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The Growing Legacy of Caltech's Trees: A Technological and Sustainable Environmental Revolution

Gregory Miller News

In the heart of Pasadena, nestled between the evergreen-dotted hills and the sprawling cityscape, stands a campus symbolizing human ingenuity and environmental harmony: Caltech. Remarkably, what was once a patchwork of open chaparral and agricultural land has transformed into a living laboratory where science meets sustainability. Today, Caltech's carefully designed landscape reflects this transformation, with tree-lined avenues such as San Pasqual Walk as living symbols of this balance between nature and innovation.

The trees that line the avenues are more than mere dec-oration—they testify to how thoughtful planning and eco-logical awareness can shape the future of institutions like Caltech. The very roots of these trees remind us of our responsibility: to cultivate a future that is as resilient and deeply rooted as the land on which we stand. However, this ecological balance is delicate. In February 2017, Caltech's iconic 400-year-old Engelmann Oak, located between Dabney Hall and Parsons-Gates Hall of Administration, succumbed to a fungal infection caused by the *Armillaria* oak root fungus, compounded by stress from drought and windstorms. More recently, the campus witnessed the sudden fall of another Engelmann oak near the Red Door Café in March of 2023. These events serve as poignant reminders that trees symbolize resilience and are also vulnerable to environmental stressors. This brings us to the question, why does the Earth's delicate balance continue to be tipped by forces beyond our control, even as we understand the risks these disruptions pose to trees? To preserve this fragile equilibrium, attention must be given not only to the roots but to the entire structure of the tree.

According to John Onderdonk, Associate VP of Facilities Operations and Services and Chief Sustainability Officer, the tree canopy, particularly the crown of the tree, is an incredibly important part of the long-term sustainability and viability of the campus and the community. This focus on the tree can-opy reflects Caltech's broader vision of sustainability. Beyond the research labs and class-rooms, the Institute's commitment to environmental stewardship is deeply rooted in the very landscape of the campus. Its trees—over 50 indigenous and climate-adaptive speciesserve as a green canopy sheltering students, faculty, and staff from the merciless California sun. They are mainly symbols of Caltech's innovative efforts to address environmental chal-lenges. From cutting-edge machine learning applications to community-driven planting initiatives, Caltech's trees are part of a broader narrative of technological advancement, ecological responsibility, and community engagement. Pur-posefully, Caltech has em-bedded sustainability into its campus culture. The necessity of aligning with nature to pre-serve Earth's natural resources while ensuring the survival of humanity has never been more evident.

Beyond their environmental impact, Caltech's trees influ-ence the daily social interac-tions and cultural practices on campus. The green spaces, particularly the tree-lined avenues and shaded walkways, have become connected to the campus experience. These areas provide aesthetic value and serve as meeting points for the Caltech community, symbolizing the meeting point of nature, sustainability, and human interaction. Ethnographically, the integration of these green spaces reflects Caltech's commitment to fostering a culture of environmental responsibility, where sustainability is not just a policy but a lived experience that shapes the behaviors

and attitudes of students, faculty, and visitors alike.

Maximilian Christman, Manager of Caltech's Sustainability Programs explains that transforming Caltech's green spaces has been a significant undertaking. Christman notes, "Of the campus's 125 acres, 17% is covered by native/drought-resistant vegetation, and 18% of the campus is covered by turf, of which 78% is of the low-water-use variety.

This represents a significant change from 15 years ago when most turf was water-intensive, and indigenous vegetation only covered 4% of the campus." Christman adds that these changes have been achieved through consistent efforts to incorporate native vegetation into all new construction projects and convert existing spaces to low-water-use land cover. The primary challenges, he continues, "relate to the cost of conversion and balancing the desire to preserve historical aspects of the campus."

pects of the campus." Equally important, one of the most intriguing aspects of Caltech's efforts in urban for-estry is its pioneering use of technology to understand and manage trees more efficiently. For instance in 2016, Pietro Perona, the Allen E. Puckett Professor of Electrical Engi-neering spearheaded a project using advanced computer vision algorithms and data from Google Earth and Google Street View to recognize tree species and record their locations auto-matically. This system offered a cost-effective alternative to traditional tree surveys, which were labor-intensive and typically conducted only every 20 to 30 years. Consequently, this innovation has reshaped the pragmatic approach to tree conservation, demonstrating that modernism's influence in our current postmodern era has brought us to a pivotal point in history, and Caltech is responding accordingly.



