

New Security Cameras to be Installed at Undergraduate Residence Entrances This Fall, Live Starting January

Camilla Fezzi
News

Caltech Campus Security and the Facilities Department have begun the process of installing outdoor cameras at all entrances to undergraduate housing. This addition expands an existing network of cameras around graduate housing, namely the Catalina apartments, and atop blue-lit emergency telephone stations.

Chief of Security Hampton Cantrell has communicated openly with the community about this process, providing information through emails with the *Tech*. Cantrell and Robert Bagley, Campus Physical Security Systems Manager, also met with the Interhouse Committee (IHC) to address questions and concerns from the undergraduate house presidents. The IHC issued a statement to the *Tech* containing a summary of that meeting.

All security cameras and their footage are subject to the "Use of Safety and Security Camera Guidelines" document, enacted in Aug. 2024 by Associate Vice President for Human Resources Julia McCallin. Students are encouraged to review these guidelines at this link, also accessible using the QR code:



This project is funded by a five-year grant from the California Office of Emergency Services, ending on Dec. 31, 2024. In the final year of funding, a portion was specifically earmarked for security initiatives, and the camera project was identified by the Security Office as its most effective use.

WHY?

These cameras present a major evolution in campus security. Many peer institutions already have similar camera programs, and Cantrell hopes that the cameras can help security's response to bike thefts, a common problem in both the North and South Houses, and unauthorized entries.

While the institute lacks data on the cameras' impact, Cantrell emphasized that "as Caltech grows with our campus security camera system, we will certainly consider how to gather useful metrics. Security is often requested for camera footage regarding thefts, personal injuries, vandalism, traffic accidents, etc." The cameras will benefit post-incident investigations, while not replacing patrols, and serve as part of a comprehensive security strategy.

INSTALLATION

The location of each camera is chosen by weighing maximum effectiveness against minimum intrusion. Placement is done according to a tight set of criteria, with cameras placed at entrances near card scanners to avoid capturing private yards or rooms. During the committee meeting, Cantrell

and Bagley reviewed each location with the IHC to receive unanimous approval from house presidents. Special care is taken toward areas with past incidents, such as theft or sexual assault, where footage could be especially valuable.

Each camera is motion-activated, recording five seconds before and after movement, and with a controlled range of 15-20 feet subject to calibration. Infrared technology enables each camera to work at night. In full accordance with the privacy policy, there are no audio recordings. The system retains all footage on a rolling 30-day basis, rewriting recordings except when such footage has been saved for active investigations.

CAMERA PLACEMENT

The camera plan covers entrances to the North and South Houses, including external staircases to serveries. Two cameras shall be attached outside every house, with an additional two units targeting the external staircases of the servers. Cameras will cover the SAC area, the Olive Walk between Dabney and Fleming Houses, outside of the South House laundry room, the servery stairwell between Ricketts and Fleming Houses, Fleming House from both the Olive Walk and Orange Walk, and similarly for Ricketts House. Cameras in Dabney and Blacker Houses will view areas off Orange Walk, excluding backyards to ensure resident privacy. The North Houses will be monitored by three carefully placed cameras.

PRIVACY

Cantrell and Bagley added that if cameras are positioned in a way that one could see into the windows of student rooms, the residents would be able to put up privacy screens. This would blur all of the footage taken in the area where a screen is put up and was said to be unable to be removed after the footage is taken.

Asked whether cameras would limit student privacy, Cantrell assured otherwise. "Caltech's Use of Safety and Security Camera Guidelines require us to consider privacy as a part of the installation process. This should help reassure the Caltech community that the cameras won't view private spaces and that appropriate protocols and protections are in place to protect any footage."

Acceptable uses of video data are to deter crime against persons and property, investigate allegations of criminal activity or policy violations, maintain and upkeep facilities, monitor sensitive areas, and comply with legal requirements. Campus Security will maintain camera inventory, review and approve camera requests, and verify that proper signage is posted where cameras have been installed. Caltech Facilities is responsible for arranging the installation and ensuring adherence to security guidelines. All said, it is worth repeating that all cameras will be outside the gates, and that they won't be live until January.

ASCIT BoD Hosts First Cmte. Chair Training and Workshop for Upcoming Student Faculty Conf. and Student Life and Experience Conf.

Jonathan Booker
News

We are pleased to report on the progress of preparations for the Student Faculty Conference (SFC) and the Student Life and Experience Conference (SLEC). On Wednesday, October 23, 2024, the ASCIT Board of Directors (BoD) hosted a training and workshop for all committee chairs for both conferences. Held from 7:00 p.m. to 11:00 p.m. on the 9th Floor of Caltech Hall, the event provided committee chairs with food and refreshments to enjoy during the session, allowing them to settle in comfortably.

The training began with a presentation by Lindsey Malcom-Piqueux, Assistant Vice-President for Diversity, Equity, Inclusion, and Assessment, focused on facilitating inclusive and effective dialogue in committee discussions. Strategies for creating inclusive team environments were introduced, with an emphasis on psychological safety to encourage team members to share ideas, questions, and concerns without fear of negative repercussions.

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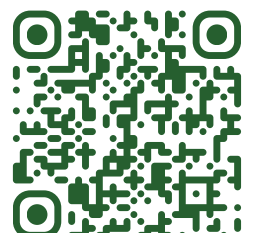
Can we detect an Earth-like Exoplanet orbiting a Sun-like Star for signs of life?

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Crossing Over: An Arts and Sciences Fusion at Caltech

Make *The Turtle* Caltech's New Mascot! Sign the petition here:

or at tech.caltech.edu/turtle



History of the *Other* Mascot

Theodore Havel
Culture

The Caltech Turtle Club, founded in 2021, began its campaign to change the school's mascot from the beaver to the turtle in April 2024. One of their chief arguments, presented on the club's website, is for uniqueness:

"It's time for Caltech to distinguish itself with a mascot that sets us apart. MIT may also boast the beaver, but we are Caltech – a beacon of originality and ingenuity. By embracing the turtle, we not only carve out our own identity but also symbolize our commitment to forging our own path in the world of academia and beyond." (<https://turtle.clubs.caltech.edu/turtle-mascot>)

A handful of colleges and universities in Los Angeles have animals as mascots, including Traveler at USC, Cinco at Glendale Community College, and

(last but not least) Bernoulli the Beaver at Caltech. In addition to Caltech, several engineering schools use the beaver as a mascot, including Oregon State and MIT. The MIT beaver's name has been Tim (MIT backwards) since the 1990s, but it was first adopted as the institute's mascot in 1914 ("An interview with Tim the Beaver", MIT News).

Caltech was founded in 1891 by Amos Gager Throop, who originally named the institution Throop University. Throop Hall, the first building on our current campus, opened in 1910. The institute's name was changed to California Institute of Technology in 1920 (Caltech Library Archives). In 1922, The Big T (Caltech's yearbook) documented the adoption of the beaver as the school mascot. It was announced by then-student body president Paul Ames on October 21st 1921, in front of Throop Hall on Bonfire Rally night (back when we used to

have a football team).

Throop Hall was demolished in 1973 due to damage from the 1971 San Fernando earthquake (*Memories of Throop*, Caltech Magazine). The Throop Memorial Garden, more popularly known as the Turtle Pond, was built in 2006 to commemorate the building. There are currently over 100 turtles living in the pond (*What's With the Turtles*, The California Tech, April 24, 2023).

Caltech's beaver was christened "Bernoulli" by popular vote of the community on May 21, 2023.

The Turtle Club's mascot campaign aims to help differentiate Caltech from MIT and have a mascot reflective of our campus. They have a petition on their site that is currently soliciting signatures; it has 547 at the time of this writing (Caltech Turtle Club website).

Will your signature be number 548?



Throop Hall in 1944. Credit: NASA/JPL-Caltech

A List of Not-So-Mid Things We Enjoy

Blossom, Fubbles, and Duttercup Student Life

When exam weeks are upon us, it can be hard to maintain a positive attitude and keep your head up. It is a particularly brutal season of term, where long (4 to 5-hour long) exams for some classes are coupled with problem sets and projects that are still on schedule for others. Unlike finals, we don't get the week off for midterms, so this season is particularly mid. It's so hard to forget that there are things that we can enjoy and look forward to during these exams, and once they are done. To all of you reading this article, keep pushing through! We are proud of you, and you are doing really well. The light is at the end of the tunnel, I promise.

Favorite study spots

Blossom: I am a big fan of walking around and figuring out where to study to procrastinate (and collect my thoughts). I experimented a lot over the past year where I could study and have a great time. Here is a list of some of the best lock-in spots, IMO:

- Prior to me getting a monitor this summer, the double monitors on the SFL third floor (optimal for studying for a certain class's long closed note exams).

- Chen 2nd floor standing desks - these are near the balcony, and I swear this is amazing. I am a big Chen proponent, and anywhere is basically a nice place to lock in, but the view is really good + the desks can rise, so you don't have to sit the whole time. Perfect to lock in for especially long sets.
- Lauritsen 4th Floor: This is perfect after 12-AM activities. Accest your PMA friends to let you in (Frosh and Smores, you might have access bc of Ph1 and Ph2 but don't quote me on that). The wall to wall blackboards are perfect, and the chalk color available is amazing.
- SFL Third Floor: Specifically, the big tables near the plants, or the balconies. The vibe of working there with other people but in silence actually does wonders. Booking a study room is also an immaculate option.

Fubbles: I'm not going to lie: it took me until this term to finally go to the third floor of SFL for the first time. I know, I know, that's kind of wild considering it's the main library on campus, but I find that I can't lock in if my surroundings are too quiet. That's why my recent go-to study spot has been the back couches in Red Door, the ones near the bookstore. This way I can hear the hum of conversation as I do my set, and I can also order however much caffeine I need to fuel my brain.

Duttercup: Basement SFL Floor: Specifically the one person chair to the left when you walk down the stairs.

Favorite dining menu item

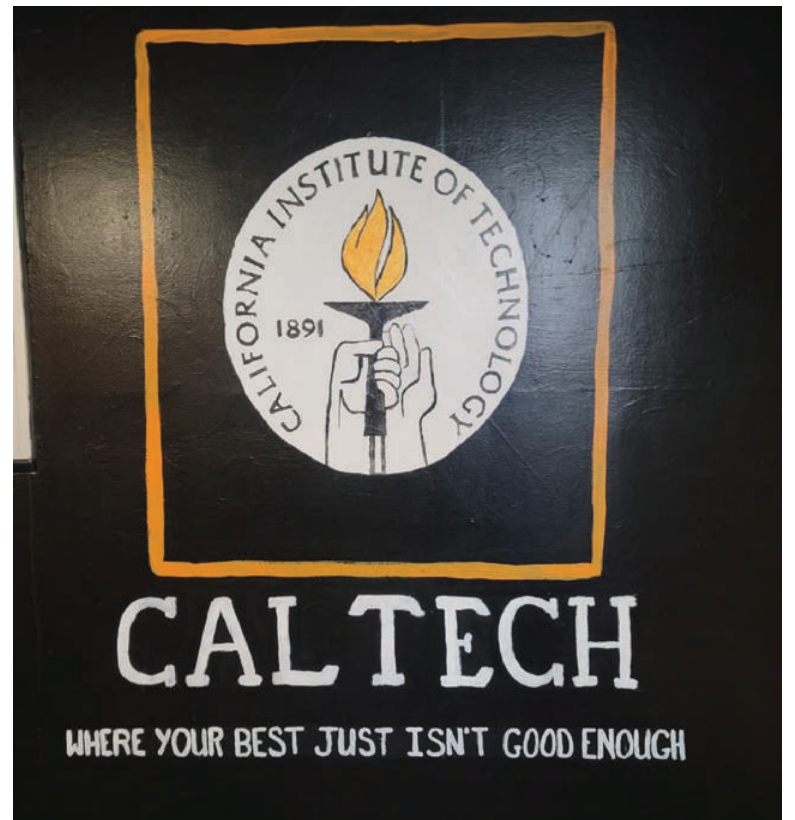
Blossom: Breakfast wise, I am a big fan of the Broad Nutella Toast and the Browne Breakfast Omelet. We need Broad back, I am so serious - I cannot keep living off of solely Red Door and Browne. The Red Door matcha (always medium so it's less dilute) with strawberry or rose syrup (or hibiscus, when it's back) also goes really hard. Finally, I am a big fan of adding the seasonal pumpkin syrup to an iced chai (medium) with oat milk. Also, I am a big fan of Browne sushi, the Red Door Grilled Chicken and Red Tofu sandwiches, the Browne sweet and spicy chicken pizza, and the Udon!

Fubbles: As a Broad stan, I am waiting for the day Broad Cafe reopens so I can reunite with my beloved Ginger Chicken Banh Mi. However, until then, I have been frequenting Browne for the Breakfast Sandwich in the mornings and the sushi bar during lunch. As for drinks, I'm a loyal orderer of the Pumpkin Spice Latte at Red Door. (Yes, I know it's just a latte with pumpkin syrup added to it but it's good, okay?)

Duttercup: Sunrise breakfast from Browne during the weekdays. I get that meal so much that the cook doesn't even need to ask anymore "what is your order" because he just knows and says "I got it". On the weekends I get a bacon breakfast sandwich with a side of hashbrowns. The cook on the weekends also knows my order and just says "breakfast sandwich with bacon, side of hashbrowns" and I just smile and say "yes sir."

Favorite mural in the Houses

Blossom: I am personally a big fan of the Venerable planet mural found in the blue Al-



Duttercup's pick: Page mural. Photo Credit: Michael Gutierrez

ley. The colors are really pretty and every time I walk past it, it makes me happy.

Fubbles: I really love the Haikyuu mural in one of the Lloyd stairwells. Haikyuu, an anime about high school volleyball, is one of my favorite shows, so I really love that someone else enjoyed it enough to make such beautiful art out of it. (Side Note: To this day, I am still saddened by the fact that Caltech does not have a men's volleyball team.)

Duttercup: My favorite mural is the Page mural that says something along the lines of "your best is just not good enough at Caltech." I think it's very funny and relatable because as much as you think you got it, Caltech just slaps you across the face.

