

The California Tech

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TECH@CALTECH.EDU

GRADUATE STUDENTS RESPOND TO HEALTH PLAN CHANGES

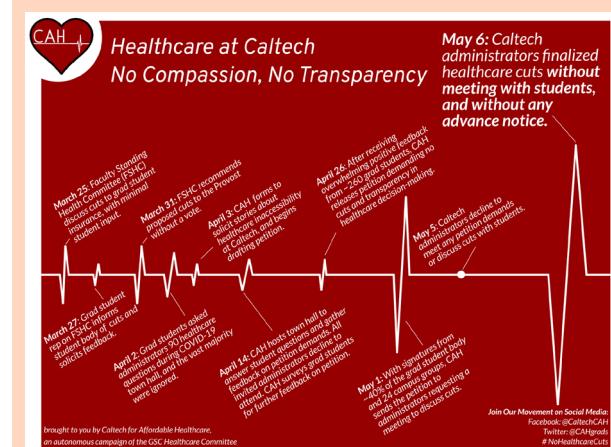
ALEJANDRO LÓPEZ | FEATURED STORY

After much of the Caltech community moved online in response to the ongoing COVID-19 pandemic, graduate students learned of a proposal to cut benefits and increase premiums for the student health insurance plan.

Changes to the health insurance plan are nothing out of the ordinary—Caltech renegotiates its healthcare plan annually. This year, when United-Healthcare StudentResources told the administration they would have to raise premiums again in order to maintain the current level of benefits, the Institute considered whether to cut benefits in order to keep premiums down.

With the COVID-19 pandemic in the forefront of students' collective thoughts, the proposed changes prompted a full on campaign and petition by graduate students to prevent an increase in costs or reduction in benefits. The campaign has brought to light many complaints about Caltech's own administration, citing an alleged lack of student input and lack of transparency during the negotiating process. The administration responded by highlighting their commitment to student well-being and pointing out that the high healthcare costs in the United States are largely beyond their control.

In the end, students won a small victory; mental healthcare coverage would not be cut, but premiums would rise. In the meantime, undergraduate students barely heard anything about the changes and their response was much quieter. But for all



A timeline of events posted by Caltech for Affordable Healthcare, a group opposed to the changes being made to the health plan.

Their Twitter page:
<https://bit.ly/2XZifK8>

LABS AT CALTECH

AUGUST CHEN, RASHI JEEDA, AND NATHAN McALISTER | FEATURED STORY

In February of 2020, first-year Caltech Biology graduate student Rebecca Wipfler went on a “fishing” cruise in the Santa Monica Bay with a group of fellow researchers from Victoria Orphan’s lab. Instead of catching fish, however, the team was collecting deep-ocean microbes – a typical subject of the lab’s research.

Wipfler was planning to use these microbes to test a high-pressure cultivation system she had been adapting to use for microbiology research, but just as she was about to make a breakthrough, her plans were cut short – Caltech had shut down due to the COVID-19 pandemic.

She vividly remembers her last day in the lab: “I was working with my pressure incubator and I was so close to figuring out the solution to this one problem I was having, then was told everything needs to wrap up by tomorrow. Instead of going in and figuring out the problem, I spent the day cleaning up and getting everything ready for shut down, not knowing when I was going to be able to come back.”

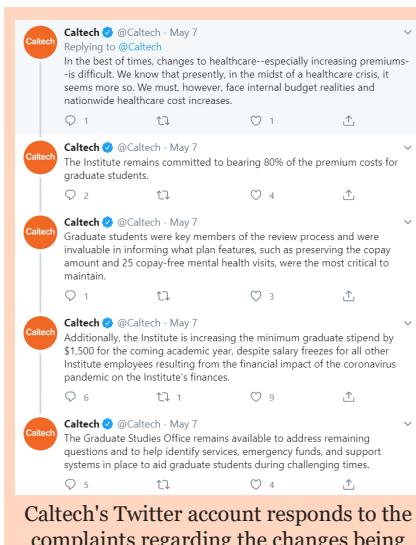
Beginning on March 17, 2020, Wipfler and every other researcher on the Caltech campus was forced to suspend

students and administration, the issue is complex. All sides say they want the best for students, but struggle to agree on what it means.

As part of the regular renegotiation process, Caltech administration presented the potential renewal plans to the Faculty Health Committee in mid-March, coincidentally around the time campus shut down. When the Committee first saw the proposed changes, the committee's undergraduate student representative Elaine Lin (Bi '22, Lloyd) found the proposal “pretty shocking.” She noted that the reaction of much of the committee, including the faculty, was “pretty negative.”

But for graduate students, the issue hit much closer to home. The vast majority of graduate students are enrolled in Caltech’s student health insurance plan, which the Institute heavily subsidizes for them. With their stipends serving as their primary source of income, graduate students rely on the plan to meet many of their healthcare needs. With the health benefits of his peers on the line, the health committee’s graduate representative Steve Markham (Planetary Science), sent an email informing graduate students of the potential changes and asking for feedback. He asked, “Are these planned changes acceptable to you?” and noted that “If most students are happy with the changes, we can allow them to proceed as planned... Otherwise I plan to draft a petition outlining graduate student priorities for our health insurance...” Markham did not respond to requests for comment.

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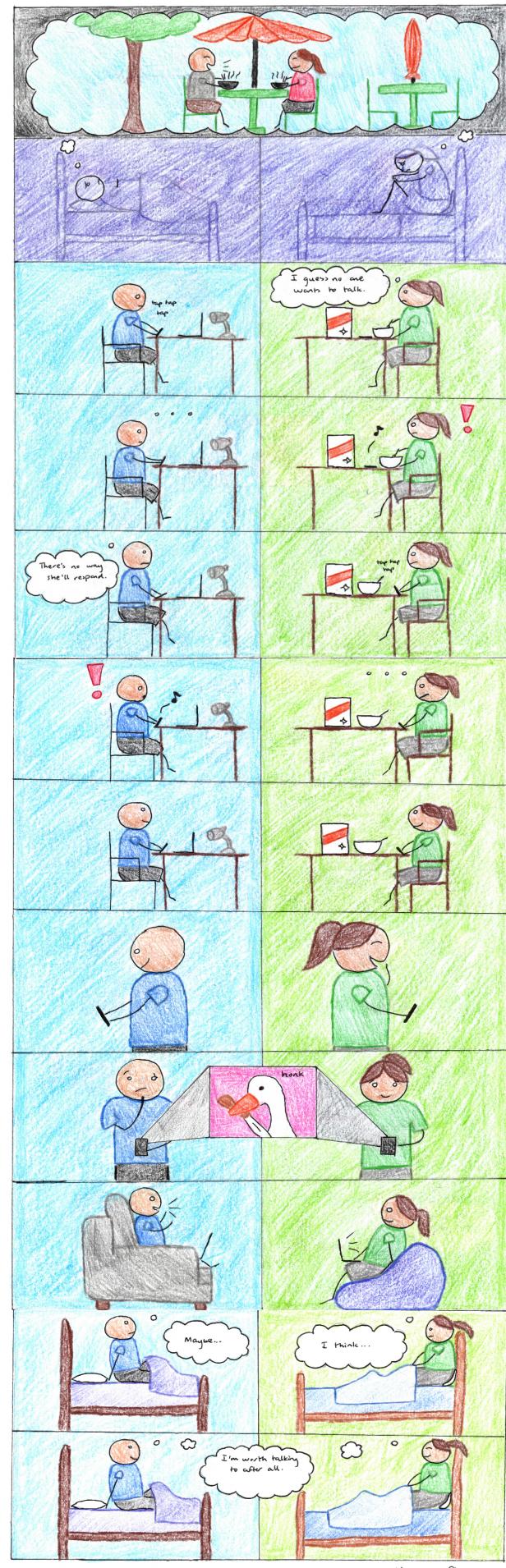
Caltech's Twitter account responds to the complaints regarding the changes being made to the health plan.

The community memo on the subject:

<https://bit.ly/2Xyg2WT>

QUARANTINE

NORMAN CHUNG | COMICS



their work as part of an effort to prevent the spread of COVID-19.

For some, this meant an indefinite hold on experiments that they had dedicated months or years to. For others, recent projects begun in the past few weeks were lost. For all, in-person research and collaboration was suddenly terminated.

A hold on research has meant a hold on work that is funded by billions of dollars. Caltech was awarded over 390 million dollars in contracts and grants in the 2019 fiscal year, while JPL sported a budget of nearly 2.75 billion dollars. In lockdown, many of these contracts are now proving themselves extremely difficult to fulfill. There are over 50 institutes and research centers at Caltech and over 25 laboratories at JPL. More than 60 percent of Caltech students and academic staff are graduate students or professional faculty. Research – which for many has ground to a halt – is at the core of Caltech’s mission.

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ON GEORGE FLOYD AND RACISM IN AMERICA

GABBY DITURI | OPINION

As I sit here writing this, I am crying. Crying for the people living in my society, my country I am supposed to be proud of, who are being murdered for their skin color. This country was founded on racism and oppression of people of color (POC), thus cementing racism as a pillar that our country “is built on.” America was founded based on freedom, but not freedom for everyone. This belief that POC are somehow inferior permeated into the population of the USA and continues to represent an idea many support, including law enforcement and the president.