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Trees of Caltech

(continued from page 1)

However, we will face increasingly challenging and vulnerable situations if we fail to address these sustainability issues.

Additionally, Christman highlights that the campus boasts over 3,000 cataloged and mapped trees. He notes that Caltech's "trees play a critical role in providing pollinator habitats, shading campus spaces, reducing local heat islands, and establishing the unique character that makes Caltech a world-class institution."

Similarly, Onderdonk views these comprehensive efforts as not only addressing environmental challenges, but also contributing to a broader narrative of technological advancement, ecological responsibility, and community engagement. This emphasizes the importance of Caltech's tree canopy in mitigating the urban heat island effect and contributing to carbon sequestration.

Compared to other California institutions, this level of technological integration sets Caltech apart. While campuses such as Stanford and UC Berkeley have notable sustainability programs and robust tree inventories, they often rely on more traditional tree management and maintenance methods. Caltech's use of artificial intelligence to automate tree surveys saves time and labor and provides continuous monitoring, which is particularly vital in a rapidly changing climate. This innovation aligns with Caltech's broader

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sustainability goals outlined in its 2023 Annual Report, which emphasizes environmental stewardship and responsible resource management. From a utilitarian perspective, it provides the most efficient path to preserving campus biodiversity.

The 2023 report highlights Caltech's continued efforts to make its campus more sustainable. It is relevant as California's irrigation levels in 2023 were the lowest recorded due to the state's unusually wet winter.

This achievement reflects Caltech's success in implementing sustainable landscaping practices that reduce water usage and increase reliance on drought-tolerant species, such as indigenous oaks and climate-adaptive trees. Consequently, this shift in water conservation is an exemplary model for institutional sustainability. According to the United Nations Department of Economic and Social Affairs, the global population is projected to reach 9.7 billion by 2050, underscoring the undeniable need for sustainable practices. As a forward-thinking leader, Caltech exemplifies the principle that what sustains our existence must also be preserved.

Moreover, the 2023 report highlights Caltech's continued efforts to enhance campus sustainability, focusing on reducing water consumption and relying on drought-tolerant species like native oaks and climate-adaptive trees. This achievement underscores Caltech's commitment to sustainable landscaping, setting an example for other institutions.

Furthermore, Christman highlights the integration of Geographic Information Systems (GIS) in tree management, explaining that "GIS mapping for trees has become more commonplace, and Caltech uses this data to troubleshoot trees susceptible to disease, improve maintenance, protect trees during construction, and enhance campus spaces." This technology helps optimize tree health and long-term sustainability, offering a scalable model for other institutions.

Delmy Emerson, Director of Buildings and Grounds at Caltech feels integrating trees into new campus projects involves collaboration among designers, landscapers, and architects. Like Christman, she contends that the use of GIS technology and adherence to the Campus Design Principles ensure the health and sustainability of campus green spaces, while aligning with tree protection guidelines. Additionally, Emerson believes that beyond human benefits, Caltech's trees are critical in supporting local wildlife. Indigenous species, like coast live oaks, provide shelter, food, and habitat for various animals, including birds, insects, and mammals. Their branches offer nesting sites and cover, while acorns and fruit provide sustenance.

Building on Onderdonk's insights regarding the significance of the tree canopy, Emerson emphasizes that the selection of tree species on campus is carefully guided by consider-

ations of canopy height, spread, and root system requirements to ensure long-term sustainability. These decisions not only support the preservation of local wildlife but also contribute to enhancing air quality and regulating the water cycle. This symbiotic relationship underscores the critical importance of maintaining a diverse and resilient tree canopy, which directly influences broader ecosystem health and plays an essential role in sustaining water resources, food security, and climate stability.