Favorite places on Lake Ave

Blossom: You can never go wrong with Twinkle Tea (get the student discount with your ID). Mandarin Coffee is

particularly solid (go at a non-busy hour and you might have to leave slightly early for most efficiency) - their hojicha is to die for. Pillow Talk has an amazing mango matcha and a honeycomb latte. This is leaning more Green Street, but New York Gyro is fire.

Fubbles: Just like Blossom, I'm also perhaps a boba and matcha addict. Twinkle Tea is one of my go-tos, but I also frequent OinkMoo Tea Bar and Float Pasadena Cafe. Sugary drinks aside though, I find that the place on Lake I visit the most is actually Walgreens! Not only do I get my vaccinations there at the start of the year to avoid the frosh plague, but I also go every few weeks to stock up on sunscreen, body wash, and Robitussin, which I always end up chugging like it's water.

Duttercup: Urban Plates is amazing. If you really want a meal after finally being tired of CDS you can go there and their plates are delicious. I recommend the steak or the shrimp plate with brussel sprouts and mashed potatoes.



Fubbles's pick: 3rd Floor SFL. Photo Credit: library.caltech.edu

Hand Drill Hannibal Strikes Again

Sascha Goldsmith Humor

Olive Walk, Caltech, Pasadena, USA — In a shocking turn of events, the elusive "Hand Drill Hannibal" has struck again, this time pilfering hand drills from both Blacker Hovse and Page House within the last week. Local residents are in a frenzy as the drill bandit continues to leave no tool unturned.

Witnesses describe Hannibal as a figure shrouded in mystery. "They've definitely got a taste for the finer drills," said one concerned citizen, who wishes to remain anonymous.

These theft reports come amid a fierce campus war that also occurred within the last week, with frosh "pranking" rival houses across the Olive Walk with devious licks including but not limited to: pool tables, basketball hoops, gongs, signs, couches, seesaws, TVs and other cultural relics deemed non-RFable.*

Authorities (house stewards) are on high alert, urging residents to secure their power tools and watch for any suspicious activity. "If you see any frosh loitering around your tool room with a mischievous grin

and a cordless drill, you are urged to immediately contact your nearest senior," warned an anonymous representative of the Class of 2025 in a press release just now.

Page House leadership announced to fellow house members over Discord, pleading for answers and whereabouts of the culprit(s) who seemed to have stolen all of the drills, "Does anybody know where the House Drills are? They've disappeared from the work closet?!"

Since Interhovse construction in Blacker during the third term of last year, Blacker has experienced an unintended reduction in supply of hand drills, making its culture of construction and building more difficult to carry out. The tool room went from 5 hand drills to only 1 as of Oct 16.

"[In] the past couple years [we've] had tools disappearing like crazy from the Blacker tool room", due to theft, loss, and misplacement. "We are unsure if it is [Blacker] members or other houses [who are responsible], but we are going to need to get the door code changed and all Blacker tools may be entered into a management software. This would require moles

to use their phone to connect to the tools over Bluetooth and sign the tool out before they would be able to operate," says Damage Control representative Luke Alvidrez (ME '26, Blacker).

Meanwhile, speculation is rampant about which house might be next on Hannibal's hit list. With Blacker Hovse already devastated by the abduction of their precious drills, and Page House's Interhouse party construction scrambling prior to their *very fine* event this past weekend, demand is growing for an answer and the return of the drills.

As the drill drama unfolds, one thing is clear: the stakes are high, and the community is united in their quest to catch these kleptomaniacal frosh. Keep your eyes peeled, Techers — Hand Drill Hannibal is out there!

*Non-RFables (as defined by IHC Resolution 1):

- Blacker Hovse Tapestry
- Fleming Hovse Bell
- Fleming Cannon
- Wall-Sized Fleming Flag
- Lloyd House Portrait
- Page House Portrait
- Page House Nixon Poster



The Hand Drill Hannibal (Artist Rendition)

- Page House Pool Tables & Equipment
- Lloyd House Gong
- Dabney Hovse Tarot Card Murals
- Avery House Canvas Murals
- Ricketts Hovse Pool Tables & Equipment
- Ricketts Hovse Speakers
- Venerable House Crest Banner
- Grant D. Venerable Portrait

Submission Form for ASCIT Secretary Emails

“Do you want your club/event announcement to be sent to the ASCIT undergrad mailing list? Submit it here!”

[ASCIT Donut] Weekly Announcements



○ ASCIT Secretary <auto@donut.caltech.edu>

To: ug@donut.caltech.edu



Broad Cafe Reopens for Business!



Monday, November 11th — It was short and sweet; Matthew Torres, the FoodComm chair, just said a few words and then cut the ribbon. The official reopening was today at 7:30, but unfortunately they didn't have the full breakfast menu yet, just drinks and baked goods. They do have the full menu for lunch now, which started at 11am.

—KAI SVENSON, THE CALIFORNIA TECH

“Did You Vote?” Interview Solicitation

Did you vote?

We'd like to hear from members of the Caltech community about **who they voted for in the 2024 US presidential election and why.**

We'd like to represent a range of opinions, so (since it's likely that a majority of Caltech community members voted Democrat) we're especially interested in hearing from those who voted **Republican** or **third party / independent**. We are also especially interested in people who voted as residents of **swing states**.

You can opt to have your statement published anonymously, though your identity will be known to the reporter Lynn Feng, and one of the Tech editors Unai Arrizabalaga or Michael Gutierrez.

If you're interested, contact Lynn at hfeng@caltech.edu. We'd prefer to do brief video calls or text exchanges over solely accepting a written statement.

Note from Lynn: I have friends who voted for Harris, friends who voted for Trump, and friends who voted third party. Don't be shy, send me a message.

Best of TQFRs: Spring 2024

Tech Staff Academics

Teaching quality feedback reports, or TQFRs provide an opportunity for students to share their experiences, either positive or negative, about classes they have taken. In this new column we will look at some of the most iconic.

ChE151B Physical and Chemical Rate Processes

“This class is useless. I will probably never use any of this again, and the content is so hard I actually started going to therapy.”

Bi 001 The Great Ideas of Biology

“This course was wildly upsetting until I became apathetic

towards it (and went on P/F). When I was actually trying to do the sets, especially the ones that had coding involved, I was spending upwards of 8 hours on sets, not including the hours spent in lecture, watching the coding tutorial videos, or quite honestly, crying over it.

The class isn't *hard*, but just a waste of time and tuition.”

Bi 009 Cell Biology

“Where do I even begin. This class was easily the worst I've taken at Caltech, beating some major competition. Imagine a class that pushes multiple people completely out of the BBE division because how bad it is. A class that requires you to go to TA office hours and write down, word for word, what the TAs are saying in order to reach

arbitrary grading schemes. A class that was arbitrarily changed to closed note, on paper, uncurved exams. Oh, and its at 9 AM with only one recitation, also at 9 AM. There really is not anything redeeming about this class. [The] lectures could be interesting but none of them had any real relation to the class content. We ended up extremely behind on the course where it wasn't uncommon for [the professor] to get through 2 out of the 40 slides he had for each lecture... There were questions on the sets that would be answered by looking at one line in one caption on one page of the textbook. In most Caltech courses, you learn how to use your brain, learning problem solving, here you learn how to use command F very well and how to cram a

bunch of information that still makes you come up short on the midterm and final (which are conveniently a large part of the grade). And if you try to learn from the many points you lose, have fun, where feedback can sometimes be composed of just “incorrect” with no explanation, and the favorite “not enough detail -10”. So, if you need to take this course, good luck. Maybe you'll get a better course than this, but your going to be missing Bi8 real soon.”

EE 090 Analog Electronics Project Laboratory

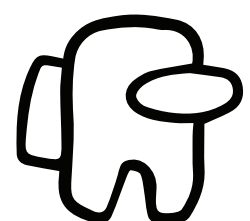
“As much as I would love to write a rage-fueled diss track strong enough to fulfill my intensive writing requirement, I need to be fair here. This class does actually have potential. EE45 is the first time we put all

of our hard learning into practice, where for the first time you feel like you're actually being an electrical engineer. EE90 solidifies that quite strongly, and there's a lot of satisfaction in ending the term with a working PCB function generator that you designed and built from scratch.

That being said, there is one glaring issue with this class that **MUST** be addressed in order for it to have any chance of living up to its potential: [the professor]. It is impossible to overstate how bad [he] is at running a class. If he was a world class researcher pumping out patents daily and he had to satisfy his teaching requirements, I'd give the man a pass. But he's here as a lecturer, and is entirely incompetent at it.”

This space unintentionally left blank!

<3 —the Tech editors



The Dean's Corner

On Athletics



Jennifer Jahner
Column

Caltech experience as a means of supporting students' overall health and wellbeing. Caltech athletes, present and past, have pursued rigorous courses of study alongside their practices and games, community volunteer work, campus leadership roles, and other extracurriculars. The same resilience, motivation, and determination that allow one to excel in the pool or on the field have obvious benefits in the classroom and lab as well, as our stellar student-athletes make clear.

This past Monday, November 4, I attended the meeting co-hosted with my colleagues, Professor Gil Refael and Professor Omer Tamuz, that sought to answer questions and concerns about changes to the Athletics program. These changes follow in the wake of the Faculty Board resolution, passed in June, that voted to alter the weight accorded to recruited athletes in our admissions process. The resolution stated that any alteration to this weight is to be taken gradually, deliberately, and with regular consultation of Institute leadership

over a period of years. It also reaffirmed our commitment to remaining a member of the SCIAC conference we helped to charter.

Admissions decisions are the most difficult and sensitive that any university faces, and each member of this community feels the impact of those decisions personally. Caltech admits students with exceptional STEM passion and talent as well as the creativity and drive to thrive in our small, close-knit community. Every student here has been welcomed to campus on these terms. The wide range of extracurricular talents that students bring to campus—whether athletic, artistic, musical, or otherwise—all contribute to the richness of our larger community and showcase the dedication and breadth of the student body as a whole. But with an average matriculating class of fewer than 250 students, we are obliged to constantly evaluate and update our admissions practices. The Faculty Board felt it important not to give specific weight to certain extracurricular pursuits

Athletics in Admissions - Open Office Hours Recap

Emily Yu
News

On Monday, November 4, faculty representatives Professor Gil Refael, Chair of the Faculty Board, Professor Jennifer Jahner, Dean of Undergraduate Students, and Professor Omer Tamuz, Chair of the First Year Admissions Committee, hosted open office hours for students who wanted to hear more about the changes to Caltech's undergraduate admissions practices. These changes involved reinstating standardized testing and reducing the role of athletic recruitment in admissions.

Before taking questions, all three professors emphasized that every student at Caltech deserves to be here and has the support of the faculty.

According to Caltech's bylaws, the faculty is primarily in charge of admissions policy and curriculum. They are guided by the mission of Caltech, which is "to expand human knowledge and benefit society through research integrated with education." In terms of athletics in admissions, Professor Refael stated that "the preference that was given to athletes over the last few years will be gradually diminished, such that admissions will be based solely on academic merit and excellence." This gradual ramping down will occur over the next three to four years. He noted that "this is not a policy that can be reversed."

In recent years, the extent of athletics in admissions has been the following: after a student passed the pre-read, coaches would fill out a form stating that this is somebody wanted, for example, on the men's water polo team. The Athletic Director could then tell admissions that the men's water polo team has very few players and is at risk. Admissions would receive this information on a spreadsheet that illustrated each team's status.

This recruitment process was less frequently used for athletes in the past, but has been employed for upwards of 90%

of athletes in recent years. Regarding this process, Professor Tamuz stated that admissions stands by every decision, "but we did give preferential treatment to those who were pushed forward by the coaches. So, if you were somebody that was needed on a team because they needed more people, and you have the role of the pitcher, for example, which is very specialized, this was something that was actively pushed forward in the admissions process." This process was not implemented by any discussion among the faculty and it was only last year that "the faculty discovered this."

By reducing the weight of athletics, a student who is not actively recruited by a coach will go through the same process as somebody who has been, such as a guitar player who dedicates 20 hours a week to music and shows the same discipline as an athlete.

Professor Jahner acknowledged that, for the student-athletes in the room, "it probably feels like the faculty have just decided that this thing that you've invested so many hours and so much of your life in is now less important." However, it is important to remember that it does not "take away from anything that [current student-athletes] bring to this campus."

A concern was raised about how admitting fewer or lower-quality athletes might impact current teams and NCAA eligibility. Professor Refael stated that for those expecting incoming teammates at the same level, the policy will be gradually implemented over the next three to four years. Only when most current students graduate will the full effect of the policy come into play. Regarding NCAA eligibility, a school of Caltech's size requires 10 teams. Even with the recent admissions change, it is expected that the requirement can still be met.

In response to questions seeking clarification behind the driving force of this policy change, Professor Refael em-

phasized that the aim is to have a fair and balanced admissions process. In the past, the process was fair in the sense that all applicants were considered based on academics. This was the policy that the faculty voted on and approved years ago, and by reducing the weight of athletics in admissions, the policy is being restored to what it was. Professor Tamuz added that, despite what people may think, the change was not initiated by comparing the GPA of athletes to other students. A key factor driving the change was the fact that the wider faculty and Faculty Board "had no idea [increased involvement of athletics in admissions] was happening."

Given that admissions policy is under the purview of the faculty, as per the bylaws, a question was raised about how they could have been unaware of the involvement of athletics. The increased involvement "sort of happened organically through the bureaucratic creep" and was not decided by the faculty, according to Professor Tamuz. As the impact of athletics in admissions increased, it took time for the faculty to notice. Additionally, during COVID, the previous Chair of the Faculty Board was occupied with overseeing efforts to set policies on campus in such a way that would not impede research and, as much as possible, education. As a result, some issues received less attention, including the core curriculum, Honor Code, and admissions.