On May 25th, 2020, George Floyd decided to purchase cigarettes. He went to the local grocery store in Minneapolis to get some. Upon ordering, the clerk suspected his \$20 bill was a fake and called the police (Nelson, George Floyd: how a suspected counterfeit \$20 bill led to protests across the US). George Floyd’s bill was not fake. As the police arrested him, former police officer Derek Chauvin forced his knee on Floyd’s neck. This was not just for a moment- he had his knee on Floyd for “8 minutes and 46 seconds” and “2 minutes and 53 seconds... occurred after Floyd became unresponsive” (Miller, Jacksonville protesters denounce George Floyd death, racism). This does not seem like an accident. Floyd was pleading that he could not breathe, that he did not want to die. Then he became silent and the knee was not removed. Derek Chauvin murdered George Floyd, and J. Alexander Kueng, Tou Thao, and Thomas Lane were accomplices since they did not stop the killing. This is a simple but profound example as to why in America, most cops are corrupt. By not speaking out, Chauvin’s coworkers condoned the murder and thus are guilty and

should be charged accordingly. This was no accident- “the rate at which black Americans are killed by police is more than twice as high as the rate for white Americans” (NPR, A Decade Of Watching Black People Die). George Floyd was not merely killed because of one bad officer; he was killed over the systematic racism that marked him as a target for all police officers.

Early May, white protestors lacking face masks gathered in Indianapolis with AR-guns to protest the lockdown, despite the Governor’s recent mask recommendation. They yelled at the police with rifles slung across their bodies and the police stood motionless. These protestors were granted their First Amendment right of “peaceful” protest because of their skin color, despite toting automatic rifles capable of firing 600 rounds a minute. The murder of George Floyd by Derek Chauvin has similarly started protests all over America, starting in Minneapolis. However, there are a plethora of differences between these two protests. For one, most protestors in Minneapolis lack weapons, including dangerous automatic rifles (Tim Elfrink, Protests, fires rage through the night in Minneapolis). Additionally, they are protesting the wrongful death of a community member, not the closure of restaurants for the safety of the community. Yet despite these nonviolent protests, police are using rubber bullets and tear gas to break them up and suppress these peoples’ freedom to peacefully protest (a right given to all Americans by the Bill of Rights). These officers are horrifically using tear gas to deter protestors in the middle of a global pandemic that affects the respiratory system, showing the extent of their apathy for the public.



A crowd protesting the murder of George Floyd in front of the Tennessee State Capitol on May 30, 2020

Photo by Nick Shockey

As a white person, I have inherent privilege. I am not afraid to jog in the daytime (Ahmaud Arbery) or play loud music (Jordan Davis) or shop at Walmart (John Crawford III) or walk away with my back turned (Laquan McDonald). At a traffic stop, I am worried about getting a ticket, not dying (Walter Scott). Talking about this is not enough. I have white privilege and I will use it to enforce equality. It is not merely enough to want to change the system. Donate to funds supporting Black Lives Matter and the Action Bail Fund. Protest. You have a voice protected by the First Amendment and you need to use it. Sign petitions such as the “Justice for George Floyd” petition to convince the DA to rightfully charge J. Alexander Kueng, Tou Thao, and Thomas Lane. Vote in your local elections, for city counselors, for judges, for people not just “not-racist”, but antiracist. It is your duty to vote for people who will change our corrupt system. Millennials and Gen-Z will be one of the largest groups of voters in the 2020 Election. Your voice matters. Do not be neutral about racism in America. Be angry. Be pissed off. And fight back.

ASCIT BOARD OF DIRECTORS MEETING

MINUTES FOR JUNE 2, 2020. TAKEN BY LC CHEN.

Officers Present: Varun Shanker, Yuying Lin, Arushi Gupta, Irene Chang, Rachel Sun, LC Chen

Guests:

Call to Order: 9:30 pm

PRESIDENT’S REPORT (VARUN):

Submitted formal proposal for P/F policy to Vice Provost, VPSA and deans
Black Lives Matter letter
Ditch days in 5/8 houses

OFFICER’S REPORTS:

V.P. OF ACADEMIC AFFAIRS (ARUSHI):
Student Faculty Lunches
ASCIT Teaching Awards
Black Lives Matter contributions

V.P. OF NON-ACADEMIC AFFAIRS (PROXY):

Working on platform between incoming and current students
Contributing questions for upcoming student survey

DIRECTOR OF OPERATIONS (RACHEL):
Will check up on publications

TREASURER (YUYING):

Continuing to work on reimbursements
Black Lives Matter donation matching

SOCIAL DIRECTOR (IRENE):

Black Lives Matter email, donation matching and contributions grid

SECRETARY (LC):

Updating documents on Donut

If anyone has any questions or concerns about a section of the minutes please email the appropriate officer. We are happy to answer any questions.

MEETING ADJOURNED: 2:58

ASCIT BOARD OF DIRECTORS VPSA MEETING

MINUTES FOR MAY 20, 2020. TAKEN BY LC CHEN.

Officers Present: Varun Shanker, Yuying Lin, Kriti Devasenapathy, Arushi Gupta, Rachel Sun

Guests: LC Chen, Joe Shepherd, Kevin Gilmartin, Tom Mannion, Kavya Sreedhar, Sarah Crucilla, Erika Salzman

Call to Order: 12:00 pm

PRESIDENT’S REPORT (VARUN):

Clarifying spending freeze
NOVID app
Student questions about COVID-19 planning

OFFICER’S REPORTS:

V.P. OF ACADEMIC AFFAIRS (ARUSHI):
Compiling list of classes with missing midterm grades
Working with ARC reps to collect more data
Course advising on Slack
Hosting SFL over Zoom
ASCIT Teaching Awards

V.P. OF NON-ACADEMIC AFFAIRS (KRITI):

Working on student survey
Town hall feedback
Ongoing residential concerns about COVID-19
Alumni coordination with houses

DIRECTOR OF OPERATIONS (RACHEL):

Will check in with publications pending fall decisions
Request for certain links and resources on Donut website

TREASURER (YUYING):

Continuing to review reimbursements

SOCIAL MANAGER (NOT PRESENT):

Nothing to report.

If anyone has any questions or concerns about a section of the minutes please email the appropriate officer. We are happy to answer any questions.

Meeting Adjourned: 1:04

CONGRATULATIONS TO THE 2019 TO 2020 ASCIT TEACHING AWARDS WINNERS!

ARUSHI GUPTA

PROFESSORS

Susanne Hall
Michael Mello
Mykhaylo Tyomkyn
Lu Wang

TEACHING ASSISTANTS

Xenia Boyes
Konrad Pilch
Alvin (Ka Yue) Li
Ethan Ordentlich

Thank you to everyone who took the time to submit a nomination! We can only give out eight awards and there are many more incredible teachers at Caltech, so if your nominee wasn’t recognized here, we highly encourage you to submit a course compliment (linked below). If you want me to send you your nomination for you to also submit to course compliments, let me know!

Please feel free to contact me (arushi.gupta@caltech.edu) if you have any questions!

ASCIT BOARD OF DIRECTORS MEETING MINUTES

MINUTES FOR MAY 15, 2020. TAKEN BY LC CHEN.
Officers Present: Varun Shanker, Yuying Lin, Kriti Devasenapathy, Arushi Gupta
Guests: LC Chen, Jen Yu, Tom Mannion, Kavya Sreedhar
Call to Order: 2:00 pm
PRESIDENT'S REPORT (VARUN): Clarifying spending freeze Senior Month events New tools for contact tracing
OFFICER'S REPORTS: V.P. OF ACADEMIC AFFAIRS (ARUSHI): Proposal for altering timeline Follow up about Town Hall meeting
V.P. OF NON-ACADEMIC AFFAIRS (KIRITI): Thinking about Rotation Discussion for interactions with prefresh
DIRECTOR OF OPERATIONS (NOT PRESENT): Nothing to report.
TREASURER (YUYING): Reviewed reimbursements and transcripts
SOCIAL MANAGER (JEN): Nothing to report.
GUESTS: LC: Yearbook logistics
Tom: Models of Re-occupancy Senior Month/Ditch Day
If anyone has any questions or concerns about a section of the minutes please email the appropriate officer. We are happy to answer any questions.
MEETING ADJOURNED: 2:58

ASCIT REVIEW COMMITTEE MEETING MINUTES

5 April 2020
Present: Alejandro López (Chair), Dawson Beutler (Fl), Tarini Singh (Ru), Danny Wendt (Da), Antonio Caceres (Av), Eric Smith (Bl), Emily Du (Ll), Martin (Pa)
Guests: Kriti Devansenapathy, Varun Shanker, Arushi Gupta, Simon Lequar, Aileen Zhang, Rachel Sun
Call to Order: 17:09 by López
Zhang excitedly waves to Devasenapathy and then leaves
Committee/Board Functions during Third Term
Shanker, Gupta, and Lequar describe the plans the BoD, the ARC, and the BoC have for operating during third term. <i>(See donut for full minutes.)</i>
Smith moves to rule:
Article XIII, Section 4 (d) (i) (5), reads "[The BoC] Arranges for Respondent to review the relevant evidence in person and take notes, with a BoC member present." Under the present circumstances, with the closure of the undergraduate Houses and Caltech's move to online instruction for the Spring 2020 term due to the ongoing COVID-19 pandemic, the above section of the bylaws will be satisfied by the distribution of watermarked evidence to the Respondent using a secure online file sharing service. This ruling will hold for as long as Caltech continues online instruction and the undergraduate Houses remain closed. Upon the reopening of the undergraduate Houses and the return to in-person instruction at Caltech, this ruling will no longer apply.

