

# The California Tech

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TECH@CALTECH.EDU

## NEW PARKING POLICY AIMS TO REDUCE ENVIRONMENTAL IMPACT

DAVID MELISSO | FEATURE STORY

Last November, changes to Caltech's parking policy were announced that increased parking fees and restricted options for undergraduate parking, with the intention of shrinking the Institute's environmental footprint. The fees are meant to increase funding for the Vanpool program and to subsidize use of public transit.

According to John Onderdonk, the Senior Director of Facilities Services and Chief Sustainability Officer, the changes were meant to "balance equity and sustainability with regulatory requirements and campus parking constraints." Onderdonk announced the changes in an email to the campus community dated November 14, 2019.

Onderdonk later explained, "we spent over a year analyzing our commuter data, collecting campus stakeholder feedback, and assessing appropriate benchmarks" in order to develop the most effective policy possible.

Effective January 1, 2020, the on-campus commuter parking permit price was increased from \$40 to \$60 per month. Undergraduate students are now only permitted to park in the California and North Wilson garages during weekday peak hours (8 am to 4 pm), but public transit riders can now obtain free Metro passes. The Institute now provides a \$100 subsidy towards Metrolink passes, and the subsidy for Vanpool riders has been increased



South Holliston Parking Garage. PlugShare

from \$50 to \$100 per month.

Students expressed concerns over these rule changes. "It's affected me in general by making me a good bit less likely to go out and do stuff since I have to walk much further to my car, especially when hanging out with friends in Ruddock," said Simon Lequar '22, a resident of Dabney Hovse.

For others, though, the policy changes are more than just an inconvenience. According to Leo Balestri '20, who lives off campus with chronic condition that sometimes makes it

hard to walk, "when I'm in that state, parking in the Holliston lot made my classes and the Hovses more accessible, so I wasn't thrilled about the policy change."

However, Balestri understands the logic behind the decision: "I'm not representative; almost all undergraduates live on campus and most don't face mobility obstacles, either. Now I get four parking passes a month with Metropass, so I can drive when I need to and also get free transit to LA.

| CONTINUED ON PAGE 8 |

## I HAVE A SURF—WHAT'S NEXT?

LORENZO SHAIKEWITZ |

Every year, a good chunk of Caltech undergraduates apply for a SURF, a process very likely to give them comprehensive research experience over the summer. Now that most people are getting ready to finalize their proposals, we reflect on the process so far and on what's to come.

SURF proposals are due Saturday, February 22nd online. The proposal will be reviewed by both your mentor and staff at the SFP office, treated in a manner similar to a grant proposal. By April 1st, you will hear back on whether or not you receive an award. SURF proposals have a high acceptance rate, so there is no need to stress over whether or not you will get one.

The final award is worth \$6,420 for 10 weeks of work over the summer. Assuming you work 8 hours a day, that amounts to about \$16.05 per hour (minimum wage is \$13.25). How much of that actually goes to your pocket? Excluding tax, the main mandatory expense is housing. On campus housing is the same charge as during the year: \$3,146 + mandatory board (\$400 charge for \$400 in dbal—no open kitchen or house dinners). Splitting an apartment may make this

cheaper, but we won't consider that here.

Subtracting mandatory fees, your summer payout amounts to \$2,847—still \$7.19 per hour. Even if some of it goes to food, you'll still have a good chunk of money left over and great research experience under your belt.

The process of getting a SURF this year has been a little more nuanced compared to the past. For frosh, getting a JPL SURF was far harder than in previous years, perhaps because of the imminent launch of the Mars

2020 rover. Caltech SURFs have been much easier to acquire, with the familiar problem of non-response easier to counter.

With the SURF application deadline coming up, don't forget to check your proposal with your mentor and proofread before you submit. Some tips from the SFP office include adding citations, including figures, and expanding key points. Remember, a good proposal can fit in 1-3 pages, and some of the best have been only a single page. Good luck!

## PROF. HUNT WINS FEYNMAN PRIZE FOR TEACHING

DEVIN HARTZELL | REPORT



Professor Melany Hunt

On February 12th, it was announced that this year's recipient of the Richard P. Feynman Prize for Excellence in Teaching is Melany Hunt, the Dotty and Dick Hayman Professor of Mechanical Engineering in the Division of Engineering and Applied Science.

Professor Hunt joined the Mechanical Engineering Option in 1988. She served as Executive Officer from 2002-2007, and Vice Provost from 2007-2014. The selection committee highlighted her contributions to the campus community, including her leadership in founding the Center for Teaching, Learning and Outreach in 2012, and of the ABET and Institute accreditation processes.