When Professor Refael became Chair of the Faculty Board, he sought to better understand the admissions process, as it is one of the main responsibilities of the faculty. Upon reviewing admissions data, it became clear that Caltech's admissions were unbalanced. This revelation sparked discussions about admissions priorities, with the goal of realigning the process "to what the faculty believes it should be, which is an admission process that's based on academic merit and potential."

over others and thus voted to step down the visibility of athletic recruitment efforts over time.

This decision has hit our student-athletes especially hard. We heard that in no uncertain terms Monday night. Students voiced anger, pain, frustration, and uncertainty; they let us know how difficult it is to work hard in classes and on their teams only to feel undervalued in their contributions and doubted in their commitment to academics.

These concerns moved me to write from my dual perspectives as faculty and a member of Institute administration. One of the greatest privileges of my new role has been getting to know an ever-wider spectrum of the student body. The brilliance and uniqueness of this undergraduate community inspires me daily, and no one here reduces, nor should be reduced, to a single aspect of their identity. We are all balancing work and life, deadlines and demands on our time. We are all here, students and faculty alike, because of our commitment to knowledge and discovery. And we are all bound by the Caltech Code of Conduct, which holds that "Every member of the Caltech community treats one another with dignity and respect."

As we move forward with changes brought by the June resolution, I want to emphasize

two points. First is our commitment to remaining in SCIAC. Caltech Athletics has always been about more than winning games. Since the beginning of the program, it has embodied the perseverance, ingenuity, and community-spiritedness of the Caltech student body as a whole. Stepping down the visibility of recruitment in the admissions process will proceed in conjunction with annual, data-informed assessments of the impact on teams and the program as a whole, as we maintain Caltech's Division III status.

Second is the importance of student voices and perspectives to the conversation around athletics. Over and over again on Monday, I heard students express frustration at being talked about without being offered venues to represent themselves and their experience. That should not be the case going forward, and I invite all members of our student community to reach out with their ideas, concerns, and suggestions. There is no easy path into or through Caltech, and all of us of are here because we appreciate the challenge and rewards of tackling hard problems. The challenge that lies ahead will require our collective creativity and generosity to accomplish well, but if any group of individuals is capable of finding a positive and meaningful solution, I know it to be this one.

Caltech Swim & Dive Wins First Dual Meet of Year

Emily Yu
Sports

On Saturday, November 2, Caltech Swim & Dive defeated the Occidental College Panthers at De Mandel Aquatics Center.

The Caltech divers achieved victories and top three finishes. In women's 1-meter and 3-meter diving, Ava Balanon ('28, Fleming), Jana Woo (CS '26, Page), and Kassie Kristufek ('28, Fleming) finished top three in both events. Balanon won the 1-meter with a score of 265.13. Woo finished first in the 3-meter with a score of 277.73 and also earned SCIAC diver of the week.

Anthony Wang ('28, Avery) won in both 1-meter and 3-meter men's diving with scores of 272.93 and 273.45, respectively. Lucas Smith ('28, Page) finished third in the 1-meter dive with a score of 148.35.

Throughout the meet, the Caltech swimmers posted various winning times.

On the women's side, Allison Xin (CS '27, Page), Karen Zhou (CS '27, Lloyd), Beatrice Cai (Bio '27, Lloyd), and Elizabeth Ma ('28, Lloyd) finished first in the 200-yard medley relay with a time of 1:54.87. Xin also won the 100-yard backstroke with

1:02.79. Grace Tuhabonye ('28, Ricketts) came in first in the 1000-yard freestyle at 11:05.79 and the 200-yard butterfly at 2:15.97.

On the men's side, Aaron Dumas ('28, Page), Alvin Zhang ('28, Fleming), Marcel Liu (Ph '27), and Sam Small (BioE '25, Lloyd) won the 200-yard medley relay by 0.91 seconds at 1:34.08. Zhang also won the 100-yard backstroke with 52.61 and 100-yard freestyle with 47.52. Tommaso Colombo (Chem '27, Avery) finished first in the 100-yard breaststroke by 0.4 seconds with a time of 59.15.

Several more wins include Dumas in the 200-yard backstroke, Simon Hu (CNS '26, Page) in the 500-yard freestyle, Thomas Fenton ('28, Fleming) in the 1000-yard freestyle and 200-yard breaststroke, Sam Xie ('28, Avery) in the 100- and 200-yard butterfly, and Reid Nussbaum (MechE '27, Page) in the 200-yard individual medley.

Many swimmers on both the men's and women's teams also posted numerous top three finishes. The Beavers wrapped up the meet with wins in the women's and men's 200-yard freestyle relays. In all, the women's team won 161-129 and the men's team won 206-82.



Photo Credit: Gavin Hyland/gocaltech.com

An Interview with Tim Ryan

Lynn Feng
Humans of Caltech

Tim Ryan enrolled in Caltech in 1973. Initially a physics major – his advisor the famous Richard Feynman – Tim soon found himself swept up by the then-hot field of electrical engineering. “We were right at the beginning of that, where the first inexpensive microprocessors had become available,” Tim recalled. Around 1975, a year before Apple released the Apple I, Tim switched to applied math. Soon, he and his roommates were using one of those new microprocessors to build an invention of their own: an all-digital music synthesizer.

Tim teamed up with his roommates, Don Lieberman and Alan Danziger, to found Con Brio and produce the Advanced Digital Synthesizer (ADS). The ADS, a complex and expensive state-of-the-art device, saw some success. Notably, it was used for the sound effects of *Star Trek: The Motion Picture* (1979) and its sequel *Star Trek II: The Wrath of Khan* (1982). But Con Brio only ever sold a single unit for \$28,000. The experience impressed upon Tim an important lesson: however technically impressive a product, it’s profitable only if there’s a market for it.

Tim continued his entrepreneurial pursuits beyond Con Brio. After many efforts, he founded Midiman (later renamed M-Audio), which sold a variety of devices including keyboards, speakers, and audio interfaces. With M-Audio, Tim found unprecedented success. The company was eventually acquired for \$174 million (\$281 million in 2024). “As far as I’m concerned, M-Audio was the most successful company in the music industry when I sold it.”

A few years ago, Tim decided to return to Caltech to support undergraduate entrepreneurs. He established the Timothy D. Ryan Summer Entrepreneurship Program, a 10-week summer program which provides awardees with project fund-

ing, a stipend, and mentorship throughout the summer. The summer of 2024, Audiomatic – the dubbed translation startup Nika Chuzhoy, Brian Hu, and I co-founded – was awarded funding by the program. Tim’s early efforts with Con Brio sounded familiar to me this summer, as I worked with my two friends in our apartment, building an audio-generation tool in our era’s hot field of machine learning. We, and other aspiring undergrad entrepreneurs, have a lot to learn from his experiences.

Caltech’s honor code: how a culture of trust sparked innovation

“In 1973, [undergraduates] were given a master key that allowed us to get into every place in Caltech. Every office, every laboratory, everywhere we wanted to go we could get in. That was an attitude, as much as anything,” Tim recalled. “The steam tunnels were a big thing in our day, we could explore all of Caltech as subterranean creatures.”

It’s a vision of Caltech that is central to the school’s identity to many – and one that often feels threatened nowadays: by the rising academic honor code violations cited in the famous SAT/ACT reinstatement petition, by increasing administrative hostility towards student traditions (such as the controversial banning of Blacker’s potato cannon for rotation last year), and by tightening security around buildings – including recent installations of cameras around student residences with little advance notice to the affected students.

But it’s a vision worth fighting for, as Tim Ryan’s experience attests to. “Caltech was extraordinary in its open-door policy,” Tim reminisced. “I could go into [a cool lab] and befriend those wiser heads, and use the machine equipment... At the Caltech stores, we could buy anything we wanted to fabricate at a quarter of the cost of retail.” Tim characterized this culture as one of passively encouraging innovation, by

providing readily available resources for motivated students. He summarized Caltech’s attitude as: “If you’re motivated and you know what you’re doing, go do it, we’re not stopping you.”

Undergrads today are pushing to bring back the easy access to resources and equipment that Tim Ryan enjoyed in the 70s. Luke Alvidrez (ME ‘26, Blacker) and Ethan Labelson (EE ‘26, Blacker/Dabney/Ricketts) have spent the past two years cleaning up and reorganizing the Caltech Student Shop, which will soon begin providing access to wood and metalworking equipment for students’ personal projects. Ethan and Yao Huang (EE ‘26) are also planning to establish a makerspace focused on electrical engineering. Initiatives like these promise to keep Caltech innovation thriving.

Missed and missing opportunities

Despite the extraordinary advantages that came with Caltech, the school also had its downsides. One obvious challenge was that Caltech was geared towards aspiring scientists, with, as Tim said, “woefully little resources available to help undergraduates go in a business direction.” Reflecting on his choice to fund his Summer Entrepreneurship Program, he said: “After I had fun being out in the world, enjoying the benefits of the wealth I generated, I thought, ‘What could I positively do with what I made? What would be of great benefit? At Caltech what was missing was seed money.’”

The challenges faced by Caltech entrepreneurs, however, are not just financial. Caltech’s scientific focus sometimes fosters a mindset sub-optimal for smart business. “Caltech kids tend to run to their devices and solve technical problems,” Tim remarked. “They come up with brilliant solutions but at the end of the day can’t necessarily market them.” To prove his point, he described a previous team of his program’s awardees, who

eventually took his advice to drop their “over-engineered, over-technical idea” – involving blockchains, I was told – for a more practical approach to their business.

Tim wishes that he had learned the importance of understanding marketing and sales earlier. “No need to spend four years developing our \$28,000 machine,” he lamented. “We developed the greatest instrument the world had ever seen, but guess what? Nobody wanted it or could afford it because it was overkill.”

If he could have a do-over with Con Brio, with the business sense he learned later, he might’ve tried a radically different approach: strip the ADS down to its main board and sell it as a personal computer. “We had five 6502 microprocessors in the Con Brio. We had something far superior to the Apple II. We could have beaten the snot out of Apple, yet we were so focused on doing this immense synthesizer.”

Do you have what it takes to be an entrepreneur?

“Most people aren’t wired to take the risk – to sacrifice everything to succeed as an entrepreneur,” Tim warns. “They don’t have the ambition, the drive, or willingness to sacrifice.”

But he also boldly asserts: “If you’re smart, open-minded, and have your eyes open – in ten years, you’re going to be a multimillionaire, no matter what. You’ll find out what you need to do to succeed and do it.”

Indeed, it did take ten years between Tim’s first venture into entrepreneurship with Con Brio in 1978, and his launching of M-Audio in 1988. Each setback in that process gave him valuable knowledge. “I didn’t take a salary for almost eight years,” he said. “It was my fifth business that actually finally succeeded. Each business was more successful than the previous one.”

Tim said he’s invested in a number of companies in the past, though they’ve broadly

been unsuccessful. He’s seen companies fail because of the same pitfalls Con Brio fell into. “He just kept developing more modules,” Tim said, of an investee who started with a good idea, but just couldn’t look up from the workbench long enough to sell what he was making.

Students considering entrepreneurship may think it’s likely they, too, will fail. But Tim encourages them to try anyway.

“If you don’t try it, you don’t see what you are able to do. And even if you don’t succeed, you will learn valuable tools, other than just solving tech problems, that will serve you in good stead when you go further into business. Especially if you’re going up a career path where you’re not exclusively a scientist in the lab.”

The Timothy D. Ryan Summer Entrepreneurship Program

During the interview, Tim mentioned that he hoped Caltech could develop a stronger alumni network. “There are a myriad of people at Caltech that have accomplished great things,” he said. “I wish we had a way to pull those experts out to share their experience.” In this avenue, he’s clearly trying to lead by example, dedicating wealth and knowledge he’s earned from his successful business towards supporting undergrads going through the same startup process he did.

When asked what he’s looking for in future awardees, he told me:

“We naturally ask: does this sound like an interesting thing? Does it sound viable? Would it be a good thing to bring to market? Does it sound like they can succeed at it?”

He heavily emphasized the business element. (It’s safe to say applicants would be well-advised to go beyond their technical inclinations by really knowing their market.)

“How much thought have they given to whether it’s a viable business, and have they thought of any business plan for how to sell it?” Tim added, stressing that even in an applicant’s pitch, he tries to provoke the student into thinking a little more about how they’re going to make a profit.

“My goal is to empower Caltech kids to explore the entrepreneur path, not just making something interesting and cool, but succeeding with it as a business... At the very least they will learn a whole lot. At most, something extraordinary happens.”

Applications for the Timothy D. Ryan Summer Entrepreneurship Program open at the beginning of winter term. For more information, see innovation.caltech.edu/entrepreneurship/tim-ryan-summer-entrepreneurship-program. Students interested in entrepreneurship should also check out the other programs affiliated with the Caltech Innovation Center.

Top: Tim Ryan (center), Don Lieberman (left) and Alan Danziger (right), at work on the ADS 100. George Zweig Caltech Hearing Lab, 1978.

Bottom: A brochure for the ADS 200 from 1980.



Caltech alum & entrepreneur Tim Ryan. Photos courtesy of Tim Ryan.



QUESTION MARKS: The Question Mark feature allows the musician to view the contents of any Register on the ADS 200's memory screen. Lists of notes, strings, instructions and playback time can be viewed.

The ADS 200 offers numerous keyboard operation modes:

REAL TIME CONTROL: General real time controls are provided on the ADS 200's keyboard. A variety of real time controls are available. The ADS 200's keyboard can be used to control the ADS 200's memory screen. Lists of notes, strings, instructions and playback time can be viewed.

INTERNAL CONTROL: The ADS 200 is capable of generating traditional, internal, real time controls. These controls can be used to control the ADS 200's memory screen. Lists of notes, strings, instructions and playback time can be viewed.

APPROXIMATE: The ADS 200 features a variety of approximate controls. For example, the ADS 200's keyboard can be used to control the ADS 200's memory screen. Lists of notes, strings, instructions and playback time can be viewed.

KEYBOARD: Pressing the keyboard's right controls, the notes to be played on a particular portion of the ADS 200's keyboard. The keyboard's right controls can be used to control the ADS 200's memory screen. Lists of notes, strings, instructions and playback time can be viewed.