Wendt Seconds

Vote: 7-0-0

Elections Protest

The Committee Considers the following protest regarding the upcoming Spring 2020 elections:

Most Esteemed Chair of the Review Committee,

Due to the extenuating circumstances presented by the global response to coronavirus (i.e. the evacuation of students from campus, the movement of all learning materials to a virtual platform, the scatter-

ASCIT REVCOMM MEETING MINUTES

23 February 2020

Present: Alejandro López (Chair), Malcolm Tisdale (Ri), Dawson Beutler (Fl), Tarini Singh (Ru), Danny Wendt (Da), Antonio Caceres (Av), Eric Smith (Bl)

Guests: none

Call to Order: 19:12 by López

The Committee Discusses the upcoming Bylaws Amendments to since there appears to be a discrepancy between the summary of Amendment 4 and the text itself.

(See donut for full minutes.)

Smith moves to issue the following public statement:

The Committee noticed that the Board of Directors' proposed amendment 4 replaces the entirety of Art. III, Section 1 with a new version which omits the description of the six general elected offices of the Corporation. Those effects are greater than those described in the summary of the amendments. Considering the proposed amendment 1) to Article VII, Section 8, which amends the section to "include the following details on the turnover of Corporation Offices which were incidentally removed during the passage of the previous BoC Bylaw amendments," the Review Committee requests that the Board examine the proposed amendment 4) to Article III, Section 1.

Wendt Seconds

Vote: 5-0-0

(Chair's Note: Beutler had to leave early and did not vote)

Adjourned: 20:00

Respectfully submitted, Alejandro López

ARC MEETING MINUTES

Minutes 16 May 2020

Present: Arushi, Daniel, Nathan, Schuyler, Megan, Sophie, Mohini, Anjini, Marcos, Alejandro, Erika, Anna

Minutes by Daniel

1) Please fill out the "Survey on Caltech Support Structures." You should have received an email from Lindsey Malcom-Piqueux. The survey takes 5 minutes! Students might not notice the effects of your responses quickly, but administrators rely on these surveys to improve Caltech's infrastructure to help students! #HaveAVoice

2) ARC has created a Course Advice Slack! We plan to use this slack for peer advising this term. Your friendly neighborhood ARC reps will update you on any specifics pertaining to your house.

3) Course Concerns is still on Beta Donut! If you have concerns about online learning in general, please post your concerns on Beta Donut! Thank you to everyone who has already brought your concerns.

ARC TIP OF THE WEEK

ARC website: arc.caltech.edu

ARC Course Compliments:

[https://sites.google.com/site/arc.caltech/
course-compliments](https://sites.google.com/site/arc.caltech/course-compliments)

3) There are no seniors on BoD so it is not urgent that we have elections this spring, and even then, the current President and ARC Chair are heavily involved with the minutiae of the changes being made due to the coronavirus and it is both unfair to their successors and difficult for the students they represent if they have to transition in the middle.

Devasenapathy and Shanker argue for the protest.

(See donut minutes for arguments, questions, and discussion)

Smith moves to rule:

Due to the exceptional circumstances presented by the COVID-19 pandemic, Caltech's closure of the undergraduate Houses, and the move to online instruction for the Spring 2020 term, the Review Committee finds that the elections scheduled for April 20th, 2020 for the offices of ASCIT President, ASCIT Vice President for Academic Affairs, ASCIT Director of Operations, ASCIT Treasurer, and ASCIT Director of Social Activities are unfair to students. Accordingly, under Article VII, Section 7, the Committee finds these elections invalid and reschedules them to October 12. Signups for these elections will be opened on the Monday prior to the end of Rotation (September 28th) and closed the following Friday (October 2). Consequently, appointments made by the Board of Directors under article VII section 11, the adoption of a budget required by Article IX section 2 and Article IV section 2 (a), and the expiration of resolutions concerning staff positions given in Article IV section 4 are delayed until the new Board of Directors is installed following the election.

Wendt Seconds

Vote: 6-0-0

(Chair's Note: Caceres had to leave early and did not vote)

Adjourned: 19:25

Respectfully submitted, Alejandro López

GRADUATE STUDENTS RESPOND TO HEALTH PLAN CHANGES

ALEJANDRO LÓPEZ | FEATURED STORY

| FROM PAGE 1 |

The response from graduate students was overwhelmingly negative, and an organized response began to take shape. "It was pretty spontaneous," noted first year graduate student Phelan Yu (Ph). The group Yu joined calls itself Caltech for Affordable Healthcare (CAH) and has adopted a heart-shaped logo. Markham let the Faculty Health Committee know about the negative response from graduate students, and in response, the committee did recommend that Caltech not cut mental health benefits.

At the same time, the committee was also attending to issues related to the COVID-19 pandemic, and Professor Lester, the chair, presented an update to the Faculty Board on April 6th. At that meeting, he also mentioned the potential changes to the health plan and his committee's recommendation on mental health benefits. According to Faculty Chair Professor Maria Spiropulu, at that point the Faculty Board became aware of the potential health insurance changes, and she and other faculty became very interested in understanding the issue. "Of course the faculty want their students to be healthy!" she noted.

The pandemic also served to increase the saliency of the healthcare changes into the spotlight for graduate students themselves. The Graduate Student Council and Caltech administration were already organizing a virtual town hall to answer student questions on the COVID-19 crisis, and students took the opportunity to raise the health insurance issue, which they had previous heard about from Steve Markham's email. But some felt the town hall left too many questions unanswered.

When asked about the possibility of a second town hall specifically on health insurance issues, Vice President of Student Affairs and Professor of Aeronautics and Mechanical Engineering Joseph Shepherd acknowledged that "folks are very concerned about the healthcare" and promised to do the "best we can" but declined to commit to a second town hall. "When we have the ability to say something of substance, we can come back and talk about that."

CAH and the GSC's newly formed Health Committee went ahead and organized a town hall anyway. They invited eight administrators, including Shepherd and Graduate Studies Dean Professor Doug Rees. They also invited Professor Henry Lester, the Chair of the Faculty Health Committee. Only Dr. John Tsai, Medical Director of Health Services, and Kevin Lee, Human Resources Student Benefits Specialist agreed to attend, but "later withdrew after Dean Rees declined to participate on behalf of all student affairs personnel," according to Yu. An anonymous poster on the Facebook page Caltech Confession observed that "the latter [town hall] was way more professional and transparent...I finally felt like I understood our healthcare situation. The student panelists answered enthusiastically each and every question, and let students in the audience speak for themselves if they wanted to." During the first town hall, the audience could not ask questions directly, and instead GSC Chair Camilla Kjeldbjerg (ChE) read other students' questions to administrators.

The contrast between town halls cemented a growing feeling among graduate students that they were not being heard. CAH drafted a petition that noted, among other complaints that "during the [first] town hall, Caltech administrators ignored the majority of the healthcare-related questions, including several heartbreaking accounts describing how these insurance cuts will severely hurt students."

That sentiment was strong enough that 539 graduate students (around half the graduate student body) had signed CAH's petition at press time, along with 210 "Caltech-Affiliated supporters," mostly a mix of postdocs, undergraduates, alumni, and a few faculty members. The petition is also backed by a number of student organizations, including the GSC

"Like it or not, graduate students would see an increase in health insurance premiums and a reduction in benefits."

Board of Directors and the GSC's Advocacy, Diversity, and Healthcare Committees, Black Scientists and Engineers of Caltech, the Caltech Feminist Club, and a number of department-specific student advocacy groups. With this backing, on May 1st, the campaign emailed Rees, Shepherd, Provost David Tirrell, and President Thomas Rosenbaum asking for their plans to address the petition's demands.

In the meantime, Caltech administration finalized their decision throughout April. In an email to graduate students on May 6, Rees confirmed that, like it or not, graduate students would see an increase in health insurance premiums and a reduction in benefits. Specifically, he noted:

-The annual premium cost for graduate students will be \$630. This represents an increase of \$84 from the premium cost of \$546 for graduate students in the 2019-20 academic year.

-The annual deductible will increase from \$250 to \$500; and

-The out of pocket maximum will increase from \$1,500 to \$2,000."

The total premium costs is increasing by \$412 to \$3,138, but the Institute will continue to subsidize 80%

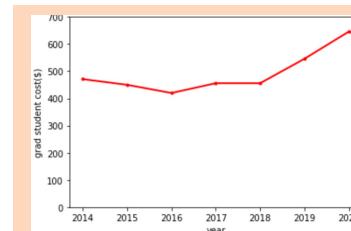
of the premium for graduate students. Administration has pointed out the graduate students are also benefitting from a \$1500 increase in their stipend, in spite of a freeze on salaries for faculty and staff. Students have pushed back by saying that the stipend increase was originally intended to cover rising living expenses in Pasadena. Administrators also strongly emphasized the inevitability of the premium increases as a reflection of rising healthcare costs in the United States in general.

Dean Rees pointed out that "having no alterations was not an option given the rapidly escalating costs of health care in a time of financial constraints for the Institute," referring to the effects of the pandemic-induced economic downturn on Caltech's finances. As both graduate student Steve Markham and Dean Rees pointed out in emails to students, United Healthcare has increased premiums for Caltech because use of benefits has risen in the past couple of years. The reality of insurance means that providers will charge policyholders more for using their coverage in order to keep making money.

Caltech switched providers in 2014, which helped keep premium costs down. But starting in 2018, premiums increased by about 20%. Switching providers again is not an option this year, but may provide a way to keep premiums in check by providing a sort of "reset." In any case, there is little the Institute alone can do about the challenges posed by the American healthcare system in the long-term. "Until the United States has a single-payer healthcare system, and a great simplification [in the bureaucracy of the system], we will continue to struggle with this every year," Shepherd told students during the first town hall.

