how to serve without saving, or how to let yourself be changed by the people you meet. I cannot give you answers. But I can tell you this: the world is full of places where your presence, your willingness to listen, your open hands and heart, can make a difference. Sometimes the greatest gift you offer is not your expertise, but your humility. Sometimes the most profound act is simply to show up, to witness, to walk beside someone in their struggle or their celebration.

I hope my story encourages you to step beyond your comfort, to seek out the unfamiliar, to risk being changed. I hope it reminds you, as it reminded me, that every life is a story worth hearing, every community a lesson in survival and grace. The bridges we build—between nations, between hearts, between past and future—are what make us truly human.

Peru will always be a part of me. I hope, in some small way, it becomes a part of you as well.

With gratitude and hope,
Camilla

Vive la Fête: A Revolutionary Blacker Interhouse

Alicia Zhang and Maxwell Montemayor
Culture

Last Saturday, the delicious scent of crème brûlée and chocolate croissants wafted through the alleys of Blacker Hovse. Moles hurried around the Hovse, tidying up their courtyard and dining hall for their annual Interhovse. The theme? The French Revolution. After months of preparation—with input from what felt like the entire Hovse—a production worthy of that era's dynamism and ingenuity came together marvelously, complete with a panoply of renegade constructions and toothsome dishes.

That the engineering at this Blacker event was so impressive is no surprise. A team headed by Jade Millan (ME '25) constructed a mock guillotine. The builder of last year's crack shack, Ahaan Shetty (Phys '27), made an even bigger shack, functioning as a Revolutionary hideout complete with a dartboard of the bourgeoisie. To go along with the edible 3-tiered cake, Emily Nikas (Chem '27) constructed a 6-tiered cake of spackle frosting and foam. And the centerpiece, no doubt, was the Arc de Triomphe (a 1:10 scale model!), which towered above the courtyard and platform, nearly reaching the South Hovse roofs.

We spoke to last year's workfrosh, Neev Mangal (ChemE '27), now our illustrious gdb-president, about the event. "This year's Blacker Interhouse is genuinely the most impressive Interhouse I've seen. We put a ton of time into it, and it definitely shows," he said. "We brought back the idea of having huge building projects alongside our platform and, although it was rocky at the beginning to get work off the ground, we really pulled it together at the end. I'm really proud of everything we accomplished and I'm really happy with how it turned out."

An apocalyptic but elegant mural of the Tuileries Palace in flames designed by art frosh Chloe Wang (EE ' 28), was hung in the lounge. French delicacies like quiche and croquembouche lined the elaborately decorated dining hall. Beautifully executed by Sylvia Wang (EE '25) and Andrea Torres (CNS '25), mylar mirrors and marble wallpaper reflected the long tables of fresh flowers interspersed with French food, from homemade chicken crêpes to a tower of macarons and an enormous croquembouche. Bakers had begun preparing macaron shells weeks in advance. For the exquisite representation of French cuisine, we can thank Gracy Wah (ChemE '28), who served as Food Frosh—not to mention Amelia Saffron (BioE '28), Money Frosh.

Despite some worries of low attendance due to the beach trip, the event was a riotous flurry of activity. This was thanks, in no small part, to the extraordinary collaboration that made it all happen.

Albert Huang (CNS '27), who spearheaded the creation of the Arc, explained how the Hovse attitude changed as things gradually came together. "I really enjoyed building the Arc with everyone. We started by thinking like 'There's no way this is going to happen,' but with a glimmer of hope that it could, and slowly the project took shape and started coming together. We really came together as a Hovse to put it together, from using ~1/4 of the Interho[v]se budget, to everyone who contributed pieces that really leveled it up."

Albert shared a heartening interaction with some attending alumni: "One of my favorite moments was when an alumni couple from '92 was visiting, and I was talking about how we probably didn't build as crazy stuff as they could back in the day—as we generally do." They then asked,

'How big is it gonna be?'

'16 feet tall.'

'Wow, I don't know if we've ever done anything like that.'

They had been part of the class that built the whale in Millikan Pond. We often think of ourselves as having fallen off from the 'good old days', but this was a 'we're so back' moment."

"Most importantly, I think we really came together as a Hovse this year to build Interho[v]se," Albert continued. "It was a huge undertaking and stressful all around at some points, but it's amazing to see what we can do as a team (especially in that last week). I only saw one part of it (the Arc/construction side), but I know people also worked super hard and came together with mural, lounge, food, everything."