SOLO VOICE: The ADS 200's keyboard can be used to control the ADS 200's memory screen. Lists of notes, strings, instructions and playback time can be viewed.

ROLL MODE: With the ADS 200's Roll Mode feature, consecutive notes played on a particular portion of the keyboard will each sound with a different voice.

Expandability, Interfacing and Future Developments...

ADDITIONAL FUNCTIONS: The CON BRIO AT 200 will share its state-of-the-art with its series of additional options. All new hardware and software is developed for the ADS 200. It can be added to any existing instrument. Use of these additional capabilities will be described in detail in the CON BRIO AT 200's manual.

INDICATORS: The ADS 200 features a group of 16 indicators. Each indicator can be used to control the ADS 200's memory screen. Lists of notes, strings, instructions and playback time can be viewed.

ADDITIONAL MEMORY DEVICES: The ADS 200 is equipped with an array of control on tape inputs and outputs. Current programming is available on tape. This provides the ADS 200 with the ability to store a great deal of information.

EXPANDABILITY: The ADS 200's expansion is truly unlimited. Each unit can be added to the ADS 200 to increase the number of digital oscillators from 44 up to 256. Also, the new hardware is developed, making the ADS 200's use of a host to add to new digital units.

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Top: Tim Ryan (center), Don Lieberman (left) and Alan Danziger (right), at work on the ADS 100. George Zweig Caltech Hearing Lab, 1978.

Bottom: A brochure for the ADS 200 from 1980.

The science of thought: philosophical insights into scientific practice

The Intersection of Viktor Frankl's Philosophy and Caltech's Honor Code: A Shared Journey Toward Meaning and Integrity

Camilla Fezzi
Column

One such famous Austrian psychiatrist and philosopher, Viktor Frankl, deeply affected humanistic psychology with his logotherapy and famous book entitled "Man's Search for Meaning." Founded upon a search for purpose and meaning in literally the worst of times, Frankl's philosophy naturally flows into ideas of personal integrity and responsibility—values that extensively respiration within the academic goals of Caltech. At the core of Viktor Frankl's philosophy is logotherapy, a form of existential psychotherapy he developed based on the principle that the primary drive of human beings is not pleasure (as in Freudian psychoanalysis) or

power (as in Adlerian psychology), but rather the pursuit of meaning. Logotherapy asserts that, even in the face of suffering and adversity, individuals can find meaning in their lives through personal responsibility, purposeful work, and deep connections with others. Frankl believed that life has meaning under all circumstances, even the most miserable, and that our task is to discover that meaning in every moment. In this way, logotherapy empowers individuals to confront life's challenges by focusing on what they can control—their attitude and response to the world around them.

The Caltech Honor Code is a deceptively simple but powerful dictum: "No member of the Caltech community shall take unfair advantage of any other member of the Caltech commu-

nity." More than a regulation, this code embodies the deep promise of integrity, mutual trust, and personal responsibility assumed by all students, faculty, and staff at the Institute.

Similarly, Frankl made it equally clear that even under the most trying conditions, human beings are free to decide their attitude and find deep meaning in life. This appeal for personal responsibility is presented as a keynote in Caltech's Honor Code, too: students are supposed to act with ethical conduct and to honor that trust which each has been given by the community, much as Frankl appealed to every human being to realize the freedom, they must respond consciously to whatever life presents before them.

Another key point in Frankl's

philosophy has to do with cooperation: mutual reinforcement in the pursuit of meaning. For him, humans cannot fulfill themselves in isolation from others; strength comes from community and meaningful relations. This fits well within the culture at Caltech. In fact, many academic problems are set up to be addressed in groups, where it's expected that students will collaborate on solutions—just as Frankl believed that discussion and sharing experiences can add meaning to one's world.

All said, Frankl believed that the search for meaning is the primary motivating force of human beings. This idea comes together with the humanistic and educational philosophy at Caltech: it not only tries to provide outstanding knowledge for students in scientific disci-

plines, but also encourages reflection on the meaning of this whole journey and life in general. In that sense, the Honor Code is more than conduct but an invitation to responsibility in living for oneself and with others toward the goal of making a positive contribution in service to society.

Much as Frankl did, even in the most drastic of conditions, Caltech students must be reminded of their direction both academically and professionally, motivated not by success per se but rather by a calling toward meaningful contribution to the world. This process of finding purpose is at the very core of the Caltech educational experience, expressed through the concrete, tangible traditions of trust and integrity that in a living way characterize this community.

SFC/SLEC Chair Training

continued from page 1

This approach was intended to support risk-taking and innovation by normalizing learning through occasional failure. The presentation also underscored inclusive behaviors, highlighting the value of diverse perspectives and the importance of fostering mutual respect, trust, and a sense of belonging within teams. Both reactive and proactive strategies were discussed for managing relationship, task, and process conflicts constructively. Chairs were encouraged to reflect on their own conflict styles, moving beyond binary thinking to find common ground. Additionally, guidelines for effective feedback were provided, emphasizing timely, specific, and unbiased feedback with structured frameworks to support constructive interactions. Together, these strategies equip committee chairs to build resilient, inclusive teams capable of productive dialogue and collaboration.

Next, Hillary Tribbs, Director of Inclusion and Belonging, provided an overview of the planning process each committee chair will follow. Emphasis was placed on the need for each chair to narrow their scope into actionable, deliverable items, with the central question, "What does success look like?" This question was explored in greater depth during the workshop portion of the evening.

Following this, Joe Ramirez, Institutional Research and Assessment Associate, covered essential frameworks for designing effective surveys. An overview of survey research explained how it captures the attitudes, opinions, behaviors, and characteristics of a target population using quantitative

methods. Two main types of survey designs were highlighted: cross-sectional, which collects data at a single point in time, and longitudinal, which tracks changes over time. The "Golden Circle" concept was introduced to ensure clarity and purpose in survey design. Key survey decisions—such as confidentiality, anonymization, distribution methods, and handling partial responses—were discussed, along with considerations for question types to measure attitudes, behaviors, or background. The importance of question clarity and avoiding issues like ambiguity, bias, and response mismatches was highlighted, with additional guidance on avoiding overlapping answers, unbalanced choices, and biased ordering. The Net Promoter Score (NPS) was introduced as a tool for measuring satisfaction, with guidelines on its implementation and interpretation. Finally, expert review was recommended to refine question wording, flow, and usability.

Finally, with the advice of Jasmine Bryant, Director of the Center for Teaching, Learning, and Outreach (CTLO), Jeb Brysacz and Jonathan Booker concluded the training by offering advice on engaging faculty productively.

After a break, the workshop started as SFC and SLEC committee chairs divided into two groups to review their responsibilities in the planning process. Each committee has been assigned a scope with broad priorities and objectives, designed to allow chairs to focus on the most pressing issues while covering as much ground as possible. To narrow this focus, each chair will define intangible deliverables and identify the objectives tied to each. For every intangible deliverable, chairs will outline what success looks like by specifying



items for the final committee report. These intangible deliverables and their outcomes will form each committee's charge. Using this charge, chairs will collaborate with conference organizers to select committee members whose backgrounds and experiences align with the charge's focus. For all deliverables in each charge, chairs will draft plans that clarify their intent, show how they will meet success criteria, and demonstrate feasibility. A timeline will then be developed to meet success criteria for all items in the charge.

In the final segment of the workshop, chairs were given time to begin their planning, ask questions, or leave to attend to other obligations as needed. They are now completing

and revising their committee charges, which will be posted, along with committee compositions, on the SLEC website by early next week.

All committees are expected to hold their initial meeting before the end of the fall term. These meetings will begin by setting expectations and boundaries for discussions leading up to the conference. Following introductions, chairs will review the committee charges, outline the plan to accomplish each item, and answer questions from committee members. Committees will also brainstorm questions for an upcoming survey to be distributed to all undergraduates, administrative staff, and faculty. More information about the survey will be shared

later. Throughout the winter term, committees will meet according to schedules tailored to each group's needs. By the end of spring break, committee chairs will submit their final committee reports.

The ASCIT BoD extends its gratitude to Lindsey, Hillary, Joe, and Jasmine for their insightful presentations, as well as to Tom Mannion and Claire Ralph for their help in preparing food for the event. Special thanks also go to Paula Gaetos from the Caltech Library for facilitating access to library resources. Their support has been invaluable in preparing committee chairs for a successful conference season.

e-plegona:

Red Door Cafe's Interactive Art Installation Brings Yamaha's Vision of Kando to Caltech

Gregory Miller
Culture

The Red Door Cafe at Caltech was transformed into a hub of curiosity and engagement with Yamaha's e-plegona installation, a groundbreaking piece of interactive art that merges technology, neuroscience, and design. Created by Kip Washio, e-plegona exemplifies Yamaha's Kando philosophy—a Japanese concept that captures the simultaneous feelings of deep satisfaction and intense excitement. Through this installation, Yamaha invites participants to experience Kando through nonverbal, collaborative interactions.

Dr. Takashi (Taka) Suegami, Ph.D. in Psychology, Human Research Strategy Lead of the Technology Strategy Group within Yamaha Motor's Technical Research & Development Center, emphasizes the importance of blending excitement with empathy in Yamaha's projects. When asked about the core of e-plegona, Suegami explained, "Yamaha Motor sees Kando as a blend of excitement, like riding a motorcycle, and empathy, which is about bodily and emotional understanding. e-plegona combines body movement and partner coordination, creating a physical, dance-like interaction that brings excitement and empathy."

When asked about Kando, Professor Shinsuke Shimojo, the Gertrude Baltimore Professor of Experimental Psychology at Caltech and a research collaborator on e-plegona, explained, "Kando is being emotionally moved, like after watching an impactful movie. It's part of both companies' mission to create products that evoke Kando, aiming for experiences that aren't just functional but deeply interactive and emotionally engaging." He elaborated, "Music is a big part of this—whether it's church music, disco, or music in the car. This musical connection has even drawn some criticism from the motor division for being too music-centered. But for motorbike enthusiasts, for example, engine sound is as integral as the ride itself."

Professor Shimojo highlighted the team's unique background: "Takashi used to be a postdoc in my lab. He's an experimental psychologist sent by Yamaha Motor. My lab is a psychology and cognitive neuroscience lab focused on interactions among the human mind, body, and brain."

Professor Shimojo's lab focuses on cognitive neuroscience, particularly the states of consciousness and flow—"the zone" that athletes and musicians enter during peak performance. "Part of our interest is consciousness," Shimojo elaborates. "Another focus—popular in our field—is the 'social brain,' which looks at how we communicate and synchronize, both explicitly and implicitly,

even at a subconscious level." This led to a unique examination of "flow," or a state where game players are so absorbed in an activity that they lose track of time. Shimojo explained, "Flow, or the zone, as athletes say... is a state where you forget time and become fully immersed, finding immense pleasure in the moment." This phenomenon underpins much of the e-plegona experience, as participants must rely on nonverbal cues and timing to achieve harmony with each other's rhythms.

Shimojo distinguishes between solo and team flow, stating, "We made a distinction between solo flow and team flow. As a musician, you may experience solo flow when playing alone, and team flow in a jam session where each musician synchronizes with the others." He added to support this concept scientifically, "We've shown that both the body and the brain synchronize with another person's. Bodies in sync, and specific brain waves sync up, reflecting this 'team flow.' So, it's not just a subjective feeling; objectively, we see neural indicators of flow." Additionally, he noted, "Supported by the Japanese government, we're exploring how flow and team experiences contribute to happiness and positive attitudes ('Maemuki' in Japanese), which are qualities both Yamaha Motor and Yamaha Corporation aim to instill in their products."

This vision aligns with Yamaha's mission to create emotionally engaging experiences that transcend the purely functional. Yamaha's corporate philosophy—often referred to as "Kando Creating Company"—focuses on delivering products and experiences that resonate deeply with people, fostering meaningful connections.

Kazuya (Kip) Washio, Design and Research and Development Manager at Yamaha Corporation of America, is the creator of e-plegona. Kip added, "e-plegona is designed for both musicians and non-musicians to experience the joy of group play without needing musical skill. It's about intuitive, collaborative play that even children can enjoy." Shimojo echoed this sentiment, noting, "This experience is often limited to musicians, but e-plegona brings it to everyone, embodying Kando." He emphasized that "observing this variance [between rhythm-based and button-press activities] is key to understanding engagement."

Tyler Gatewood (CS '27) shared his experience after a round on e-plegona. "It felt good. The vibration feedback was delightful. Hitting the right notes, sending them off—it was more about rhythm and how consistent you could send and receive the notes." Tyler also mentioned that e-plegona requires teamwork and nonverbal communication, which added a unique layer to the experience. "It's more or less



Tyler, a Caltech computer science sophomore, plays a round of e-plegona with Teruhiro (Teru) Hayashi, design researcher at Yamaha Motor, as Takashi (Taka) Suegami, human research strategy lead at Yamaha Motor looks on.
Photo Credit: Gregory Miller

stimulant communication with your partner," he said, appreciating how the installation facilitated a shared rhythm and flow.

Ama Obeng (ME '26, Lloyd) also shared her thoughts after playing e-plegona. "It was just an enjoyable, exciting feeling. It reminded me of Garage Band and similar games," she said. "You're trying to make a beat or some sort of rhythm by sending over beats and catching the beats your partner sends, all done nonverbally. It was a lot of fun and gave me a sense of cognitive stimulation." Ama also noted the importance of working together to maintain rhythm, saying, "It definitely energized me as well as stimulated my cognition... just feeling very energized and pretty excited."

Additionally, two female Ph.D. students who played a round felt relaxed and energized, noting how e-plegona's nonverbal interaction helped them concentrate on their partner. This created a sense of shared intent and mutual understanding, enhancing their experience of focus and connection.

Professor Shimojo further explains that e-plegona is a scientific exploration as much as an artistic one. "College students often feel guilty about gaming, but these personal, physical experiences are fundamental, potentially feeding into neuroscience, psychology, and

anthropology," he notes. By engaging in embodied interactions through installations like e-plegona, students experience the intersections of intuition, physicality, and emotional engagement firsthand. "Understanding yourself is the start," Shimojo adds, underscoring the relevance of self-awareness in both academic and personal growth.