Despite CAH's complaints on student involvement, Professor Rees noted in an email that "it is also important to emphasize that throughout the process to review the student health plan, members of the graduate student community have been actively engaged in the discussion." He pointed to the graduate student involvement on the faculty health committee, noting that "for more than a decade, graduate student participation on this committee has been important for shaping changes to the health insurance plan. In the present situation, the graduate student members clearly and forcefully advocated their positions—as they are expected to do in their role—and the perspective they brought to the discussion was invaluable in informing what plan features, such as preserving the copay amount and 25 copay-free mental health visits."

For CAH, this is not enough. They point out that the committee plays merely an advisory role and that ultimately professional administrators, not



The cost of health insurance for Caltech's graduate students, 2014 to 2020.
In 2018, the premium increased by about 20%.

students or the Faculty Health Committee make the final on the health plan behind closed doors. They call for the committee to be required to vote to approve health plan changes, for the committee to inform the student body of the changes and to publicize their minutes. They also call for the GSC healthcare committee to be allowed to vote on potential changes. The student input provided this year through the Faculty Health Committee did lead directly to the decision to avoid cutting mental health benefits, something Rees heavily emphasized, but administration made no concrete promises to increase student input in the future.

The frustrations faced by graduate students over the alleged lack of transparency and student input mirrors widespread undergraduate sentiments about administration's perceived disregard for student opinion in recent decades. But the response amongst undergraduates to the healthcare cost increases has been relatively quiet. On one hand, only about 200-300 undergraduates are typically enrolled in Caltech's Health Plan, with most of the rest using their family's health insurance. However, for those that are enrolled, because Caltech does not subsidize the plan, they will see the full \$412 increase in premiums. Still, the issue has not been particularly salient across the undergraduate student body, and students face many other challenges because of the pandemic.

On the other hand, undergraduates have been much less aware of the changes from the beginning. Unlike her graduate counterpart, the undergraduate Faculty Health Committee representative Elaine Lin did not inform the undergraduates directly about the potential changes when she first heard about them in March. She said she and ASCIT President Varun Shanker (BE '21, Fleming), who attended the committee meeting with special permission to better understand COVID-19 issues, decided together to not tell their constituents about the potential changes. "We felt that at the time...we didn't need to immediately inform the undergraduate population because there are significantly less undergrads enrolled in the health plan... and felt it would be bad timing with everything else going on," Lin explained.

"Ultimately, professional administrators, not students or the Faculty Health Committee make the final on the health plan behind closed doors."

Instead, undergraduates got wind of the potential changes from graduate students, largely through social media. If Steve Markham had not chosen to email graduate students it is likely no students, other than the few student government members invited the Faculty Health Committee or Faculty Board Meetings would have known about the health plan changes before they were finalized in May. Lin says she does share some of the graduate students' frustrations "I would like there to be more representation, but I don't know what that would achieve...At the end of the day it's still admin...making the final decision." Undergraduate student government has also been incredibly busy this term with other pandemic-related issues, including ones undergraduates have been much more vocal about.

Administrators did finally meet with CAH organizers in mid-May, and agreed to hold another town hall specifically on health insurance. CAH expressed that "We're disappointed that this town hall comes only after the health plan for next year was announced as 'finalized', but we believe that this event is still an opportunity for students to gather more information about Caltech's healthcare decision process and express their views on the past and future of graduate healthcare." For both students and administrators, health insurance remains a long term issue, and CAH has vowed to continue pushing for both short and long term changes.

LABS AT CALTECH

AUGUST CHEN, RASHI JEEDA, AND
NATHAN McALISTER | FEATURED STORY

| FROM PAGE 1 |

Members of the Caltech community, from undergraduates to graduate students to postdocs to professors, now find themselves in an unprecedented situation – unable to perform in-person lab work and unsure of what the future might hold.

Amidst the chaos, Caltech administration has put together the Committee on Reconstituting On-Campus Research, chaired by Vice Provost Kaushik Bhattacharya, to initiate plans for returning to labs. As stated in a campus-wide town hall, the group has been meeting several times a week to craft solutions, and principles and guidelines are being put into place. While a memo from the administration was released to the Caltech community on Tuesday announcing that the Institute now complies with city and state health guidelines, no hard re-entry process or date has been announced. The issue of return is complicated by the varying needs of research groups in addition to the uncertainty of the virus: precautions discussed range from bi-weekly testing to determining which rooms are connected by adequate airflow systems.

Most recently, several labs have been told that they can expect to return within the next few weeks. This does not mean researchers can just pick up where they left off. Labs must coordinate schedules for coming in, with a plan that allocates 400 square feet of space per person. However, something as simple as a 400 square foot rule may not provide a holistic solution; many researchers may struggle to consolidate all of their equipment into such a small space. As Wipfler notes, “It’s complicated because you might need three different types of instruments, and they’re in three different rooms, and then all of a sudden you’ve taken over the entire lab and no one else can use it that day.”

As the administration puts forward its efforts, the future lies cloaked in uncertainty. As President Thomas F. Rosenbaum and Provost David A. Tirrell noted in a memo on May 22nd to the Caltech community, “This will continue to be a fluid situation and we expect our policies and processes to evolve as circumstances change.”

While the Caltech community waits for clarity, concerns mount.

Fayth Tan is a second-year graduate student in Biology working in Professor Lea Goentoro’s lab, which studies the metabolic pathways that can lead to limb regeneration in animals. The lockdown process has been particularly difficult for them due to the careful care required for their unconventional model organisms, which include jellyfish and cavefish. Tan ended her experiments before the official shutdown occurred, as it was already becoming difficult to procure the necessary reagents.

For the Goentoro lab, a principal challenge after it closed was effectively communicating animal care procedures to designated essential workers. Each researcher typically comes to have a very specific way of dealing with their animals.

“The jellyfish people in my lab can tell me when a jellyfish looks ‘unhealthy’, and to me it just looks like a jellyfish,” says Tan. “You’ve got to be able to tell people that if an animal looks like this, this is how it’s communicating that it’s stressed or unhealthy, and that’s super difficult to do in a Word document.”

The difficulty of procuring their organisms, such as the cavefish that were specially sent to them from an institute in Kansas City, presents another set of worries: “Only one fish has gotten sick. If anything happened to that colony, that would be very rough to get back. We were very paranoid when that one fish got sick...we can’t just replace them.”

However, though animals are being maintained by essential workers, any research progress has ground to a halt. Tan was in the process of publishing a paper, but is unable to conduct additional ex-

periments to address reviewer comments. Any lines of inquiry along her expertise of experimental, wet-lab biology is near impossible: Tan says large-scale animal experimentation is currently unfeasible as animal facilities are high touch, shared spaces and there are already shortages in personal protective equipment (PPE).

Additionally, she says, “The campus being closed makes it very clear that a lot of the labor going into experiments isn’t our own. If you start something, someone else will need to be there more to take care of it – I don’t know if I can justify that right now.”

Graduate students are not the only ones who find themselves in a precarious situation. Seven Caltech postdoctoral researchers composed a letter that ran in Science Magazine on May 28, 2020, describing the challenges postdocs face due to lockdown.

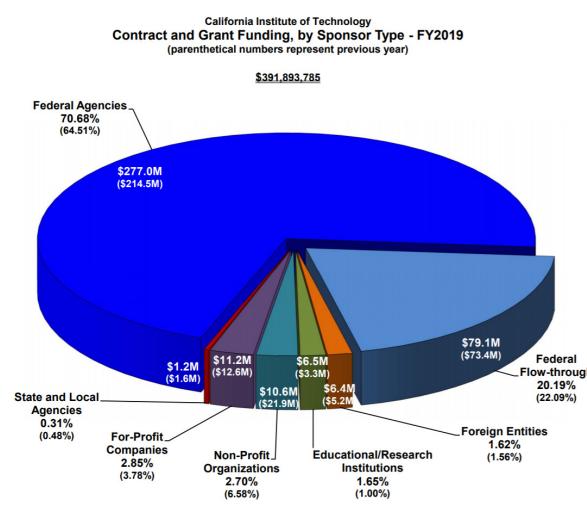
“Postdocs receive little institutional support in comparison to undergraduates, graduate students, and faculty,” they write. Postdocs, across institutions, have limited access to campus resources that others in a community might be relying on as a result of lab closures, such as affordable health care, career counseling, or union representation. “Visas are expiring with little clarity about the prospect of extensions, and continued funding has become uncertain, jeopardizing the time-sensitive research that postdocs are conducting during their short contracts,” the letter continues.

Co-chair of the Caltech Postdoc Association, Amir Behbahani, believes that postdocs at Caltech are in a better situation than many at other institutions due to the campus’ small size and the general support attitude that exists in the community. He notes, “Being able to benefit from Caltech’s world-class environment and working with top scientists in various fields is definitely a major contributing factor in anyone’s decision-making process for the next step of their career.”

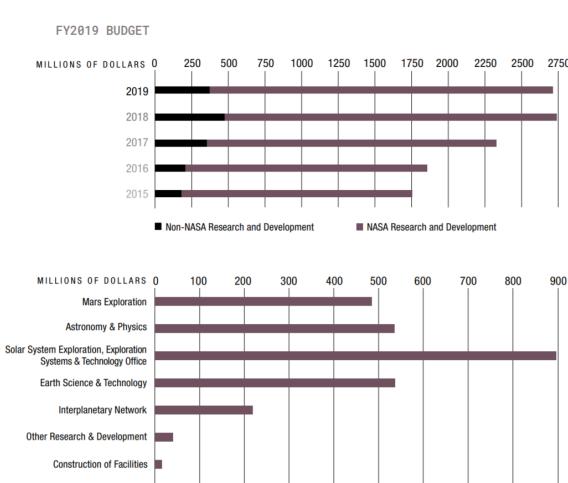
However, Behbahani thinks much still needs to be done for all postdoc communities and is trying to raise awareness for the issues they face. An indefinite halt in research means that postdocs are seeing a parallel halt in the advancement of their careers, with no guarantees about contracts or funding. COVID-19 will have an impact on completing these contracts and attaining these funds.