In addition to sustainable landscaping initiatives, Caltech faculty are engaged in cutting-edge research that underscores the critical ecological functions trees serve in both environmental and atmospheric systems. For example, Dr. Jared Leadbetter, Professor of Environmental Microbiology, focuses on microbial processes and lignocellulose decomposition, revealing the pivotal role microbes play in sustaining tree health and facilitating nutrient cycling. Similarly, Dr. John Seinfeld, the Louis E. Nohl Professor of Chemical Engineering, investigates the interactions between tree ecosystems and atmospheric chemistry, with an emphasis on their capacity to mitigate pollutant levels. These research endeavors have gained heightened significance following the recent fall of the Engelmann oak near the Red Door Café, drawing attention to the importance of ongoing monitoring and management of campus tree health.

Notwithstanding Caltech's alignment with several United Nations Sustainable Develop-

ment Goals (SDGs), Christman acknowledges that the primary focus remains carbon neutrality by 2045. He states, "Caltech finds many commonalities with the UN SDGs but isn't currently aiming to meet every goal operationally," noting that the institution is committed to ambitious sustainability regulations.

Looking ahead to the 2030 United Nations SDG marker, Caltech's work aligns with global efforts to create sustainable urban environments and combat climate change. While UC Berkeley and Stanford are also advancing sustainability, Caltech's use of artificial intelligence in urban tree management stands out. As institutions focus on meeting the SDGs, Caltech's innovations set a standard for others to follow.

As Caltech leads in science and technology, it also models environmental stewardship. The Institute's trees stand as living symbols of its commitment to sustainability. By using advanced digital algorithms to monitor tree health, Caltech ensures its campus and community remain vibrant and green for generations. For students, faculty, and staff, the next time you walk along San Pasqual Walk or rest under a coast live oak, remember these trees are not just part of the landscapethey are integral to Caltech's innovation, sustainability, and community engagement.

Gregory Miller studied Circular Economy and Sustainability Practices at the University of Cambridge and is currently a postgraduate student in ethnographic research at the University of Oxford.



Figure 1: **Tree Canopy Coverage:** This pie chart shows the distribution of land cover types on Caltech's campus. Data Source: Caltech 2023 Sustainability Report





Tree Management Methods Across Institutions



Figure 3: This bar chart compares the use of traditional methods versus AI methods for tree management across institutions. Data Source: Caltech 2023



Figure 2: **Change Over Time:** This line graph illustrates the change in native vegetation and water-intensive turf over the years. Data Source: Caltech 2023 Sustainability Report



Figure 4: **Water Conservation:** This bar chart presents the decline in irrigation levels over time at Caltech. Data Source: Caltech 2023 Sustainability Report



Trees of Caltech -Gregory Miller



Keck Labs Remain Moist Post-Fire

On October 6th there was a fire in one of the labs in Keck. According to Shayna McKinney, Chief Communications officer for Caltech, "The exact cause of the fire is still under investigation, but the source is believed to have been a piece of equipment in one area that malfunctioned." Sources have told the Tech that the equipment was believed to be a soldering iron.

The fire activated the sprinkles which "worked as designed and activated to put the fire out in the space where it originated." There were also several fire trucks on scene.

According to McKinney, "No significant damage to the building was reported, however, water from the sprinklers did collect in areas on the basement, first, and second floors. Some ceiling and floor tiles, and carpet patches will be replaced, and the elevator's electrical system is being repaired. We will continue to monitor the spaces to ensure there are not future concerns with moisture or mold."

-UNAI ARRIZABALAGA, THE CALIFORNIA TECH



The pink flowering trees are Floss Silk Trees, and the tall tree in front of Booth is a Coastal Redwood Sequoia. Photo Credit: Gregory Miller

DRANGE

INTERESTED IN JOINING?



STUDENT

experience

Orange Watch is a student oversight program in which team members attend events and stay sober in order to check on the safety of fellow students, offer support to their peers, and call for help if needed. Orange Watch leaders are not policy enforcers. Students must complete an Orange Watch training in order to be considered for membership on the Orange Watch Team.

> VOLUNTEERS GET GRUB HUB CREDITS

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Note: If you are a current member of Orange Watch, you will need to be retrained.

Sleep – myth or reality?