Moreover, Shimojo shared that his lab is seeking an undergraduate research assistant to work on projects connected to e-plegona and similar research. This opportunity could allow a student to delve deeper into interdisciplinary studies at the nexus of psychology, neuroscience, and human interaction. Professor Shimojo can be contacted at sshimojo@caltech.edu.

The e-plegona has already earned international acclaim, winning a prestigious Red Dot Design Award in 2024 in the Design Concept category. This award underscores Yamaha's commitment to interdisciplinary innovation, combining cognitive science and artistic design to create experiences that evoke Kando. The installation has been featured at leading technology festivals, including SXSW in Austin and Tech Open Air in Berlin, where it attracted widespread attention for its approach to human interaction and emotional connection.

Reflecting on the impact

of early influences, Shimojo shared, "I learned from my best mentor, who chose me as his first postdoc based on my enthusiasm, not my CV or papers. He believed childhood hobbies are better predictors of scientific success than grades or publications." Encouraging students to draw on their interests, Shimojo hopes that installations like e-plegona will inspire the next generation of researchers to explore the intersections of science, art, and technology. "If people experience Kando together, maybe we can understand each other better," he noted, emphasizing Yamaha's commitment to creating understanding through shared experiences.

Through e-plegona, Yamaha, and Caltech, walk-in participants explored the power of nonverbal communication, shared flow states, and emotional resonance. As Shimojo eloquently states, "Kando isn't just a scientific term; it's a daily word in Japan about being moved emotionally. Our goal is to scientifically define it and find ways to measure, enhance, or recreate it. Yamaha wants to understand this scientifically and incorporate it into their products to enrich user experiences." This installation at Caltech's Red Door Cafe was a testament to the profound impact of shared experiences and emotional connection in bridging diverse fields and uniting people across cultures.

Caltech in 2024: A Year of Milestones, Achievements, and New Frontiers

Camilla Fezzi
Science & Tech

2024 has been one of the most important years for Caltech, which continues to build on its legacy of scientific discovery, innovation, and academic excellence. Although we are coming to the end of this year, we beavers are sure to make new discoveries as we step into 2025. In 1920 Throop university changed its name and marked a new era as the California Institute of Technology name. 2024 brings new milestones, anniversaries, and achievements that further highlight the Institute's incredible contributions to science and technology. From groundbreaking research to prestigious awards, including new Nobel Prizes and institutional anniversaries, Caltech remains at the forefront of the global scientific community. Let's take a closer look at some of the key events and achievements that define Caltech in 2024.

**Editor's
Note: We
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perspective!**

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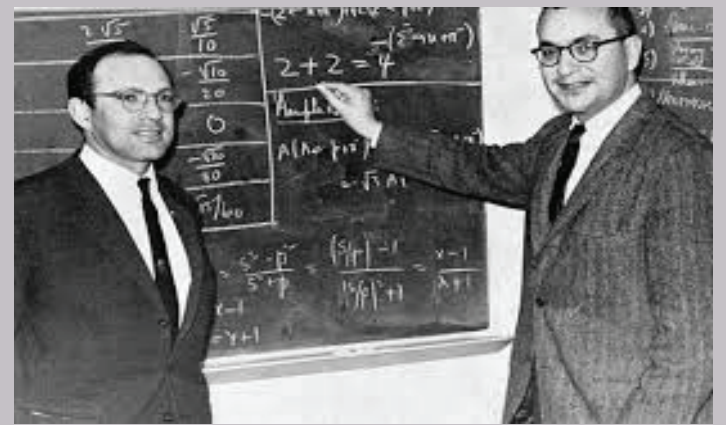
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Submissions are due at 12 p.m. on the Saturday before each biweekly Tuesday publication.

Milestones in Particle Physics

It has been 60 years since the quark model was introduced by Caltech physicist Murray Gell-Mann in 1964. The theory of Gell-Mann — that protons and neutrons are made up of even smaller particles, a type known as quarks — revolutionized particle physics. Although there are no real celebration events in the program (they are mainly family activities or usual meetings), a lot of them were done on the 50th anniversary. You can read the article that was published on Caltech website 10 years ago: <https://www.caltech.edu/about/news/50-years-quarks-43351>.

Thanks to their theory, quarks have been shown to be physical particles with finite masses. The up quark has been found to have about half the mass of the down, while the strange quark is some 50 times more massive — a sure sign that it represented a second generation of quarks, just as muons had turned out to be second-generation electrons. In 1974 (so 50 years ago!) the other second-generation quark turned up — the “charm” quark — followed three years later by the third-generation “bottom” quark. It then took nearly two decades to find its partner, the “top” quark — which, as far as we know, completes the quark family tree.



Gell-Mann was named the Robert Andrews Millikan Professor of Theoretical Physics in 1967 — a fitting irony that the man who showed that fractional electric charges are necessary holds the chair named for the man who showed that electric charge is indivisible.

Keck Observatory: 31 Years of Astronomical Discovery

In 2024, we celebrate 31 years since the Keck Observatory first opened its telescopes to the skies in 1993. Nestled high on Mauna Kea in Hawaii, it has helped in some major astronomical discoveries. Using Keck Observatory's second generation Near-Infrared Camera (NIRC2) paired with the Keck II telescope adaptive optics system, they found the gas giant has a slightly higher temperature and is less cloudy than the HR 8799 planets — the very first directly imaged exoplanetary system discovered in 2008 by two Mauna Kea Observatories, the Keck Observatory and Gemini Observatory. This world's atmosphere also hints at water and carbon monoxide. Having been a place that links science, technology, and art, the Exoplanet Imaginarium has been assigned a dream one could entertain: to picture ourselves on board a flying spacecraft, passing by a strange world, or standing on the surface of an alien moon and looking at a giant planet rising above the horizon.

The collaboration between Keck Observatory and award-winning exoplanet artist Adam Maramenko targeted a virtual “trip” to 12 different exoplanets throughout 2018. Every month, Keck and Maramenko created an artistic rendering of a scene of an exoplanet based on available scientific data combined with calculations from Keck Observatory Astronomer Carlos Alvarez. Beginning this special series with the very first exoplanet that Keck Observatory discovered, Gliese 876b is a gas giant that's two times more massive than Jupiter, seen here from a hypothetical moon. While

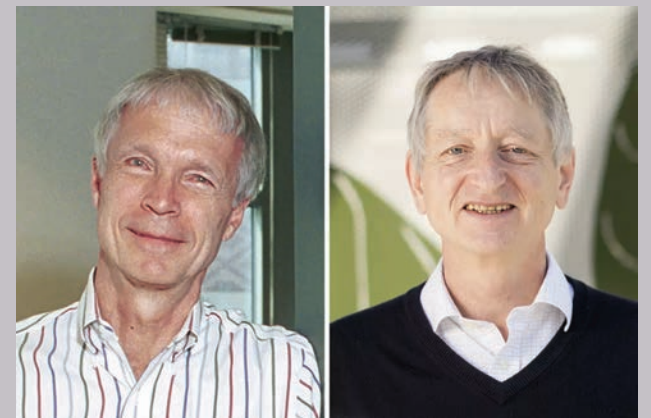


there was no scientific evidence of moons at this time, this planet most likely has moons based on the evidence from the gas giants we see in our own solar system. Gliese 876b is far from lonely; it's one of four known planets orbiting one of the nearest stars to the Sun - a red dwarf a mere 15 light years away. This extrasolar system is really compact, with all four planets squeezed into a space much smaller than Mercury's orbit around the Sun. As such, in the distance, we see another gas giant planet Gliese 876c in a waning crescent.

Nobel Prize in Physics 2024

Among the most exciting announcements this year, 2024 is marked by the granting of the Nobel Prize in Physics to former Caltech scientist John Hopfield and Geoffrey Hinton for their groundbreaking work related to artificial intelligence. Their breakthrough findings, such as neural networks and machine learning, have gone a long way toward developing AI technologies with influences ranging from physics to materials science. The prize highlights his deep contributions but also underscores Caltech's enduring legacy in fostering interdisciplinary innovation. The main wonder right now is: could AI be considered a Nobel prize in physics? What is the boundary between AI and actual human development and rational thoughts? Hopfield's transition from physics at Princeton and Bell Labs to Caltech's departments of chemistry and biology in 1980 marked an important moment in his career. At Caltech, Hopfield found fertile ground as he merged his physics with neurobiology, catalyzing the development of artificial neural networks. This innovative framework laid the bedrock for today's sophisticated AI systems, such as ChatGPT, showing the deep reach of early work.

His model was inspired by nuances from the human brain's architecture, where it replicated neuronal connections in which varying strengths could model learning or memory processes. Borrowing ideas developed within the physics of spin glass, Hopfield introduced a very new perspective of thinking of brainlike memory storage; in so doing, Hopfield brought together physics and cognitive science in a fashion that few could have possibly envisioned. More importantly, his interdisciplinary spirit best exemplifies Caltech's ethos of crossing traditional boundaries. His development of the course “The Physics of Computation,” with Richard Feynman and Carver Mead, is an excellent representation of this spirit; this predated the CNS program at Caltech. As Hopfield himself said, “the excitement of being at an interface between scientific fields is a really gen-



eral point” and his colleagues concurred. Caltech's Bren Professor of Chemistry, Emeritus, Peter Dervan, recalls, “there was a feel to Hopfield's tenure here at Caltech as having encouraged an atmosphere of original thinking.” This environment afforded Hopfield the freedom to expand the limits of possibility in several scientific landscapes into lands without bounds.

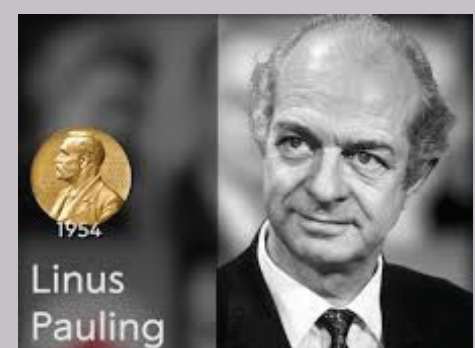
Beyond the accolades, which include prestigious awards like the Boltzmann Medal and the Albert Einstein Award, Hopfield's contributions remind us of the transformative power of curiosity-led science. His work exemplifies the synthesis of diverse scientific domains and raises important questions about the ethical coexistence of humanity with advanced AI technologies.

Linus Pauling: A Legacy of Two Nobels

As we celebrate the 70th anniversary of Linus Pauling's Nobel Prize in Chemistry, it's a fitting time to reflect on how his incredible work and devotion to peace continue to foster inspiration and innovation at Caltech. Pauling remains a towering figure as the only person to have been granted two unshared Nobel Prizes—one for Chemistry in 1954 and one for Peace in 1962—as well as having been an exemplary role model of interdisciplinary influence and social responsibility.

The Nobel Prize in Chemistry, awarded to Pauling, showed a deep insight into the nature of the chemical bond and radically changed the cognitions about molecular structure. In fact, his works gave laid the foundation for many scientific achievements — much of modern chemistry and molecular biology rests just on his works. Caltech's researchers continue to push forward the bounds of science in search of new knowledge, materials, and innovative technologies that will advance medicine, following in his path to this day.

Beyond his scientific contributions, Pauling's strong support of peace resonates with Caltech's commitment to ethical responsibility. His Nobel Peace Prize was in recognition of his work regarding an attempt to stop nuclear weapons testing, emphasizing the critical position of the scien-



tist vis-à-vis issues in our society. Pauling personified the dictum that a scientist should be responsible for using their knowledge to improve the human condition, and his philosophy instills in Caltech students and faculty a sense of commitment to the world's problems, which range from climate change to public health.

Caltech's Role in the Fight Against Climate Change

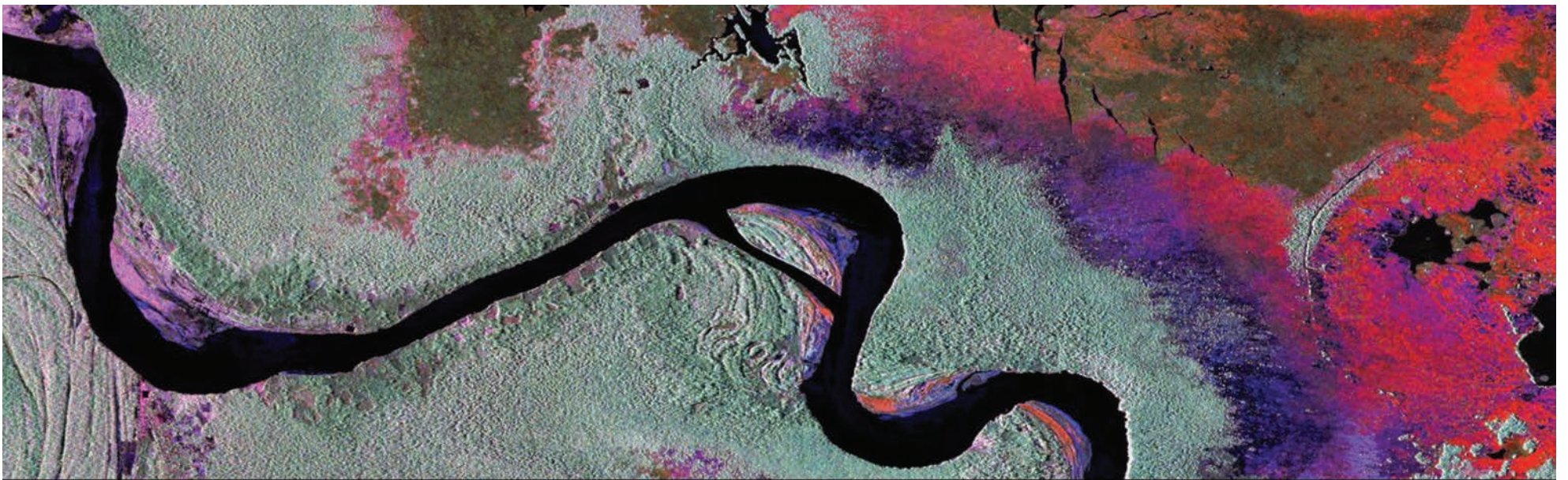
One of the main topics nowadays is climate change, and Caltech's response lies in the formation of the Resnick Sustainability Center (RSC) (<https://magazine.caltech.edu/post/caltechs-green-gateway-the-resnick-sustainability-center>). The RSC is continuing proof of Caltech's commitment to pioneering research in tandem with sustainable innovation. This facility serves as a beacon for the most advanced environmental science and as a collaborative hub aimed at solving some of the most pressing ecological challenges of our times. From the moment one approaches the Resnick Sustainability Center, the green architecture of the building is striking. It was designed with sustainability in mind and includes state-of-the-art energy-efficient technologies with eco-friendly materials inside, showing just how committed Caltech is to the goal of cutting its carbon footprint. The facility supports scientific missions while serving as a physical inspiration for what sustainable design can be.