George Mobbs, a postdoc in Chemistry at the Hoelz Laboratory, notes “It is fair to assume that there will be less money going forward, but I’m not sure.” While the state of Dr. Mobbs’s funding may be uncertain, the impact on research certainly is not. Mobbs has said that, “Me personally, I have had a complete shift in focus...I haven’t worked on previous lines of inquiry in the last 3 months.”

Michael Elowitz, Professor of Biology, Bioengineering and Applied Physics, stresses, “We are incredibly fortunate to still be able to work and interact online without facing the kind of sudden, catastrophic unemployment and other crises that so many of our neighbors are dealing with right now.” However, while his group has used this time to focus on computational work and reading, he does acknowledge, “Interrupting experiments at critical points is incredibly frustrating”.



Caltech funding and JPL budget distribution from the Caltech Research Administration 2019 FY Report and the 2019 JPL Annual Report, respectively.



Similarly, Monica Kohler, Research Professor of Mechanical and Civil Engineering and Seismology, notes “It’s been a lot more difficult to schedule and organize meetings in the lab group, and it’s been impossible to do any field work in the greater LA area.”

Many professors are struggling to deal with the combined stresses of being on COVID-19 related planning committees, teaching classes, organizing their own researchers, sitting on candidacy and defense panels, and managing their day-to-day lives at home.

Justin Bois, a teaching professor in the Department of Biology and Bioengineering and Undergraduate Bioengineering Option Rep, has found it particularly difficult to transition the nuances of a lab class to an online environment. He says, “Ultimately, if you’re going to learn how to do lab work, you have to touch and hold a pipette. You can watch somebody...but until you feel that resistance on your thumb you still have no idea how to operate a pipette. We knew that that was just a lost cause.”

One professor, who would like to stay anonymous, has remarked: “I have been at Caltech for many decades. This situation is completely unprecedented and there is nothing I encountered before in my academic life that can be compared with it. It presents unique challenges as, for example, when we are all trying to navigate and adjust in the world of remote teaching.”

Not only has the COVID-19 lockdown greatly hampered the academic productivity of the Caltech Community, it may also be posing a great detriment to its mental health. Linda Krippner of the Caltech Staff and Faculty Consultation Center describes the burden of stress added to many people’s lives in this time of social distancing as an instance of the allostatic load, the impact of chronic exposure to elevated stress. “We’re in a chronic level of activation with a continual cycle of change and a threat looming that we can’t see,” she says. “We can’t take active steps to eliminate it; all we can do is just try to avoid it.”

During this situation, says Krippner, “We may have this expectation that we’re going to be super generative but we’re ignoring that our energy is being drained by this constant stressor...people are feeling tired and fatigued.”

For Fayth Tan, research may need to take a much different form in the foreseeable future. The comments for the paper she was hoping to publish cannot be experimentally addressed before reopening – “I don’t know how long the editor of a journal is going to wait.”

She has even considered changing her focus entirely: “Right now I’m in the midst of seeing whether I could take on a computational project even though I came here as an experimentalist, and very thoroughly as a very squishy, wet-lab biologist,” she says.

With the date for lab return up in the air, the future looks bleak for her mouse experiments, which would require a reliable 10-week stretch of work time. Plans for a gradual reopening are in the works – “But,” she says, “I have a feeling this is going to go on for a while and reopening doesn’t guarantee I’ll be able to do anything I want to do.”

CANDIDATE STATEMENTS FOR SENIOR CLASS CO-PRESIDENTS (4 TEAMS)

LC Chen, Krystyna Maruszko, and Liana Merk

TLDR: Hi! We are Krystyna, LC, and Liana and we are running for Senior Co-Presidents. Our goal is to streamline things on our end to make your senior year as stress-free as possible! Please read below for our proposed ideas or message us if you have questions.

Hello seniors, congrats on making it to our final year! We, LC Chen, Krystyna Maruszko, and Liana Merk, are excited to be running for Senior Co-Presidents. Over the past few years, we have looked up to the seniors and now it's our time to shine! Our combined experiences on ASCIT, PA committees, and in the Health Ad program make us a great candidate to coordinate a fantastic final year for the Class of 2021. We will ensure that the variety of senior activities such as Ditch Day, Senior Trip, and graduation are enjoyable and memorable for the rest of our lives.

We plan to facilitate a smooth Ditch Day process so that everyone can spend maximum effort on designing and creating stacks and not administrivia. We will start on determining room registrations, safety approvals, and funding allocations early so that you can have extra time making your stacks as fun as possible. Having heard that communication can be spotty, we plan to clarify safety approvals and send timely reminders on important deadlines so that you don't have to worry about ever missing something important. We know that we may not represent all perspectives among our class; thus, we will ask for and implement feedback from Senior Reps and the class as whole. We also plan to host weekly Office Hours so that we can hear your ideas

and opinions and put them into action.

Besides Ditch Day, we have many things to look forward to! Our group intends to facilitate memorable events for those of us who are unaffiliated or will not be participating in Ditch Day. To build on last year's Senior Trip ranking system, by incorporating a weighting of preferences, the voting process will be more representative of everyone's preferences. We will work tirelessly to maximize everyone's happiness while minimizing financial, physical, and other concerns that may prevent you from attending. Besides working towards more funding for Senior Trip, we plan on working with the Caltech Fund to fundraise an ample amount for our class's choice of senior gift.

The three of us have had a variety of roles that give us the experience and expertise to execute all responsibilities associated with this job. Krystyna has worked with Tom through Fleming and SURF events as well as been a Health Ad in Fleming and Bechtel. Her organization and enthusiasm to talk to wide swaths of the student class will bring in as many ideas into the planning process as possible. Liana has organized events as part of Page's Soc Team and the Alumni Association Committee, been a PA for Page and Bechtel, and has experience working with the Event's Office and Felicia. LC is the current ASCIT Secretary, Avery House Chancellor, and Hacktech Finance Organizer and has experience on the Caltech Y Excomm and Big T Yearbook Committee, exemplifying her organizational talents and abilities to bring ideas to life. We promise that our role as Co-Presidents will be at the forefront of our to-do list. Since we have all worked together and



have been friends since freshman year, our trio is the perfect size to effectively collaborate with each other and with all of you in an efficient manner so that your senior year experience is the best it can be.

We live in a stressful and turbulent world: worries about classes are coupled with worries about what the future may entail and many others. The ultimate goal of our term as Co-Presidents is to ensure that we lessen your worries and burdens so that you can get back to planning a great senior year and doing what you love. And remember that our doors (or well, actually our Zoom meeting IDs for now) will always be open in case you want to convey concerns (which we can pass on to ASCIT and admin), get mental/emotional support, or if you just feel lonely and want someone to talk to. Feel free to reach out to us via email (kmarusz@caltech.edu, lmerk@caltech.edu, and lchen2@caltech.edu) and we'd be happy to talk to you about our plans as well as any concerns you have. We wish you the best of luck for finals as well as the summer and look forward to seeing you all soon!

Sam Owen, Lily Kitagawa, Andrew Chan, Vidhya Dev, Eric Han, Rachel Sun, and Ari Rosner

Hey Class of 2021!

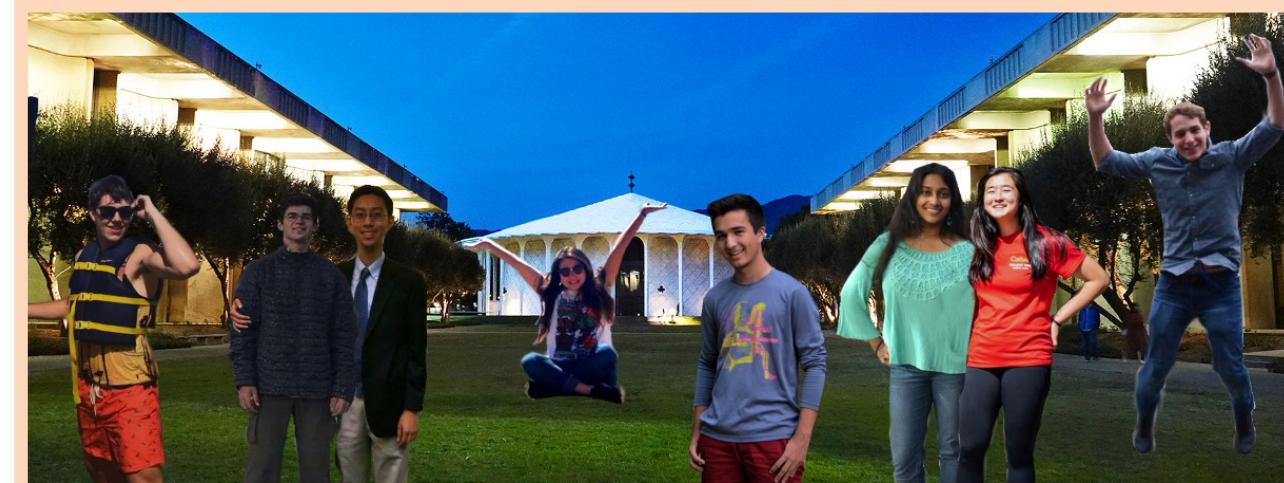
We are a group of passionate seniors with diverse backgrounds and well-established working relationships with admin and we believe that we can do the best job as your senior class co-presidents. We know every member of the class of 2021 will be busy during our senior year and having 8 members will allow us to better serve the senior class by expanding our individual roles and providing an attention to detail unachievable by a smaller group.