Unfortunately, Albert couldn't attend the interhouse. Hearteningly, the rest of the Moles got together after the party to record a short thank-you video for him.

The workfrosh occupies an especially demanding position, as Neev told us. "Last year [when Neev was a workfrosh], I really only thought about building the platform, and that seemed like a lot of work in itself." Our current workfrosh, Sami Panyam (MatSci '28), Jiahui Xie (Phys '28) and Luis Serrano (ME '28), seem to agree. "Being workfrosh is like having a minimum of 30 additional units of work in a week," says Serrano.

Now, was it worth it?

"It was pretty sick seeing everything come together. The food was a hit, and I thought the set list was solid overall," Luis said, beaming.

In the spirit of Interhovse culture and support, particularly when there are now rare moments to get all the Houses together, there was a point of frustration a few weeks before when it turned out that half of the eight Houses would be off-campus during this weekend. Thankfully, Techers of all Houses came together to give the party the vivacity it deserved. Ava Barbano (CNS '26) from Ricketts Hovse concurs: "The food was amazing and the decor came together so well! The giant cake was iconic. I had a great time dancing and embracing my inner emo."

"It was sucky that the turnout of people was low because people thought it would be a good idea to have their beach trip on another House's interhouse. Regardless, the people that came carried the energy to ensure we had a great time," Luis said. "Especially towards the end, where it became chaotic and people moshed."

The last hour was unlike any interhovse in recent memory: the songs consisted of nearly all alternative music, with some Caltech classics sprinkled in. Mr. Brightside and Killing in the Name were played alongside Death Grips and Prince. There was non-stop moshing and some attendees used the cardboard prop barrels from the lounge, as armor in the pit. The energy was so high, people somehow moshed to Kids by MGMT. Many mole seniors were happy that this culture was conserved.

Reflecting, Neev emphasized the grandeur of the endeavor. "This year I had to think about every aspect of Interho[v]se, and it dawned on me how big of an undertaking Interho[v]se is," he said. "I genuinely think that we would never be able to pull this sort of event off if it weren't for the fact that Blacker has so many passionate people who will take on projects and find other people to see them through with." We could never list every individual who contributed their time and talent, but it's exactly that spirit of collaboration—and the genuine care each Mole pours into Blacker—that made this event shine. It's the process of building together that unites us more deeply than any single celebration. To all our frosh and upperclassmen: Blacker sends its heartfelt thanks and affection.

Indeed, this revolution left everyone prouder of the Hovse they call home. "At the end of the day, I was just immensely happy to see everyone having a good time at our Interho[v]se," Neev added. "I can't ask for anything more."

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The News-Opinion divide
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 a News article, the writer shall not insert their own personal feelings on the matter; the purpose is to let the facts speak for themselves. The Tech assumes full responsibility for all content published as News.
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. Again, the role of the Tech here is to help the whole campus communicate their ideas and share their stories, not promote specific ones. Content published as Opinions do not necessarily represent the values of the Tech or our staff.
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. In other words, no second-hand information or hearsay shall stand on its own.

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. A reporter's observations at a scene are considered facts for the purposes of a story.

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. Sources for the Tech will never be surprised to see their name published.
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. Named sources are more trustworthy than unnamed sources because, by definition, unnamed sources will not publicly stand by their statements.
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. Otherwise, there can be no certainty about whether the source and their quotes were falsified.
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. No truly anonymous submissions shall be published. Conversely, no submissions shall be published with the author's name without their consent.
When we choose not to identify a source by their full name, the article shall explain to readers why.

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

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The California Tech aims to publish biweekly 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; email submissions to tech@caltech.edu, or submit them on our Discord server (https://discord.gg/Zaah8749s2). 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 12 PM on 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.

The California Tech #24

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 **maybe win a fabulous prize???**

"On campus" is defined as the convex hull of the buildings shown on caltech.edu/map/campus.
The QR code will be hidden somewhere within the pictured area.

LAST ISSUE'S WINNERS!

Kevin Kan, 12:56 4/22, going easy on us this week, huh?

JMM, 12:54 4/28, the hardest was to read the journal

anica ancheta & aaron zhou, '28 4/23 12:17

Anthony Wang & Kyra Phaychanpheng, 3:37 4/22, this one was lighttt

Snow, 22' nice afternoon walk

Linqing 25' 2:15 4/27 fun Sequoia, Venerable '28

Alexi Stapf '27 4/22 22:56 damn that was easy

Crum, '28, I agree with alexi on this one