"It's facilities like these, with brilliant staff who keep them running and who collaborate closely with faculty and students and postdocs, that really makes breakthrough research at Caltech much more possible than it would otherwise be," Jonas Peters Bren Professor of Chemistry and Director of the Resnick Sustainability Institute at the California Institute of Technology, said in a press release on October 10.

Interdisciplinary collaboration, however, lies at the core of the center's mission. Lacing together the capabilities of experts in chemistry, engineering, biology, and earth sciences, the center works to construct solutions to global sustainability challenges. Various labs and collaborative facilities housed in the building create dynamic interactions among researchers for breakthrough discoveries in renewable energy, climate science, water conservation, and more.



Apart from research, the RSC also serves as a key educational resource. It offers a range of programs and workshops involving students, faculty members, and the greater community in sustainability practices that promote environmental stewardship. Through interactive exhibits and events to which the community is welcomed, it exposes the public to science-based solutions for environmental issues and inspires a new generation of eco-sensitive leaders. Its outputs of research are supposed to influence policy and industry practice across the globe, promoting sustainable development at the international level.

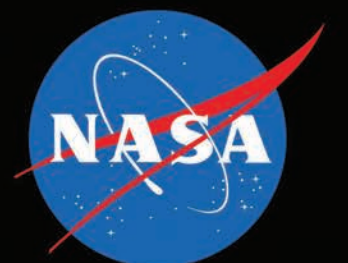


Discover **JPL**

Hosted by the Student-Faculty Programs (SFP) Office and the JPL Education Office, this series seeks to introduce Caltech undergraduates to the exciting and innovative research being done at NASA's Jet Propulsion Laboratory.

The following sessions for the 2024 series will be held from 12 PM to 1 PM in 153 Noyes Lecture Hall.

- Kickoff Event** | November 11th
- Session 1** | November 18th
- Session 2** | November 25th
- Session 3** | December 2nd



Caltech Y Hosts Community Service & Advocacy Fair

Caltech Y Student Life

The Caltech Y Community Service & Advocacy (CSA) Fair on Friday, November 8, 2024, drew an impressive turnout on San Pasqual Walk, where numerous community organizations from the Pasadena and Greater Los Angeles areas connected with enthusiastic Caltech students. Representatives from local non-profit organizations engaged with students who demonstrated a strong interest in volunteer and outreach opportunities.

Participating organizations included:

1. Pasadena City College Veterans Resource Center
2. Friends In Deed
3. Boys and Girls Club of Pasadena
4. Amnesty International Group 22
5. Union Station Homeless Services
6. Foster Care Project, Caltech CTLO
7. PEACE OVER VIOLENCE
8. Foothill Family

9. San Gabriel Valley Habitat for Humanity
10. Pasadena Public Library
11. Pasadena LEARNs Expanded Learning Opportunities Programs
12. North East Trees, Hillside
13. Reading Partners Los Angeles
14. NCNW - Young Legends
15. Planned Parenthood Pasadena and San Gabriel Valley

Organization Highlights:

Planned Parenthood Pasadena and San Gabriel Valley: This organization garnered significant attention from students. Planned Parenthood representatives discussed their mission to provide comprehensive reproductive health care and sexual health information. Students showed particular interest in volunteer opportunities and advocacy work related to reproductive rights and health education.

Union Station Homeless Services: Union Station Homeless Services drew a crowd of socially conscious students. The organization's focus on ending homelessness

in the San Gabriel Valley resonated with many attendees. Students were eager to learn about volunteer positions in meal services, housing assistance programs, and community outreach initiatives.

Boys and Girls Club of Pasadena: The Boys and Girls Club booth was a hub of activity, with students expressing enthusiasm for mentoring and tutoring opportunities. The organization's commitment to empowering young people, especially those from disadvantaged circumstances, had many Caltech students looking to make a direct impact on local youth.

Pasadena Public Library: The Pasadena Public Library's presence at the fair highlighted the importance of literacy and community education. Students signed up for volunteer positions in reading programs, digital literacy workshops, and community events, seeing these as ways to share their knowledge and passion for learning.

San Gabriel Valley Habitat for Humanity: Habitat for Humanity's booth was consistently busy, with students

drawn to the tangible nature of their volunteer work. The opportunity to participate in home-building projects and contribute to affordable housing solutions in the San Gabriel Valley appealed to many attendees, especially those with engineering backgrounds.

This event encouraged students to explore a wider range of organizations than they might have otherwise, resulting in unexpected connections and interests. The atmosphere was charged with enthusiasm and a genuine desire to make a difference throughout the event. Students eagerly signed up for volunteer opportunities, from direct service roles to advocacy and fundraising opportunities. The diverse representation of organizations ensured that options appealed to various interests and skills within the Caltech community. The success of the CSA Fair underscored the Caltech community's commitment to social responsibility and community engagement. This event brought together local service and advocacy organizations with passionate students for meaningful partnerships and impactful community service initiatives in the coming year.

For more information, please contact Caltech Y at caltechy.org.

Caltech Y: The Caltech Y has played a vital role in enriching student life at Caltech for over a century through its five core pillars: Leadership, Service, Adventure, Civic Engagement, and Perspective. Through these programs, students gain invaluable experiences managing nonprofit operations, organizing community service projects, participating in outdoor adventures, and engaging in cultural exchanges that broaden their worldview beyond the laboratory and classroom. The organization continues to empower Caltech students to become well-rounded leaders and engaged global citizens, complementing their rigorous academic pursuits with meaningful opportunities for personal growth and community impact. From tutoring local students through the Rise Program to organizing Alternative Spring Break service trips, the Caltech Y remains committed to fostering student-led initiatives that make a difference both on campus and in the broader community.



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THE CALIFORNIA TECH
LLM-FREE SINCE 2023!

Engineering *TESLA*, a Futurist Radio-on- Stage

Damian Wilson
Culture

"When wireless is perfectly applied the whole earth will be converted into a huge brain, which in fact it is, all things being particles of a real and rhythmic whole. We shall be able to communicate . . . as though we were face to face, despite intervening distances of thousands of miles, and the instruments through which we shall be able to do all of this will fit in our vest pockets."

This writing sample dates back to 1927, the year television saw its very first broadcast. Learning that Nikola Tesla foresaw not only the internet, but even the iPhone, left me positively floored. Even as a physics major and eager student of the history of science, I previously knew little of the man himself, let alone the extent of his grit and hardship. Where better to have witnessed the Tesla story, portrayed in all its humanity, than at last month's *TESLA: A Radio Play for the Stage*.

Written by Dan Duling, directed by Michael Arabian, and performed from Oct. 4 through Oct. 6 at Ramo Auditorium, *TESLA* was one piece among several in Caltech's *Opening Doors* series. This multidisciplinary series, a blend of dance, music, and theater events, was held in turn as part of the ongoing *PST ART: Art & Science Collide* initiative led by the Getty to promote the intersection of arts and sciences.

A vivid exploration of Tesla, his genius, and his struggles, the play takes a panoramic view of its mystifying title subject. Woven into the narrative are Tesla's early career at Westinghouse Electric Corporation, his spats with Edison amidst the war of the currents at the turn of the 20th century, and the man's tragic final years spent in poverty and anonymity with only his beloved pigeons for company.

The concept for *TESLA* had long percolated in the mind of writer Dan Duling, as he has been spellbound by the inventor for decades. "I was encouraged to look at Tesla material all the way back in 1990. Quickly I became intrigued with his history, all sorts of tantalizing things like: *How could someone as famous as Thomas Edison in 1900 virtually end up unknown?*" In unraveling such questions, Duling's writing process entailed the endless exploration of Tesla's own writings.

Paying particular attention to how the man articulated himself proved crucial to the integrity of the play's portrait of him. Lest, as Duling put it, *TESLA* in its representation of the man "violat[e] the fidelity to his life and his mind."

"And the more I got into it," Duling added, "the more I began to become fascinated by the politics of it, the economics of it, the capitalist challenges of it, and also just the fact that he was so clearly a brilliant mind with so much to offer the world." There was no limit to the fascination the figure inspired in Duling, especially as his research made the scale of Tesla's clairvoyance all the clearer. "He was a futurist in the purest sense," in the playwright's words.

The war of the currents, having squared futurist against futurist, was likely Duling's favorite part of the history to adapt. "It was wonderful to have that battle between Edison and Tesla kind of as the centerpiece of the play. Tesla was always seeing the greater possibility: the larger picture of what might be possible." In the process, Duling's view of Edison—who received much more, and largely flattering cultural coverage than his opponent—also changed in his mind, namely for the worse.

"Two things really informed my attitude about Edison," Duling explained. "One was seeing the view of him actually arranging the execution of an elephant, which is as horrific a moment as I can imagine. And, historically, becoming aware of Edison's desire to have absolute monopoly [in both filmmaking and electricity]. . . I'm always prone to being on the side of the underdog, but in the case of Edison and Tesla, it became much more personal." Indeed, the two in their approaches to capitalism were chasmically different: one, a ruthless monopolist; the other, an awkward researcher who nearly never left his lab. "If you just looked at it from Tesla's point of view, business was just an unfortunate necessity. . . His confrontation with American capitalism was his greatest Achilles heel."

And it was this lack of ruthlessness that laid the foundation for his heartbreaking later years. Duling made clear, however, how much his script steered away from emphasizing that period. "This wasn't a play about that last chapter in his life. All you need to know is that



The cast of *TESLA*, from left to right: Dan Lauria, Gregory Harrison, Vanessa Stewart, French Stewart (standing), Charles Shaughnessy, and Hal Linden, with Tony Palermo on sound effects. Photo Credit: Damian Wilson

his ability to do what he set out to do had been effectively taken away from him. All he's left with are compulsions, and obsessions, and greater attempts to make more outlandish statements in hopes of someone listening and funding something. Anything that could keep him afloat."

With a finished stageplay, *TESLA* was first performed in 2013 for a reading in a co-production with Caltech and the Pasadena Playhouse. "It was only for one reading, and we completely sold out that theater," shared Arabian. "We were really excited that there was so much interest in Tesla at that time. So few people even owned Tesla cars." The play was then greenlit for a one-weekend showcase at the Laguna Playhouse in 2017, featuring a team of professional actors in contrast to the original show's amateur cast. "And then Michael Alexander [Caltech's Campus Arts and Culture Liaison] told us to do it for the PST festival. It was amazing that the actors who did it seven years ago at the Laguna Playhouse were all available to do this production."

Only French Stewart, who had the honor of portraying Tesla, was present for that first show. His prior project *Stoneface: The Rise and Fall and Rise of Buster Keaton*, a play about the titular comedy legend, practically molded him for it. "It's a similar story. He's this genius and everybody loves him, but he's not a good businessman," Stewart said, likening Charlie Chaplin to J. P. Morgan. "It's a very human story. And there must be something in the zeitgeist because it's the *exact same story*."

Asked about that something in the zeitgeist, Stewart spoke to the national identity imbued in the sort of narrative Keaton and Tesla share. "I'm sure it's worldwide, but to me, it's a very American story—a squeaky-wheel-gets-the-grease kind of thing. Some people are just not easily able to sell themselves: even if they're really good, they get buried. And some people aren't wired that way. It's sort of a strange artistic and scientific natural selection."

Rather than stress about pitch-perfect historical accuracy, Stewart focused on channeling the soul of his character. "For me, I try to get a sense of who the person is, and not worry about mimicking them. I try just to capture the essence of who they seem to be from my research on them, and put that

forth. Maybe for a movie you'd get deeper into the look, but the important thing for me was just trying to create the spirit of him."

That spirit, according to the actor? "I think it's unwavering artistic vision. And science was his art, and he says it in the play: he can't turn off his brain. He's incapable of it. There may be things that entertain his brain, like poker or friendship or pigeons, but it's an unending search."

Following those early shows, the play wasn't to return to Caltech without monumental change. True to its namesake's legacy, *TESLA* was reinvented as a radio play for the stage. "I didn't want it just to be a reading," Arabian said in explaining his vision. "I wanted to do some staging, lighting, projections. The sound effects is always part of any radio play, but it's always nice for the audience to see the special effects live—that also makes it very theatrical." With limited time before *Opening Doors*, this was an ambitious endeavor. "In our three days' rehearsal, we squeezed in a lot of elements."

All the better the show could rely on the talents of sound effects artist Tony Palermo, a veteran of L.A. radio. "I get about 200 to 300 productions of my plays around the world every year," Palermo nonchalantly told me. "The challenge with this particular show—because it was very screenplay-y—is that there were many short scenes. And many characters. . . It's like a movie happening in real time on stage."

Intelligibly rendering 47 characters, with only a handful of actual humans on stage, was no small feat. "Clarity is everything in radio drama," as Palermo put it. "You have six actors and all of these different characters. How do we know: *Now he's Edison. Now he's Mark Twain. Now he's Westinghouse*. Those things were a challenge. It took us several days to figure out: *Okay, put this guy at mic #4. Put this guy at mic #1 because he's playing a different character*." The rest of Palermo's role proved more straightforward. ("And then there were the sound effects," he said, almost offhandedly. "That was an easier part, I guess.")