Better Free Dozes Column

We're at Caltech. Of course there will be people saying that without sacrificing sleep, you can't get enough time to do your sets, your research, your socializing. But what came first – the advice or the lifestyle? That is to say, did people start staying up later, then realize because the people around them were staying up, it was impossible to do anything in the mornings, so they started staying up later too, and the vicious cycle perpetuated? Or is it truly that impossible to maintain a healthy sleep cycle at Caltech? Another thing to think about – do people stay up because Red Door is open until 2 so they can get their caffeine even late at night, or is Red Door open to cater to people staying up?

A quick survey revealed that one of the common reasons that people stayed up was to finish work that they felt they couldn't go to bed without having done it. That could be because, on a 5-course schedule in addition to extracurriculars, it can be difficult to find time to do all your work and still save a little time for yourself. In the "Getting Better Sleep" workshop hosted by Lee Coleman and Grace Wong (and SWS), they introduced the concept of revenge bedtime procrastination, which is when you are sleepy but want some time for yourself after a long day where you feel like you haven't had any down time. Whether this is scrolling Instagram/Youtube, spending time with friends, or unwinding in some other way, procrastinating your bedtime in favor of your leisure is not the best idea. Instead, the workshop suggested trying to make space for down time during the day, so you don't feel like you have had no time for yourself at night. Now, I know this is easier said than done, but actually scheduling time for leisure on your todo list or calendar for the day will help make this happen – allowing you to get high quality you-time without necessarily sacrificing sleep. As a mini oxportment this

As a mini experiment, this author asked a few members of the Caltech community to make a "Day in the Life" schedule. This could be on your calendar, a spreadsheet, or any other medium to keep track of everything you do in a day. After looking at the days in the life of students with different sleep schedules, it is in fact possible to sleep early and stay on top of things. Case in point: athletes. You may say that they are forced to have a disciplined schedule because of their training, but I promise there are other self-motivated people who are not athletes and still maintain a healthy social, work and sleep schedule – case in point: Sophia, rix '26, who manages

to sleep by 10 PM (and sleep for 8 hours), while also making time to go on a run and water their plants, apart from doing their sets and maintaining 2 house memberships. So what stops us from trying to do the same? Imagine watching the sun rise without having pulled an all-nighter. Imagine being able to work out and eat breakfast before your first class. And sure, it may take time for any systemic change to occur on a campus like ours, but even a small change like starting our when2meet's at 8 AM instead of 11 AM could slowly pop the idea to people to seize more of the day. At the end of this ar-ticle, I know I might be a little bit of a hypocrite, but a girl can dream. I don't know about you, but I don't want to be sleeping at ungodly hours – but it's hard not to when the fun stuff is all scheduled for then. Which is why, I urge you, try!



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NOVEMBER 1, 2 @ 8PM NOVEMBER 3 @ 3PM RAMO AUDITORIUM THE MUSICAL

THE CALIFORNIA TECH

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Caltech Hall Pond Bridge: Art or Annoyance?

Aaron Chan

Opinion

For the astute eyes on campus, you may have noticed something different about Caltech Hall, specifically the bridge across the pond. But for those who may not know, the bridge going across Caltech Hall Pond has been complete. Hall Pond has been completely covered in gold leaf, or so it seems.

That is because this gold-en glimmer upon the bridge is actually an art installation called This Moment in Time by Lita Albuquerque, and it is one piece of an art exhibition hosted by the Caltech Library, Crossing Over: Art and Science at Caltech, 1920-2020 as part of a greater art event of Getty PST ART.

While This Moment in Time may be striking and hard to miss, unfortunately I don't

think someone would take a first glance at the bridge and think that it is representative of stellar nucleosynthesis. I believe the vast majority will most likely see it as an initially "cool" or "dazzling" piece. Then they'll see it as a minor inconvenience as some pathways, such as the route from Beckman Lawn/Baxter Lecture Hall to East Bridge (a popular one for frosh), are hindered by the art piece. Combine this with the construction around the turtle pond and a little bit of Caltech Hall, and the navigating surrounding area becomes a minor inconvenience.