Our platform is founded on accountability, efficiency, and ambition:

- We will start organizing and determining the logistics of all Ditch Day related activities early while streamlining bureaucratic processes. This will ensure that all stacks get the room reservations, equipment, and funding they need to run great stacks for underclassmen. Using our diverse group of co-presidents, we will additionally organize several effective and fun all-campus fake stacks.

- One of our rolls as co-presidents would be organizing the senior class trip and gift, hosting the senior dinner, and contributing to graduation. To actualize the potential of these events and activities we will begin planning as early as possible. This will allow your suggestions to be smoothly incorporated and will make these events unforgettable.

- We plan to expand our roles to provide an enjoyable senior year for our class by helping with other senior year traditions. An example of this is with senior photos: to help everyone find photographers, we will help facilitate contact between student photographers and graduating seniors.



- Because of the current pandemic, the job market has become shakier in both industry and academia. Nonetheless, we want to make sure that every senior gets the jobs and positions they want by providing connections, referrals, and mentorship. To help grad school applicants, we will reach out to professors and grad students to provide mentorship on CVs, essays, and interviews(placeholder). To help seniors focusing on industry, we will work closely with the Career Center to provide improved resume help, interview preparation, and industry connections.

- We plan on adding more senior events such as a senior breakfast, hike, and movie night. We're also excited to listen to the rest of our class and advocate for events that you would like! Our goal is making your senior year as fun as possible by listening, learning, and executing.

- We will consistently poll the senior class about every decision we make, ensuring that every voice is heard. We are here to represent you and do so transparently. We will keep you updated every step of the way, and advocate for all your opinions in any way we can.

- As candidates we are ideally suited to the role of senior class presidents:

- Because of our diversity we understand that the needs of each house are different, and we want to do our best to support everyone. To this end, our group includes representatives from a wide range of houses, and we will ensure that we stay in touch with Senior Reps from all houses.

- Our well-established relationships with administrators such as Tom Mannion, Sue Chiarchiaro, and Felicia Hunt will allow us to best serve your interests to ask for what you want and help seniors expand on Caltech traditions.

- Members of our group have been leaders and run events with ASCIT, Caltech Admissions, various clubs on campus, the Caltech Y, and within our houses. Our experience will allow us to organize senior events successfully and efficiently.

- We want our class to have the best senior year experience and we believe that we are the best candidates to make that happen! Feel free to email, Facebook message, Instagram DM, or send a smoke signal out to any one of us; we'd love to talk with you, discuss your ideas, and answer your questions.

Cindy Cao and Amy Wang

Hey Class of 2021! Congrats on making it this far; now it's time to make the most of the time we have left and have a killer senior year! We, Amy Wang and Cindy Cao, want to make that happen by becoming your Senior Class Co-Presidents. Being a Lloydie and Averite who have friends in all the other houses, we believe that we can make Ditch Day, senior trip, and the senior gift great successes that take everyone's opinions and interests into consideration. Also, as two ChemE's, we are sure to get a great *reaction* from the events we implement!

We want to serve together as your Senior Class Co-Presidents because we believe that our experiences complement each others' to make us well-rounded representatives of our class's interests and receptive to everyone's input. Cindy has experienced the process of planning large scale events on campus throughout the past three years in various leadership roles on the Caltech Science Olympiad Planning Team, from applying for funding to working closely with admin. Amy has also met with administration for planning traditional house events

and prank approvals, and she has gained leadership experience and organizational skills through her time on house excomm and the ARC. Furthermore, she has demonstrated creativity and initiation through her work with admissions and Caltech vlogs. Overall, we are also both organized people and like to get stuff done as efficiently as possible, so our duties as Senior Class Co-President will be no exception.

As part of our outlook for Ditch Day, we want to ensure early organization to have smooth sign-ups, approvals, and room registrations; we will also communicate clearly to the rest of the senior class throughout the process. We both have had fantastic experiences with Ditch Day and we want to play our part in carrying on this Caltech tradition in the best ways possible.

As for the senior trip, I think we can all agree that we deserve an incredible experience where we can both relax and celebrate. For this and the senior gift, we will gather input from as much of the senior class as possible and add transparency to the decision process and discussion with admin. We believe



that memories not only should be made, but that they should be captured, so we have some ideas for how photography opportunities may be incorporated into these end-of-year aspects.

Whether or not we need to participate in online learning the next academic year, we will do our best to ensure that the senior activities we coordinate combine important aspects of high-participation, excitement, and commemoration of our years at Caltech.

Please reach out to us if you have any questions, and thank you for your votes! :)

Ashima Agarwal and Alessandra Mondello

Hi Class of 2021!

Congrats on (almost) finishing junior year! After the sucky circumstances of the past few months, we deserve a great senior year, and we, Ashima Agarwal and Alessandra Mondello, hope we can be part of making it the best one yet as Senior Class Co-Presidents. Together, we have diverse perspectives and experience which help us make a great team. Ashima is the director for Out of Context and is a member of the Admissions Fellows team, giving her the skill set to plan large events like PFE and Love Sucks. Alessandra is co-captain of the ChE Car Team and newly named president of AIChE, giving her the knowledge to organize long term projects. In combination with this experience, both of us have been on our house (Ruddock and Fleming) social teams and have had extensive and positive interactions with administrators like Sue, Felicia, and Tom. We believe that this experience in conjunction with our commitment makes us very well prepared to make Ditch Day, the Senior Trip, and the Senior dinner run smoothly for everyone, and we are really excited to do it!

We want to make sure that Ditch Day planning is as seamless for you all as possible. This means getting room picks and safety approvals done early and fairly. But for so many of us, Ditch Day is a celebration of our House/House culture, and so it is even more important to us that those traditions are preserved during the stack approval process. That being said, fighting to make sure rappelling is approved is one of our top priorities. In addition, we would like to plan more campus-wide fake stacks to keep Caltech tradition alive.

Besides Ditch Day, another main responsibility of the co-presidents is the senior trip. Our focus is to maintain transparent communication with administration and the senior class. We want to get a clear picture of what the class wants as early as possible to effectively negotiate with administration. To do this, we will be open to ideas from everyone about possible destinations, and will utilize Ranked Pairs to vote on it as a class. We also hope to make senior trip and senior dinner affordable and inclusive. Everyone has worked so hard to get here, so everyone should get to celebrate.

Lastly, there are 375 days until graduation (not that anyone's counting), and we want to do everything we can to make sure that it is fun and mem-



orable. Even though there are 200-something of us graduating this year (hopefully!), we want the event to be personal to each of you. We plan to offer photo shoot sessions for all the seniors and their friends and families, as well as making sure there are enough photographers (professional and student) to cover the actual event.

We acknowledge this is a time of uncertainty, and we want to remain accessible to you all remotely, even if we can't be in person. Please let us know if you have any questions, comments, or concerns about our ideas, and do not hesitate to reach out! We are available through Zoom, e-mail (aagarwa3@caltech.edu, amondell@caltech.edu), or Messenger. We would be so honored to serve as your co-presidents for this upcoming year. Let's make it a great one!

THE PRESIDENT'S PROCLAMATION

BILGE GUNOREN | CURRENT EVENTS

Big disasters sometimes bring out the best in people. In some ways, the COVID-19 pandemic we are currently in brought our community together, but in other ways, it also led to rampant racism, especially against people from China or Asia in general. The Asian-American community suffered from the unfair association of the virus with their home country. Not only Asian people became targets of hate speech online, they were also targeted by politicians, with Donald Trump even calling it the "Chinese Virus". While the recent proclamation made by the U.S. president doesn't seem related to this pandemic, following the events of the last few months, it certainly comes at a time where the Chinese-American community needs a helping hand. And instead of offering it, it is a slap on the wrist.

On May 29, 2020, the President issued a proclamation suspending entry into the United States of any graduate or post-doctoral researcher that either is currently receiving or has in the past received funding or was employed on behalf of an entity in the PRC that implements or supports PRC's 'military-civil fusion strategy'. This term means any action by the PRC to acquire foreign technologies to advance its military. To be clear, this proclamation exempts any undergraduate students on F or J visa, and also any student who doesn't have any connection with an entity in PRC that is believed to support this military-civil fusion strategy.

I wish I could explain this situation in more clear terms, but looking at the proclamation, this is honestly the best I can do. The description of who would be affected by the proclamation is very vague. What "entities" exactly is this proclamation talking about? What kind of an employment would implicate a student and prevent them from receiving entry into the U.S.? Can a stark line be drawn between non-military and military research, or would there be a gray area? I am asking these questions because in such a critical situation where thousands of students could be affected, we need these answers. The vague statements open the door to the justification of extreme action in cases where it shouldn't be done, and makes it easy to find a reason to ban a student that might have very little to nothing to do with Chinese military. It is impossible to control for every single entity you've been associated with, thanks to the complexities of today's environment, and with these vague statements any one of these could be used against you at a moment's notice.

I also want to raise these concerns, not for those students in China who might be unfairly implicated by this proclamation, but for everyone else as well. To other international students: You might not be from China, but what's stopping the government from adding more countries to this proclamation, which might eventually implicate you? I'm an international student from Turkey, a country that has



From the White House's Flickr page, Public Domain

definitely been implicated by anti-American sentiments. My father retired from Turkish military. Let's imagine I was a graduate student—would I have been implicated in this proclamation if it included Turkey, even though I personally don't have anything to do with the military? To American citizens: You might think this doesn't affect you in any way, but think about all the research potential going to waste because of a proclamation like this. Think about your friends, your neighbors who would be affected by this situation. Think about the lives of those people whose dreams are crushed because of an unfair ban like this.