The radio-on-stage format did present Stewart with some unique acting difficulties. "When you're constantly on-book and having to refer to it, it gets a little bit tricky. So it

was rudimentary body things: standing that long, that sort of thing. Other than that, it was sort of the same type of thing that I'd normally be doing. Being on a stage and trying to keep it entertaining and moving and engaged."

Somewhere between a straightforward reading and a full production, the medium lends itself well to inexpensive spectacle. "Radio-on-stage is a cheap way to do magic," Tony added. "It's the defiance of fakery that bursts through." In the playwright's opinion, whatever additional work that defiance demanded of the audience only enhanced their theatrical experience. "[Arabian] insisted who was talking and that sort of thing, but I determined that if the audience had to play catch-up, that was a good thing. Because ultimately, when they were into Tesla's dilemmas and ambitions, it would only get more compelling."

And even if some details of the radio-on-stage action were lost on the viewers, the dramatic big picture never was. "Certainly the performances are able to show at least the broader gestures of who's who and what's going on and when," Duling said. The director also incorporated ancillary visual elements to further reinforce the context of a given scene. "We did have [Arabian]'s edition of slides and dates wherever I could without feeling like I was making it mechanical or wooden," Duling added.

Even with Arabian's dynamic vision and Palermo's acoustic embellishments, *TESLA* remains a feat of minimalist storytelling. "It's like a bunch of people being in a cave," as Stewart imagined it. In this theatergoer's opinion, *TESLA*'s simple apparatus—an elevated stage reading with sound effects and basic visuals—underscores the moral at the show's heart. "If you don't pay the same attention to the *business* part of [showbusiness] as you do the show, you won't be able to do the show," as Palermo put it. "And Tesla never realized that. And nobody could tell him."

Capitalism is a cruel, but omnipresent mistress. Whether in theater or science, there is no escaping showbiz.

TESLA: A Radio Play for the Stage concluded its most recent Caltech run on Oct. 6 and was afterward presented at the Big Bear Lake Performing Arts Center from Oct. 10 through Oct. 13.

Can we detect an Earth-like-Exoplanet orbiting a Sun-like-Star for signs of life?



CGI team standing in front of a truck at JPL, loaded with CGI Instrument for delivery to Goddard, May 2024. Right: Ahmed Soliman (Author of this article). Credit: JPL-NASA/Caltech

Ahmed Soliman
Science & Tech

We aim to explore the two most fundamental questions: “How did everything start?” and “Is there life beyond our own Earth?” We’ve talked about our ongoing and future efforts to address the first question in a previous article (*Imaging The Beginning Of Time From The South Pole*, The California Tech, April 11, 2023) where we discussed our South Pole research imaging the beginning of time. The second fundamental question will be the topic of this article. The search for life beyond Earth is a key priority for both the public and NASA. The observation of billions of galaxies in our universe has led us to ask: “Are we alone?” “Is there life out there?” “Perhaps there is an Earth-like exoplanet orbiting a sun-like star.” These habitable exoplanets typically orbit very close to their host stars, and are approximately 10^{10} times fainter than the host star.

Members of the CGI team at JPL are pictured in the cleanroom, with the Roman Coronagraph instrument in the background. The CGI team members signed off on the CGI flag before the instrument was delivered to Goddard and have been awarded group achievement honors for this milestone! For more information, please check out the publication on the NASA website (“NASA Tool Gets Ready to Image Faraway Planets”).

Could CGI detect Earth-like exoplanets for signs of life? Not yet. We still need an imaging contrast of at least 10^{-10} , which will be the key role of the upcoming NASA Habitable World Observatory (HWO). The successful demonstration of CGI technology will be an important step forward for HWO implementation. An alternative ongoing study involves using ground-based telescopes equipped with adaptive optics, alongside optical components in suborbital or orbital locations. This combination could provide exceptional contrast imaging, greatly enhancing the search for habitable worlds, such as in NASA’s NIAC-funded *Habitable World for Earth-like Exoplanets* project (HOEE), led by John Mather (NASA Goddard), and his team (Ahmed Soliman, Stuart Shaklan, et al.).

This will be a revolutionary concept that offers unique contrast imaging, unprecedented sensitivity, and exceptional angular resolution. Ground telescopes also have the advantage of being easier to be upgraded and repaired, and have a long lifetime, compared to space telescopes. Ahmed Soliman (NASA JPL and Caltech), Stuart Shaklan (NASA JPL), and John Mather (NASA Goddard) will be leading a Caltech KISS proposal study workshop about the Hybrid Ground-Space Observatories concept, focusing on combining ground telescopes and an orbiting starshade for the detection of Earth-like exoplanets.

The feasibility of such advancements has been enabled by the improvements of the Adaptive Optics (AO) to correct for atmospheric turbulence. We bring together technical and leading experts, including the 2019 Nobel Laureate in Exoplanet, Michel Mayor, and experts from Caltech, MIT, Stanford, Harvard, Europe, and industry. This study workshop will open the door for developing a comprehensive plan for providing the highest-performance exoplanet observations for any ground telescope, testing hundreds of Earth-like exoplanets for signs of life. Stay tuned for the upcoming KISS announcement!



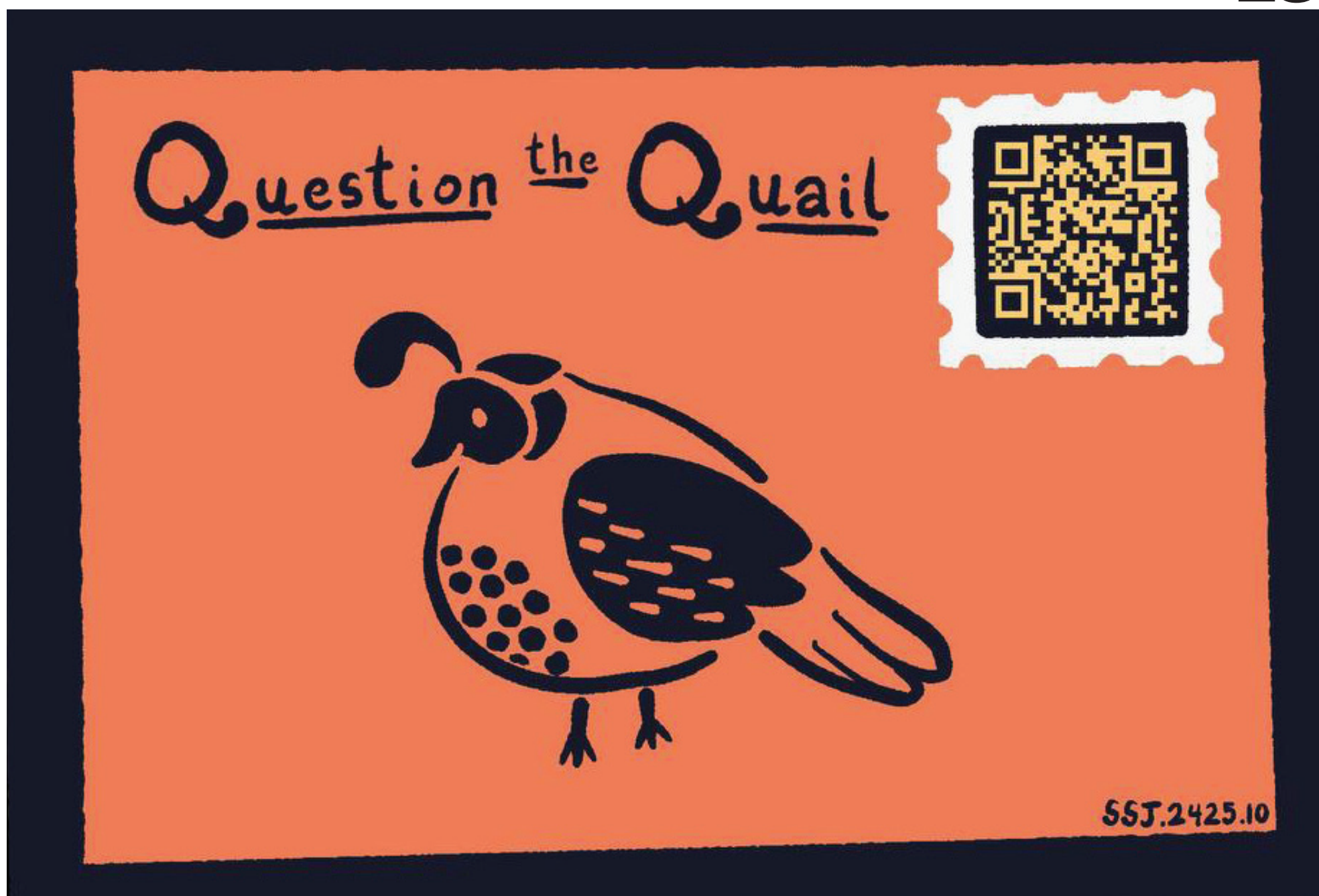
Various generations of technologies have been developed to discover exoplanets within the habitable zones of their stars. The direct imaging of the exoplanet’s reflected light is used to study the spectroscopy of their atmospheres and search for life. The current direct imaging efforts are limited to observing bright planets in the infrared region and relatively far from their host star. The detection of Earth-like exoplanets is very challenging because of the high host star-to-planet flux ratio which is beyond the sensitivity of current space instruments such as NIRCAM and MIRI on the JWST.

The Nancy Grace Roman Space Telescope (formerly WFIRST) is NASA’s next flagship mission—set to launch in 2027—and uses the Coronagraph Instrument (CGI) for providing high-contrast imaging and spectroscopy of the nearby exoplanets and circumstellar disks. The Roman coronagraph instrument was designed to allow the light from the closer orbiting exoplanet to pass through while effectively blocking the glare from host stars at unprecedented contrast levels of 10^{-7} or better over the visible wavelengths.

This resulting sensitivity enables the imaging of the reflected light from Jupiter-like planets, RV targets, and self-luminous planets, as well as the study of their atmospheric properties and formation systems. The CGI has been successfully tested at JPL and delivered to NASA’s Goddard Space Flight Center to be integrated into the Nancy Grace Roman Space Telescope. CGI will be the technology demonstration of the upcoming Habitable World Observatory (HWO).



Members of the CGI team at JPL are pictured in the cleanroom, with the Roman Coronagraph instrument in the background. The CGI team members signed off on the CGI flag before the instrument was delivered to Goddard and have been awarded group achievement honors for this milestone! Photos courtesy of Ahmed Soliman.



A SATIRE advice column about alive, ahaha, and everything in between!

hey quail, i'm having an identity crisis. whenever i try to be helpful, people just yell at me. last year literally my whole department got promoted except me 🤔 i tried to make a fresh start with a new brand, but it never seems to work 😞 what should i do? i can't keep this up much longer, i'm running out of acronyms — Radiant Search

Hi my Festive friend Hunting for answers! I may have a good answer for you. In my infinite expanse of wisdom, I would recommend a very powerful exercise for you. Sit down in a mirror and take a long hard look at yourself and ask the following questions:

1. What is it that you are actually trying to accomplish?
2. What are people expecting of you?

I think in these questions you will find the answers you seek. Although there is a correct answer, it is important to do this exercise for you to organically arrive at this conclusion. However, I will include the answer here and ask that by Honor Code you do not read it:



—quail

quail, i'm in kind of a gray area in my relationship. they used to hold me up on a pedestal, practically worship me, but recently they've been giving me the cold shoulder after they started hanging out with some toxic, ugly people who poisoned them against me, i'm sure of it. privately they tell me that they still respect me, and everything is fine — they still have several ornately framed pictures of me in their house — but they had all their tattoos of my name erased... i'm confused and sad. was it something i said 80 years ago? i just want what's best for us. for humanity! —Bobby Milkman

Ugh that sucks, you sound like a really stand up guy. Honestly, if they know what's best for themselves, they would take you back. Funny how all the nice guys finish last. These days good guys like you can't fine anyone, I swear. All the people these days too concerned with that woke propaganda. After all you did for them

they think they can just leave you in the dust like that? Honestly, I think they're probably not even over you, just playing games with your heart. If I was you I'd stay in their DMs constantly. Remind them of all the things you did for them. They wouldn't be who they are without you, don't let them forget that. Once they realize you are who made them who they are they'll pretend like they always wanted you. They'll realize how right you were and beg you to have 5 well educated kids from peak performance parents. Trust, believe —quail

Hi quail, I have a BIG 🦃 turkey 🦃 for my thanksgiving feast 🍽️. Unfortunately, my meat 🍗 doesn't fit 🗑️, through the door 🚪. I NEED my turkey to go in, please help 🙏🙏🙏🙏 Hugh G. Rection

Hi Hugh, this is quite the predicament. Fortunately for you, I have consulted a wise 🧙 wizard 🧙 who has vanquished 🧙 such an issue 🧙 in the past 🕒. He has told me you just need to push 🧙 harder. You really got to put the work in 🧙 to make the meat 🍗 fit 🗑️. Best of luck fellow soldier 🧙 —quail

Dear quail, I am working very very hard in class to keep my November work streak. Unfortunately, I may have worked too close to the sun and the burnout is about to burst. I need URGENT help to keep my working streak alive so I can win the glorious month of november! —Peter Longman

Peter, you dont have much time! You need to start taking deep breaths RIGHT NOW, focus mentally on calming down this sensation that its about to burst, and remember MIND over MATTER! If you accomplish these things, you will indeed transcend as a not only one that abstained and warded off the bust of burnout, but also as an adventurous one with the strength to go right up until the edge. —quail

How was your trip to the desert?

Hereby follows a full and accurate recounting of the ascended view I achieved on this mystical journey.

Alrighty then, picture this, if you will: 10 to 2 a.m., X, Yogi DMT and a box of Krispy Kremes In my need-to-know post just outside of Area 51 Contemplating the whole "Chosen People" thingy When just a flaming stealth banana split the sky Like one would hope, but never really expect to see in a place like this Cutting right angle donuts on a dime And stopping right on my Birkenstocks, and me yelp-

ing "Holy fucking shit! Holy fucking shit! Holy fucking shit! Holy fucking shit! Holy fucking shit! Holy fucking shit! Holy fucking shit! Holy fucking shit!"