As stated on Caltech's web-site regarding this installation (and several others): "Caltech Hall Pond Bridge will feature an outdoor art installation, This Amagnetic Time by artist This Moment in Time, by artist Lita Albuquerque. The bridge will be coated in artificial gold leaf in reference to the stellar

nucleosynthesis of gold and other elements theorized at Caltech. The bridge will be inaccessible for pedestrian use from September 9 through De-

cember 15." To put it simply, the bridge across Caltech Hall Pond will be closed essentially until the end of Fall term (December 13th), and many of us will have to wait until after the holidays until we can use it again.

At this moment in time however, it seems some are already fed up with the installation, as seen in a photo taken on September 30, 2024 at around 6:00 pm (shown at right).

(Please do not vandalize or commit property destruction)

So whether you admire its dancing shimmers under the light or wish it was removed already so you can save a minute of extra walking, This Moment in Time is here to stay (again, until December 15th).



Photo Credit: Sascha Goldsmith

Blended Worlds: Art x JPL

Emily Yu News

"Blended Worlds: Experiments In Interplanetary Imagination," an exhibit at the Brand Library & Art Center in Glendale, seeks to elucidate the universe through collaborative works by artists and NASA's Jet Propulsion Laboratory scientists and engineers.

The exhibit examines the dynamics of human relationships with the continuously evolving environment. Featuring a series of interdisciplinary works, "Blended Worlds" challenges visitors to reflect on how deeper connections with nature can cultivate a renewed sense of wonder and curiosity about Earth and the universe.

"The magic of art is that it enhances our experiences and interactions with the world-and in this case, our universe," said Dr. Laurie Leshin, director of JPL and Bren Professor of Geochemistry and Planetary Science at Caltech. "We're honored to work with great artists to bring the wonders of space to our community through this exhibition, which invites us all to be part of a grand journey of exploration and discovery."

Artists include Ada Limón, Annette Lee, Bruce Mau, Dar-

el Carey, David Bowen, Ek-ene Ejioma, Moon Ribas, Raffi Joe Wartanian, Saskia Wilson-Brown, Shane Myrbeck, and Viktoria Modesta.

"Blended Worlds" enables visitors to explore the unienables verse's wonders through mul-tiple senses. "Seismic Percus-sion" by Moon Ribas interprets seismic data from Earth, the Moon, and Mars into a drum score. For the Mars data, Rishi Verma, a data systems architect at JPL, collaborated with Nobuaki Fuji from the Institut de Physique du Globe de Paris, who was involved with NASA's retired InSight lander. Ceri Nunn, a JPL planetary scientist, contributed to the moonquake data.

Another work is David Bow-en's "tele-present wind," which showcases grass stalks linked to tilting devices. The devices move in accordance with wind data from Mars gathered by NASA's Perseverance rover mission. Verma and José Antonio Rodríguez-Manfredi, the principal investigator of the Mars Environmental Dynamics Analyzer (MEDA) system on Perseverance, contributed to making the installation.

"We were looking to create imaginative opportunities for people to connect with each other as they connect with the

awe-inspiring science being conducted today," said David Delgado, a cultural strategist at JPL. "I know this experience has really opened the eyes of everyone collaborating on the project, and we hope it does the same for people who come to see 'Blended Worlds.'

The exhibit is part of "PST ART: Art & Science Collide." Organized by the Getty Foun-dation, PST ART consists of exhibitions, public programs, and other resources that explore the intersections between art and science. The Southern California event aims to foster dialogue on current pressing issues, including climate change, environmental justice, and the future of artificial intelligence. "Blended Worlds" is one of three PST ART projects led by Caltech.

As a campus extension of the exhibit, "Earth Data: The Musical," an original production by Theater Arts at Caltech, aims to portray the experiences of climate scientists, highlight-ing both the challenges and rewards of their essential research. The musical takes place in Caltech's Ramo Auditorium from November 1 to 3. "Blended Worlds" is on view

until January 4.



David Bowen's grass stalks of "tele-present wind" attached to mechanical tilting devices that move in response to Martian wind data. Credit: NASA/JPL-Caltech

Editor's Note: We want to hear your perspective!