At a time where the governments are trying to turn us against each other, trying to make enemies out of us due to our nationality or our race, we need to stand in solidarity with each other.

MIKE BROWN'S UNIQUE WORLD(S)

RASHI JEEDA | PROFILES

"I have wanted to be an astronomer since the earliest time I remember wanting to be anything."

Mike Brown grew up in northern Alabama during the Apollo era, where rocket testing from NASA's Marshall Space Flight Center was always within earshot. As he played outside, the ground would start to rumble- kind of like in California- except instead of an earthquake, it was the launch of a Saturn V rocket, confirmed by a plume of smoke in the distance.

"My father worked on rockets, and it's just all I ever wanted to do- study space," he says surely.

Brown has now been a Professor of Planetary Science in the GPS department for 23 years, trying to uncover the story of how the solar system put itself together. Along the way, however, he's gained a reputation for shattering our perceptions of it.

In the early 2000's, Brown became infamous as the man who killed Pluto, after his discovery of the largest dwarf planets in the outer solar system led to its demotion from planet status.

Brown isn't disappointed by the public's lingering nostalgia for the former planet -- which shares its name with a beloved Disney cartoon character -- he shares it too. However, he is still dismayed by the reactions of a few very vocal astronomers who have tried to keep the debate about Pluto's status going. "I think they've taken their playbook from climate change deniers and just keep it alive as a controversy," he says. "I think the public is very capable of learning what's happening scientifically, but instead of doing that, all they see is that scientists are still arguing about it."

Brown, however, sees Pluto's celestial ranking status as the mundane part of it all.

"The interesting part is all these new worlds we've now been learning about. Each of these worlds has a piece of the history of the solar system in it, and you get to go and understand and put the stories together," he says, eyes wide.

Now, he is focused on yet another new world, with an ongoing project to find a true Planet Nine lurking at the edges of our solar system. He's searching alongside fellow Professor of Planetary Science Konstantin Batygin, who started his time at Caltech as a graduate student of Brown's in 2008. Batygin approaches problems from a theoretical perspective, while Brown is principally an observer. "When we work together, externally it probably looks like we're having this huge fight because there's always yelling, but it's so much fun because we know each other well enough that we can be on a similar frequency," says Batygin.

In June of 2014, Brown walked into Batygin's office, puzzled by the claims of a paper whose author list included Chadwick Trujillo, a former graduate student of Brown's.

Typically, the solar system is all in a plane, but the objects can be tilted and have varied orbits. However, this paper had reported a contradictory pattern. "They said all these objects in the outer solar system, when they cross at the closest point [to the Sun], they're always going from South to North," says Brown. According to Batygin, "That's 'intelligent design' level of detail that should not appear in the solar system."

Brown continues, "But I know him, he's not dumb, he doesn't do things wrong like that. So, I looked at the data myself and I realized they had missed the key point of what was going on." The authors, Brown said, had passed over the fact that all the objects and their orbits were tilted in the same direction- implying the gravitational pull of a much larger body.

"Mike had the insight to realize this was important," notes Batygin. "There were other people who had pointed this out and attributed it to things like statistical fluctuation. Mike was confused, but he took it seriously." He notes, "There are plenty of

people that are good observers, but there are only a few people- and Mike is the absolute best in this regard- who are also incredibly technically skilled and have the broad vision for combining those things into being a successful scientist."

"In the end, that was the only thing that could possibly make sense- a distant, giant planet," says Brown. "That's where it came from, looking one day and saying, 'Why is this like this?'"

Brown says his path has always been "kind of a random walk". He attended graduate school at Berkeley (during which he lived on a houseboat for some time), initially planning on a PhD in physics because it seemed practical. He only realized he could potentially have a career in astronomy when a professor suggested it to him -- "Who gets a job as an astronomer? That's crazy," he thought.

Personal reasons for moving to Pasadena led him to successfully switch from a postdoc at the University of Arizona to a postdoc at Caltech, and, in 1997, that turned into what he describes as an "accidental faculty job".

"My training is in astronomy, he says, "but I now work on planets and I do some geology. There was some meteorology, some geophysics and mineralogy and spectroscopy. I don't think I've ever had a class in any of these things. All of these things are like, ok, now this is a tool I need to teach myself- let's go do it."

Brown's desk, set in a bright and colorful office typically bathed in light from a large window, is overflowing with the rocks he's collected over the past 15 years. He taught Ge 1 prior to Paul Asimow and now teaches several planetary science classes, including an online class through Coursera that can be taken by anyone in the world. It was students from this class who lovingly collectively gifted him his favorite rock: a piece of a meteorite they learned about in class called a pallasite, iron and encrusted with gems.

"I think the public is very capable of learning what's happening scientifically, but instead of doing that, all they see is that scientists are still arguing about it."

It is perhaps Brown's relaxed nature and enthusiasm that make him such an effective teacher. Samantha Trumbo, a current graduate student of Brown's, has been particularly struck by his openness and accessibility. "We talked toward the end of my undergraduate time [at Cornell] and I emailed him two years later, thinking about applying to Caltech, and he still remembered me and was willing to meet again. That willingness to give people a chance was something that really affected my career path."

Batygin says, "Mike, as a person, is exceptionally chill and very direct...he's the opposite of how you would imagine a big-name member of the 'National Academy'." He notes, "He was an excellent advisor to me because he was able to formulate the important questions so well that a young graduate student just doesn't have the perspective to understand."

Brown consistently manages to be thoroughly casual and exceptionally funny. Batygin recalls his first meeting with Brown back in 2008: "I had forgotten to ask him what classes to take- so I showed up to his office and I was like, 'What should I take?' He looked up at me and said, 'You should only take legal drugs.' Stuck with me for my entire graduate career," he says, laughing.

Both Batygin and Trumbo smile as they recall the summertime parties Brown hosts for the lab group each year at his home, where he gives out prizes such as ice cream for the most interesting paper, or the "Artichoke Prize" -- the least reward for the greatest amount of work done by someone that year.

Paul Wennberg, currently Professor of Atmospheric Chemistry and Environmental Science and Engineering, occupied an office just next to Brown's in the early years. The two fresh hires bonded quickly, being the youngest faculty members in GPS at the time.



Image from Mike Brown's Twitter page

Wennberg recalls, "He lived in the forest, up in a little cabin," Wennberg recalls. "Visiting him there was super exciting, you basically had to park your car and walk through the woods." The two share an adventurous spirit, just last March going back-country exploring in Wyoming at Wennberg's family home.

Brown and Wennberg remained close as Mike started to build a family. He married his wife, Diane Binney, at the Athenaeum in 2003, and they had their daughter, Lilah, two years later.

The family (apart from their four cats) loves to travel. Brown reminisces, "Last summer we went to Ireland and for a week of it we ended up walking about 100 miles in six days. We just walked from bed n' breakfast to bed n' breakfast along the coast, and walked along the beaches, and over mountains, and into villages. That pace of doing things, with my family, day in and day out, that was just fantastic."

"Oh, they're so playful," says Wennberg. "Lilah and Mike share this passion for music of a genre that not everyone appreciates, sort of bluegrass. Diane tolerates it; in fact, she loves some of it, but Mike and Lilah have a special connection through their love of music."

It was when Lilah was taking swimming lessons as a child that Brown began to swim laps alongside her, tacking on to his existing hobby of biking. Then, on one of his many trips to the Hawaii telescopes, he witnessed the grand Ironman World Challenge triathlon. At 50 years old, he thought, "Well, I'm biking and swimming. I guess I could try running."

Now, at 54, he competes in triathlons regularly, even recently starting a club on campus. "He's oftentimes pretty modest about it," says Batygin, "but when we go on runs together, I can barely keep up." He adds, "That's one of the things about Mike: if he chooses something, he will get it done, and he will get it done with a remarkable and jaw-dropping efficiency."

Brown's newest project involves the establishment of a new lab in Linde-Robinson to help his team understand the physical interpretations of telescopic observations. For five years Samantha Trumbo has been studying Europa, an icy moon of Jupiter, with Brown. She says, "Because Europa is this huge irradiated place, there's a lot of radiation chemistry that goes on and formation of new products. We want to dive into that chemistry to simulate those kinds of environments." Brown couldn't get anyone to do the correct experiments, and finally resorted to just doing them himself.

Ultimately, Brown is defined by how much he loves to dive into life, from actively exploring our own planet to characterizing those we don't even know about yet. "I want to find new things, or find out about new things, or learn new things," he says. "You know, not everyone gets to just come into their office and say, okay, today I'm going to discover things no one else has known before- ever."

REMOTE LEARNING - END OF TERM CHECKUP

ALEX HONG | CURRENT EVENTS

The close of the Spring term marks a milestone in an unprecedented time in Caltech's history: remote learning was introduced and implemented in a short period of time, and faculty and students alike were forced to quickly adjust to the new reality. At the end of this turbulent time, it's worth reflecting on the efficacy of the platforms and support structures put in place.

Halfway through third term, Caltech's Center for Teaching, Learning, and Outreach sent out a survey regarding online learning. Among both undergraduate and graduate students, live sessions remain the primary method of accessing lectures, while Zoom and Moodle were the most commonly used academic platforms.