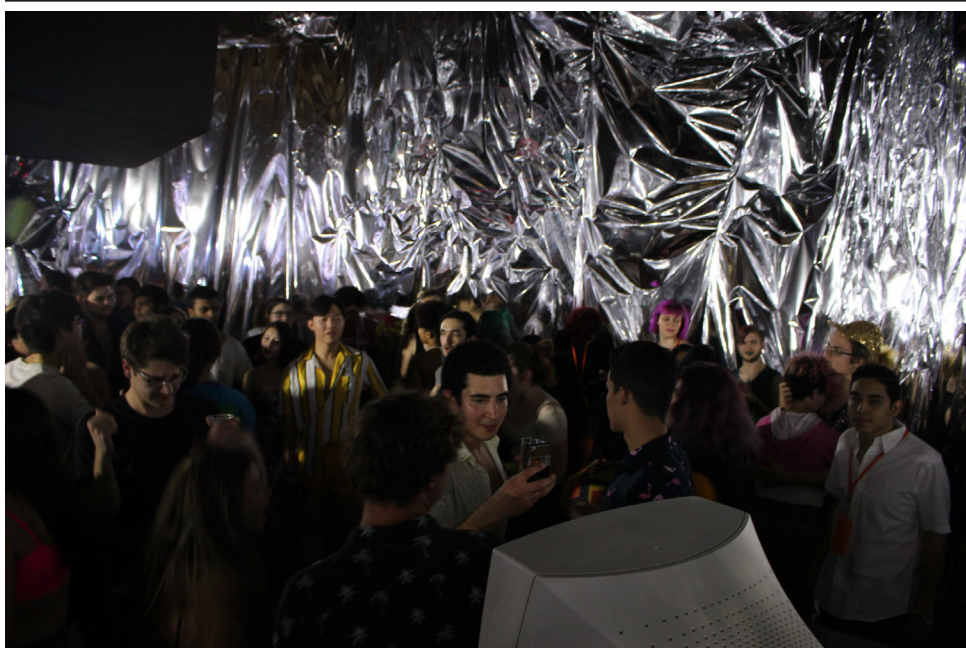
Professor Hunt has intermittently taught ME 11a and Thermal Science since her appointment to the faculty, and recently designed EE/EST/ME 109, Energy Technology and Policy.

According to the selection committee, "Melany's holistic and student-centered approach to teaching stood out as profoundly shaping the way students think and learn not only at Caltech but well beyond."

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Ricketts Interhouse party last Saturday (2/8). Toussaint Pegues. Additional photos on Page 3.



## CALIFORNIA PLAYS OUTSIZED ROLE IN PRESIDENTIAL PRIMARY

DEVIN HARTZELL | NEWS

Over the past few months, presidential candidates and their staff have descended upon a select few early-voting states to garner the media attention and momentum that comes with winning, say, the Iowa Caucuses. This year, however, the importance of the California primary has flown under the radar because of its earlier position in the primary calendar and the tumultuous state of the primary at the national level.

### CONTESTS ALREADY UNDER WAY

The contests themselves are already under way: the results of the Feb. 3rd Iowa caucuses were largely inconclusive as Pete Buttigieg, the former mayor of South Bend, IN, narrowly won the most delegates to the state convention while Sen. Bernie Sanders (I-VT) won the most votes. The caucus results were also marred by inconsistencies within the Iowa Democratic Party's system for reporting results, leading to a significant delay in announcing the tallies.

The Iowa caucuses aren't significant for how many national convention delegates each candidate can win there; in fact, Iowa only elects approximately 1% of the total delegates. However, as the first primary in the election season, the Iowa caucus has developed a reputation for garnering media attention for candidates who have a strong showing. Notably, in 2008, they boosted then-Sen. Barack Obama with a surprise victory, and in 2016, they prolonged the campaigns of Sen. Sanders and Sen. Ted Cruz (R-TX).

However, with no clear winner, later contests will play an outsize role in deciding the nominee. On Feb. 11th, Sen. Sanders narrowly won New Hampshire against Mayor Buttigieg and Sen. Amy Klobuchar (D-MN), who had a surprisingly strong third place finish, which will give her momentum going into later states.

### PROVING GROUND FOR A DARK HORSE

California votes March 3rd, after Nevada and South Carolina, and alongside myriad other states on so-called "Super Tuesday." This is earlier in the calendar than the past two Democratic contests, both of which occurred in early June, after the outcome of the primaries was largely a foregone conclusion.

However, there may be a few more interesting twists to this year's contest, one of which is Michael Bloomberg, the billionaire and former Mayor of New York City, who, as a result of entering the race late, has ignored the first four nominating contests in the interest of accumulating delegates on Super Tuesday. His immense wealth, seventeen times that of President Trump, has allowed him to blanket the airwaves in ads (which often show on the TV screens in Chandler Cafe on campus). Running campaigns in the nation's most populous state is expensive, so Bloomberg could reap the rewards of his spending here.