We strive to represent every voice in the Caltech Community with fairness, accuracy, and impartiality in our news reporting.

Send submissions or contact the Tech editorial team at

tech@caltech.edu

Submissions are due at 11:59pm on the Saturday before each biweekly Tuesday publication.



NOVEMBER 1, 2 @ 8PM NOVEMBER 3 @ 3PM RAMO AUDITORIUM EARTH DATA / THE MUSICAL The advertising deadline is Friday at noon the week before publication; all advertising should be submitted electronically or as camera ready art, but *The Tech* can also do simple typesetting and arrangement. All advertising inquiries should be directed to the business manager at *tech@caltech.edu*.

The California Tech #15

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

"On campus" is defined by the bounds of the map on <u>caltech.edu/map/campus</u>. The QR code will be hidden somewhere within the pictured area.



<u> CalGuesser #14 – October 8, 2024</u>

Congrats, you found it!!!

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

Ann Mao 🖏, CCE, 10/8/24, 12:18p

cgamboa APhMS 10/8/2

cby, CCE, 10.9.24

Kevin Kan, '93/E&AS, 10/10/2024 11:15pm

dc, CCE, 10/9/24, 12:31p

<<< Last week's winners!



The Caltech Wind Orchestra presents its "Rhapsody" Con-certs on Saturday and Sunday November 9-10 in Ramo Auditorium

October 15, 2024, Pasadena, CA – the Caltech Wind Orchestra, directed by Dr. Glenn D. Price, presents its fall concert, entitled "Rhapsody.'

There will be two concerts on Saturday, November 9th at 8pm and on Sunday, November 10th at 3pm, both in Ramo Auditorium, featuring the same program of music by Gershwin, Badings, and Ito. The featured work is Gershwin's "Rhapsody in Blue", celebrating its 100th anniversary, with special guest piano soloist, Bernadene Blaha. Saturday's concert will be joined by CSU Long Beach Wind Symphony (Jermie Arnold, conductor) and Sunday's concert will be joined by Symphonic Winds of The Pacific (Stephen Rochford, conductor).

Admission is free and no tickets are required. For more information visit pva.caltech. edu or call 626-808-2641.

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The California Tech

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The News-Opinion divide All articles shall be clearly and explicitly labeled as either News or Opinion/Editorial.

All articles shall be clearly and explicitly la-beled 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 in-sert their own personal feelings on the matter; the purpose is to let the facts speak for them-selves. The Tech assumes full responsibility for all content published as News. In contrast, Opinion articles (including Let-ters to the Editor) may be written and sub-mitted 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 com-municate 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**

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 hear-coucheal stand on its own say shall stand on its own.

Quotes and Attribution of Information Facts and quotes that were not collected di-rectly 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 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

Sources for the tech will never be surprised to see their name published. In published content, we shall put our sourc-es' 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 infor-mation that is credible and useful to them. Named sources are more trustworthy than unnamed sources because, by definition, un-named 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 liveli-hood. Even in those cases, it is essential that the Tech Editor-in-Chief knows the identity of the source in question. Otherwise, there can

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Student Faculty Conference (SFC) Improve Caltech's Curriculum, Course Structure, and Academic Policies.

Special Topics: Prerequisites & Core Coursework, Honor Code. Option Topics: ACM & IDS, Ay, BE, Bi, BEM & Ec, ChE, Ch, CNS, CS, EE, GPS, MS & APh, Ma, ME, Ph.

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ASK QUESTIONS HERE





First you take some lowhanging fruit to complain about, and draw some stick figures complaining about it

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 anony-mously, they must provide a reason, and we shall consider it in appropriate circumstanc-es. 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 Hon-or Code is the guiding principle.



History...

October 22, 2018

morklood future, I'm making COS *Sophie's * Tech comi Comic-Drawing Loneliness * Intoria (for Nerds* Finally, toss everything Feel free to use a you've just made. bunch of fillertext We're not gonna pay to poorly compensate you just to print this for your lack of artistic kind of garbage-tier ability. It's harder to content (but we will pay me, of course). tell how bad you are Tired of this abuse of at drawing if you don't draw. power? Send us south good plax.

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