Overall, the responses indicated that course structures, expectations, and resources are reasonably clear in many cases, but there is room for improvement across the board, especially in terms of office hours, expectations for participation, and online course layouts. For the most part, undergraduate and graduate students had the same feedback regarding course structures, expectations, and resources - with the exception of office hours, which graduate students found to be more helpful.

Techers are particularly heavily impacted by the shift, as close collaboration is essential to completing difficult problem sets. The honor code, a backbone

of the Caltech community, is also complicated by issues with remote collaboration. The CTLO's survey found that most students used video conferencing platforms (such as Zoom and Discord) and text chat to collaborate. However, the collaboration experience is rendered difficult by issues with internet connectivity, time zone conflicts, difficulties with online whiteboards, etc.

Many faculty have also made efforts to be more flexible and understanding in regards to course policies, something appreciated by many students (according to the CTLO). Students have also appreciated professors' efforts to remain engaging during class, despite the lack of face-to-face interaction. There has been a lot of positive feedback regarding lecture quality - perhaps one of the silver linings of online learning is the ability to revisit lecture at will and pause (or speed up) the recording.

Josey Zhang ('23) commented, "I think I was a little bit excited for online at the beginning [of term] because online means more flexibility and recorded notes/lectures that I can look back at for help. But I've realized throughout the term that I actually do much more learning when discussing and collaborating with others which is super hard to do even with Zoom and Discord. There's also not really a good "learning environment" at home, so it's hard to stay motivated and focused without burning out." These themes were all commonly reflected in the CTLO survey.



The Olive Walk, still completely deserted.

Credits to Haoxuan Chen (B.S. 2022).

At the end of the day, students seem to have positive outlooks on the overall experience of online learning. Vidhya Dev ('21) commented, "Online learning has had its challenges, but when there are sets to be done, we will always find a way around those challenges." Krystyna Maruszko ('21) added, "Overall, it wasn't as bad as I thought it was going to be, but I was very lucky to find [a good group] to work with".

Whether or not fall term will be online is still up in the air. A "binding" decision will allegedly be made mid-July at latest.

CREATIVE WRITING

WAYNE DINUNZIO | COLUMNIST

I am not going to let go of my personal joy. I am going to enjoy what I have left, whether it be an hour of my life or an hour of my life with my students. I have a beautiful life, and I am very proud of it. I'm gonna say that I have valued my students and my community very high. I'm sure that other students value their relationships with their teachers more highly than I do, and if they have any quibbles, they should talk to their provider. It is very easy to find people who want to be a better student. It is very easy to find people who want to be more independent. It is very easy to find people who are more compassionate. There are many people doing great things in the world. We all have the capability to do great things, whether we are able to love those people, be kind to animals. We are every bit as capable as anyone else.

It is also very easy to find people who are incredibly inspired, who are really inspired. It is very easy to find people who are really into something, who are having fun. It is a very simple thing.

I'm really lucky that I have a friend who is not only incredibly creative but also incredibly dedicated. She is really into the things that I am doing, and she is very passionate about what she is doing. I am really lucky that I have a close relationship with her because it is very easy for me to see her construction and the experience that I've had. I'm also fortunate

that I have a great team of students. We have a great team of students that are great in all aspects of their personal lives. Whether it be making a great effort to learn Spanish as a foreign student or joining the Caltech Y to volunteer here on campus, they are all very passionate about what they are doing and their own personal development.

I'm also highly proud of how I've been able to organize and maintain a strong relationship with my mother. I've been supporting her since before her death in 2007. I bought her a couple of gifts when she was still alive but thank to all the support from friends and community members

That can handle and organizes. And, as is the case with other members of the Board, I have been given the opportunity and responsibility I need to lead the board.

I am running for President because I believe I am the best candidate for student leadership. I am responsible, approachable, and loving of the student body. As I mentioned in my introduction, I am also running for ASCIT President because the student body is a consistent feedback loop, and I want to be the best candidate possible for president. I am running for ASCIT President because I believe I am the best candidate for student leadership, and because I believe I am the best person possible to take on the role of ASCIT Treasurer.

The California Tech

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CORRECTIONS

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The picture of the Hameetman Center on the front page was mistakenly credited to Alejandro Lopez. The actual photographer has not been determined.

The minutes for the ASCIT Board of Directors VPSA Meeting were not included.

Alexandra Lai, Lexa Hummel, and Anna Tifrea were listed as "Board of Control Unaffiliated Representatives" instead of their actual title, At-Large Representatives.

Every writer was erroneously labelled "contributing writer" in the accreditations box despite most falling into the categories "Reporter", "Staff Writer", "Columnist", and "Sports Writer".

The California Tech aims to publish biweekly except during vacation and examination periods by the Associated Students of the California Institute of Technology, Inc. The opinions expressed herein are strictly those of the authors and advertisers. Letters and submissions are welcome; e-mail submissions to tech@caltech.edu as plain-text attachments, including the author's name, by Friday of the week before publication. *The Tech* does accept anonymous contributions under special circumstances. The editors reserve the right to edit and abridge all submissions for any reason. All written work remains property of its author. The advertising deadline is 3 PM on Saturday; 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 HISTORY OF THE BoC, WRONG RIGHT ANSWERS ONLY, PART 2

NORMAN CHUNG | HUMOR

We all know what the BoC is: it's the organization on-campus that fights for the Honor Code. However, not many people know the origin story behind the BoC. Last week, we covered the BoC's time as the Blight on Chaos. Let's see how the BoC adapted to the changing times that were to follow!

Phase 2 | Bringers of Calamity

Here, we usher in a new age of BoC. Of course, there were still those loyal to the Honor Code, but they had to be careful, lest they invoke the wrath of the rebel force once more. What better circumstances are there for a vigilante group of enforcers to exist? Thus, the Bringers of Calamity were brought into being. No one truly knows how they BoC'd those who violated the Honor Code. Some say they ambushed those rushing to turn in their academically illegitimate sets, taking them places where they would never be seen again. Some say rebels were taken into the deepest depths of the Caltech tunnels to be interrogated for information on who else was breaking the Honor Code. Some say the BoC convened in the annals of hyperspace to decide one's fate. (To this day, the BoC keeps their meeting places secret to maintain their safety.) However, by far the most prevalent story is that

of a storming. One would be working on sets deep into the night (who sleeps at Caltech, right?), feeling safe, when suddenly they would hear two distinct knocks. They didn't have time to react, they didn't have time to wonder who would knock at that hour, they didn't have time to feel absolute terror. All they had time to do was hear the infamous words "It's the BoC" before their room was stormed and they were taken who-knows-where to atone for their actions. Regardless of what happened, it was certain that calamity fell upon those targeted by the BoC during this time.



BoC storming, artist rendering, colorized

However, they were a vigilante group, constantly being hunted by Caltech admin with the same vigor that Caltech students are faced with today. Members of the BoC were praised by some, feared by others, but always in danger. Those found to be associated with the BoC were faced with the worst punishment they could give: being forced to overload hard classes on grades. With admin being forced to also deal with Honor Code violations, it was a tense time.



One of the few sources of information we as Caltech historians have on the BoC during this period

To learn more about the phases of the BoC, be sure to read the next issue of *The California Tech* to catch the next installment of this column by the all-knowing Norman Chung!

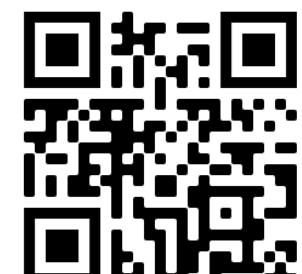
AMAZON SKYMAIL

KENNY THAI | COLUMNIST

Like last time, whether or not I get paid for writing this will determine whether or not something will actually get sent out. Really hoping I do get paid for everything I write during this term because it's not like there are many other ways to spend that sweet sweet ASCIT funding we're entitled to get (thank you guys for voting on that by the way).

Enter this week's raffle by using the QR code (right) or the link below:

<https://bit.ly/2AdHJuV>



Note that we (still) make no claims that the winner of the raffle is determined randomly



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- Directed by: Lee Demarbre

As all loyal readers of this esteemed paper should remember, this movie got a glowingly positive review in an earlier issue. Odessa Filmworks' timeless classic is still available for sale as a DVD, Blu-ray, and VHS tape! If you win this raffle, we will be determining the version you get by [not] random [not] chance! Writers at our sister publication, *The Stall Street Journal* have called their first screening "a night to remember," also mentioning that it led to an atmosphere which "filled the ASCIT screening room with boatloads of [REDACTED]!"



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"OH NO!" I hear many of you exclaim. "But I have no means of watching at least one of the media formats I might [not] randomly win! How will I ever watch this masterpiece without resorting to the low-lying platforms that give free access to the movie without even requiring you to sign in like Tubi (which has a terrible audio desync problem that I can't recommend) and YouTube!" Well despair not, my friends, because we have a solution for the problem we just imposed on you for just \$19.99!

Now, you may be wondering, "Jesus Christ Vampire Hunter is a 3D movie?" The answer may surprise you! It's not. But this set of 50 pairs of 3D glasses just might be enough to convince a crowd of young prefrosh that it is before you screen it during rotation! And maybe some of them will even decode the secret messages encoded in the movie based on which eye you close while wearing them.

You should know the drill by now. I inevitably don't get paid, I vote the "NO" option, I choose myself as the raffle winner, and I don't lose money for doing my job. If I do somehow manage to get paid, I just *might* go back and retroactively change the results of the "raffle" and actually send someone a physical item, but it hasn't happened yet, so ^_^(^)_^-

oh god how did i
get here i am not
good at computer

are you good at computer?
join the tech!

This week's recommended
Tech usage after reading:
maybe actually consider the
8 pages, 8 houses proposal
to make my life much easier