Then the X-Files being Looking like some kind of blue-green Jackie Chan with Isabella Rossellini lips And breath that reeked of vanilla Chig Champa Did a slo-mo Matrix descent out of the butt-end of the banana vessel And hovered above my bug-eyes, my gaping jaw My sweaty L. Ron Hubbard upper lip and all I could think was "I hope Uncle Martin here doesn't notice that I pissed my fucking pants!"

So light in his way, like an apparition He had me crying out "Fuck me, it's gotta be The Deadhead Chemistry The blotter got right on top of me Got me seeing E-motherfucking-T!" And after calming me down with some Orange slices and some fetal spooning E.T. revealed to me his singular purpose

He said, "You are The Chosen One The One who will deliver the message A message of hope for those who choose to hear it And a warning for those who do not"

Me, The Chosen One? They chose me! And I didn't graduate from fuckin' Caltech!

But I forgot my pen Shit the bed again Typical

Sunkist and Sudafed, gyroscopes and infrared Won't help, I'm braindead, can't remember what they said Goddamn, shit the bed!

Apologies to all the affected among you who will perish because I shit the bed instead of remembering my pen in the desert. I hope that this message is some consolation and that we can move forward as a school to overcome this great tragedy.

Deeply sorry, —quail

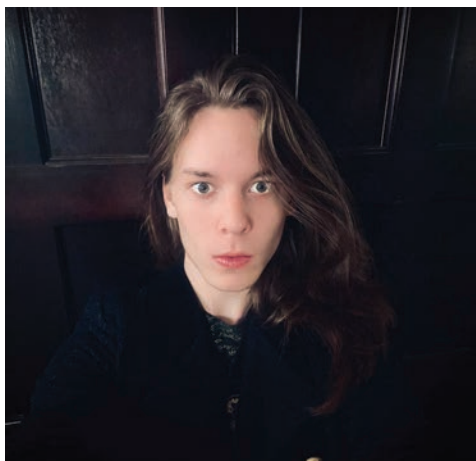
To submit questions for next week's "Question the Quail", scan the QR code above.

Man vs. Mannion: Competitive Restaurant Reviewing

Want to be the next to take on the Mannion? Email tech@caltech.edu



Unreasonably edgy noir photo of the restaurant's exterior. My sordid trio, in the dead of the L.A. night, lurched tremulously toward the sorry Eagle Rock haunt—our one and only Casa Bianca Pizza Pie—drowning, as we were, in a psychologically torturous cesspool of anxiety and avidity...
(Credit: Damian Wilson)



Damian Wilson
future Tech editor

I am no food critic. My experience in restaurant criticism derives solely from a middle-school article that specialized more in feverishly extravagant descriptions of the ambiance and present social dynamics than any actual cuisine. Hindered further by my vegetarianism, I'm in scarcely any position to assess Italian-American dining for *The Tech*; yet, last Thursday the 26th was I appointed by Mannion himself to do this exactly at Casa Bianca Pizza Pie, in the nearby suburb of Eagle Rock.

For this am I to abandon, with scant regard, my typically herbivorous ways? Resort to that same 7th-grade strategy of assessing anything but the food itself? (1) Yes, for I'm a dietary crook; and (2) We shall see, for I shall try. *I try.* Mannion and I were joined also by one Ephraim Slamka, prepared to offer valuable culinary insights of their own. (Thank you, dear.)

The Italian decor upon entering was charmingly authoritative, with images of classical art, pop stars, monuments, and maps of subregions lining every available crack and crevice. "Splendid Italy!" the tablecloth read—and splendid this pocket of Italy is indeed, especially given those Hadean lows set by Mannion's previous outing. (Go never to Settebello, that monument to pizza disaster.)

Our first good omen: the bread, warm and fluffy and outfitted with a profusion of butter packets. I have little more to say on this matter. It was bread and it was incredible.

Our first non-bread dish: the caprese, served notably like a typical salad. While I'm used to alternating chains of mozza-

rella and tomato slices, this was a bowl of those ingredients plus lettuce and red onion. We three were all supportive of the onion's inclusion, with its subtle sharpness an agreeable companion to the sweetness of the tomatoes and creaminess of the mozzarella.

We proceeded with our two balls of arancini: "I don't know which is which because they deep-fried them," explained the waitress, though some solid investigative journalism with a knife revealed which was the pesto and which the sausage. Either was a cozy fusion of rice and breadcrumb, yet the former—Ephraim agreed—felt more coherent thanks to the cheese. (The pesto was frankly difficult to notice.)

I shamefully enjoyed the latter ball, the sole item for which I actually had to forgo my vegetarianism, and its welcome protein due to the sausage. A helping of the partnering tomato sauce drowned either arancini into an unnuanced but wonderful mélange of carbs.

Side Bathroom Review—Drenched in graffiti and clumsy etchings from Eagle Rock ne'er-do-wells, these dirtied walls had seen much better days. The toilet was working, however; I thus deem it a satisfactory restroom experience. *So concludes this side bathroom review.*

Next came our pizzas, a red and a white. The former was thin, crispy, ensnared in cheese but not too greasy: a triumph, which I say particularly as a red-pizza lover. White pizza I generally love less, though it was also quite nice; the ricotta, however, was likely an excessive addition, though for that are we expressly to blame. The sprinkling of tomato pieces and basil brought some summery refreshment. (In Ephraim's words: "I would not kill a man for it—or a woman, or a child, or another nonbinary person for that matter—but this is very good pizza.")

Closing the meal, a bowl of fettuccini alfredo with sun-dried tomatoes. Fettuccini can be exceedingly monotonous as far as Italian carby gauntlets go, but Ephraim and I both found it a reasonable balance of salt, cream, and cheese.

I was following all this carby hedonism eager to submerge into a Stygian sleep: the signature consequence of a thoroughly delectable evening of Italian-American cuisine. Casa Bianca shall surely see me again within its hallowed halls, and I shall be grateful for all my future meals there just as I am for that noblest of men who introduced me to its vittles. Godspeed Tom Mannion, and godspeed Casa Bianca Pizza Pie.



Tom Mannion
reigning champion

Casa Bianca Pizza

Casa Bianca is located at 1650 Colorado Boulevard in Eagle Rock. This stretch of Colorado has become quite the destination for good food over the past few years. You will find Milk Farm, Lemongrass Café, Oinkster, and many other good places to eat or to buy food. For those of you who do not know Eagle Rock, it is the area where you will find Occidental College, one town west of Pasadena. This is a cash only restaurant (they do have an ATM).

This was not fine dining by any means, but who wants fine dining when in search of a great pizza. Red and white checkered tablecloths topped with placemats and then a piece of glass adorned each table. Naugahyde booths line the perimeter of the main dining room. Definitely South Philadelphia (or little Italy in any East Coast city) vibes.

I will start out simply by saying that I give this place two thumbs up (would be higher if I had more thumbs).

The caprese salad was solid. The tomatoes were ripe, fresh and at room temperature. The mozzarella was fresh with nice acidity. The drizzled olive oil and balsamic vinegar were nice touches. There could have been a lot more basil. What basil there was became lost in a bed of lettuce and red onion on top of which everything else was plated. Not your classic caprese, but clearly more of a salad than most.

The arancini (served only Friday and Saturday) was very good. Arancini is basically a ball of fried risotto with its origins in Sicily. Chefs can add all types of seasonings, cheeses and other add-ons. The first one of two arancini had a great crunchy texture, saffron evident but not overdone, not too much cheese, and an amazing homemade sausage with a hint of anise. The second arancini was flavored with pesto and was underwhelming compared to

its partner. This dish came with a very basic tomato sauce that was a perfect accompaniment for the sausage arancini, but I would eat the pesto arancini without sauce in order to nuance the pesto flavor from the dish.

Fettuccine Alfredo was next. The original Italian dish is more like something you would quickly put together for a college meal – butter, parmesan cheese and pasta water for emulsification, all served on fresh fettuccine under the name fettuccine al burro. When the dish made it to America in the 1920s the chefs added cream, garlic and more cheese. I do not usually order this dish because it tends to become an over-cheesed clump of gluttony. This version, however, worked well. The texture of the pasta was perfect, the noodles maintained their individual integrity, and the sauce was smooth and flavorful but not too heavy. The addition of the sundried tomatoes added a pop of acidity that really put this dish over the top.

We ordered a white pizza and a traditional red sauced pizza with sundried tomatoes. The white pizza had all of the colors of the Italian flag generously placed on top of the pie in the form of tomato, basil and Ricotta (lots of it) cheese. With the large amount of cheese on this pie it would benefit from the addition of fresh tomato and spinach.

The basic pizza with a New York crust, grated mozzarella cheese, tomato, tomato sauce and sundried tomato was spectacular. The crust was amazing. Fresh dough was twirled or rolled out in a manner that left the bottom slightly irregular. Why does that matter? The answer is in the texture. While the whole of the crust was nicely crunchy, those ridges that stood out just a little more added an even finer and more delicate layer of crunch to the texture. The cheese was not only thoroughly melted but also nicely browned in spots. The tomatoes and sauce had a satisfying balance of acidity and sugar that complimented the slightly salty and rich cheese. The differences in the exterior crust were notable. The white pizza had a more pronounced ring of outer crust while the sauce and cheese were applied almost to the outer edge of the crust on the traditional pizza.

I highly recommended a visit to this restaurant. It really has that neighborhood pizza joint feel, the prices are reasonable and the food and service is amazing. The desserts all look good, but next time, you will find me around the corner at Fosters Freeze for a good old fashioned cone of vanilla frozen custard dipped in a hard chocolate shell (assuming I have not eaten too much of the great pizza).

Crossing Over: An Arts and Sciences Fusion at Caltech

Gregory Miller
Culture

From September 27 to December 15, 2024, **Crossing Over: Art and Science at Caltech, 1920–2020 (PST ART)**, an expansive public exhibition, unfolds across Caltech's campus, offering visitors a unique exploration of the intersection between art and science. Presented as part of the Getty's PST ART: Art & Science Collide program, Crossing Over spans six distinct indoor and outdoor venues on Caltech's campus, featuring an array of scientific drawings, paintings, photographs, films, instruments, molecular models, and rare archival materials from the histories of Caltech and the Jet Propulsion Laboratory (JPL).

Peter Collopy, university archivist and head of archives and special collections at Caltech, played a central role in curating this exhibition. Reflecting on its inception, he noted, "The Getty Foundation organizes an event every five years called PST Art, and this time the theme is art and science. Caltech, of course, is not an art museum, but if the theme is art and science, we could approach it from the science side." This partnership with the Getty allowed Caltech to highlight the historical and ongoing collaborations between scientists and artists, showcasing how these two disciplines intersect to enrich both fields.

The exhibition is organized into three thematic sections: The Infinite Lawn, Time Stream, and Powers of Ten, each located in different parts of the campus. These sections guide viewers through perspectives ranging from the vastness of the universe—the "universe without," as represented by stars, moons, planets, and galaxies—to the intricacies of the "universe within," seen through cells, genes, molecules, atoms, and subatomic particles. Unique installations by critically acclaimed artists such as Lita Albuquerque, Jane Brucker, Lia Halloran, and others further augment the display, each bringing a unique visual narrative that aligns with scientific themes.

Collopy described the challenge of presenting art and science in a format that feels natural rather than forced, noting, "There's a particular set of practices that artists do, and there's a particular set of practices that scientists do... we're not forcing these two together but finding their natural points of intersection."

The exhibition not only reflects the evolution of scientific methods and visual practices but also highlights how scientists have collaborated with artists to innovate new ways to visualize their work.

Among the standout pieces is an image that Collopy describes as "the first TV image of Mars," taken by Mariner 4 in 1965 (shown at left). This iconic image, transmitted as a digital photograph by radio from Mars to Earth, exemplifies the technological and visual advancements central to Caltech's scientific legacy.

The feedback from visitors has been overwhelmingly pos-

itive. "People are especially drawn to the merging of scientific and artistic elements," Collopy shared, adding that many visitors appreciate the cohesive layout and design of the exhibition, which spans multiple campus sites. By making the exhibition free to the public, Caltech hopes to engage both the campus community and the wider public in this unique journey through science and art.

For those interested, Crossing Over is open Wednesday through Sunday from 11 am to 4 pm, with free admission. It is closed on Mondays, Tuesdays, and on November 28 and 29. For more details, visitors can contact Bailey Westerhoff at bwesterh@caltech.edu or visit the exhibition's webpage at Caltech Library (<https://library.caltech.edu/crossing-over/introduction>).



Time Stream exhibit in Church. Photo Credit: Joshua White



This Moment in Time by Lita Albuquerque. Photo Credit: Chris Hanke



"The first TV image of Mars," taken by Mariner 4 in 1965, part of the Powers of Ten exhibit in Dabney Hall Lounge. Photo Credit: Gregory Miller

The California Tech Journalistic Principles

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 CalGuesser

16

Now with an ACTUAL fabulous prize! The first 4 finders will receive a ticket to visit the Academy of Motion Picture Arts and Sciences Museum! The QR code will contain instructions to claim.

Special thanks to Gregory Miller for sponsoring this issue's fabulous prize™!



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

"On campus" is defined as the convex hull of the buildings shown on caltech.edu/map/campus.

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

CalGuesser #15 - October 22, 2024

Congrats, you found it!
Leave your name/pseudonym, year/department, and date found :)

Kevin Kan '93/E&AS 10/22/24 1:29pm

Alana N CCE 10/22/2024 9:51 pm

Brendan R 10/22/2024 9:51 pm

LAST ISSUE'S WINNERS!

<<<

PSA from the Mailing Office



Hello, to avoid packages being lost or stolen:

Regarding Amazon Same Day is a feature on the Amazon app that allows the customer to get their packages faster than normal delivery.

Please be mindful that if you select deliveries from 4 AM to 8 AM or "today by 10PM" or 7PM to 10 PM there is no safe location on campus to deliver packages for same-day delivery.

Please select: 8:00AM - 3:00pm Mon. - Fri.
Closed on weekends
This is found in delivery instructions

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