According to a report published by The Guardian, Mayor Bloomberg has hired more than 300 campaign staffers, dwarfing the efforts of the other campaigns in the state. Bloomberg has also received the high-profile endorsements of San Francisco Mayor London Breed and Stockton Mayor Michael Tubbs.

However, Bloomberg needs to convince California Democrats that he has what it takes to beat Donald Trump in November. He has shown an uncanny ability to annoy the President, running advertisements with unflattering photos, and leaning into fights on Twitter. For those Democrats who want to win at all costs (even if it means electing another billionaire) in November, Bloomberg may have significant appeal.

In recent days, videos of old com-

ments Bloomberg made defending his policing record as Mayor of New York City have surfaced. His unpopular stop-and-frisk policy may prove to be a liability, along with comments he made defending redlining, a discriminatory zoning practice.

### MAKE-OR-BREAK FOR OTHER CONTENDERS

California is a make-or-break state for the other contenders as well: Former Vice President Joe Biden needs to show he still has appeal, after a disappointing fourth-place finish in Iowa, and a dismal fifth-place finish in New Hampshire. According to a report in The Hill, Biden's faltering fundraising could further suffer if he doesn't show he can bounce back. Much of Biden's strength lies in his appeal to minority voters, which constitute a large portion of the Democratic electorate.

Mayor Buttigieg likewise needs a strong showing in California to prove that he can compete for the nomination

### OPPORTUNITY FOR SANDERS

Current polls for the race show Sen. Sanders with a significant lead over his opponents. A victory for Sanders in California would help him strengthen this lead. However, according to FiveThirtyEight, a political statistics website, there is a 38% chance that no candidate will garner a majority of delegates, which would lead to a contested convention, and jeopardize his chances of winning the nomination.

### NEW VOTING SYSTEM COULD LEAD TO CONFUSION

For the first time, Los Angeles County (along with 14 other counties) will be switching to a system of so-called "voting centers," as opposed to the traditional polling places. Instead of heading to a specific polling place on election day, voters in Los Angeles County can head to any of 1,000 voting centers county-wide, many of which will be open for the ten days preceding the election.

Half of California votes are cast by mail, which often leads to delays

in reporting results, since all ballots postmarked by election day are counted. Several races in the 2018 midterm elections weren't called until weeks after election day, so who won the primary may not be immediately clear.

### ANALYSIS: MEDIA NARRATIVE IS SELF-FULFILLING

One may notice that much of the content in this article has been focused on abstract concepts of momentum and controlling the media narrative. This is especially important in a prolonged primary season spanning several months. In order to remain contenders, candidates need to repeatedly prove their viability as candidates. However, this early in the contest, controlling the narrative is especially important.

Consider the similarities in the campaigns of Pete Buttigieg, Amy Klobuchar, and Joe Biden. Each of these candidates occupy a more moderate posturing than that of, say, Bernie Sanders. One may hypothesize that these candidates are competing for the same kind of voter, one who doesn't want to burn down "the system" and replace it with something entirely new.

A voter like this may be inclined to strategically allocate their vote to the candidate who has the best chance of winning. The rumors of Biden's impending doom could steer these voters away from Biden, creating a downward spiral for his candidacy. Controlling the narrative at this point in the election, and projecting confidence and strength is crucial for attracting new voters to the cause.

With the stakes higher than ever to choose a nominee who can defeat Donald Trump, the California Democrats have an important choice to make on March 3rd. Regardless of your political affiliation, you can register to vote at <https://registertovote.ca.gov/>, as there are plenty of other important primary elections happening at the same time, at the local, state, and federal levels.

## CITY SIGHTS

MICHAEL VALVERDE | CITY REVIEW

The California Science Center, located in Exposition Park, Los Angeles, is a great place to spend a day with friends and see some truly spectacular sights. Located directly off of the Expo Park stop on the Metro Expo Line, the Science Center is easily accessible to any Techer, with or without a car. General admittance is also free, so don't worry about straining your budget with a trip. It does close at 5:00 p.m. however, so plan on arriving early to ensure you have ample time to see all the exhibitions.

Without a doubt the crown jewel of the Science Center is Endeavour, a massive space shuttle that carried crews and equipment into space on 25 different missions over the course of its 19 years of service. The sheer size of Endeavour is almost overwhelming, and the opportunity to get so close to it is truly amazing. Surrounding the shuttle are many panels and signs containing various bits of trivia and history about its design, as well as a nice video detailing the process of moving it to the Science Center where it currently resides. There is also a



The space shuttle Endeavour in California Science Center. Michael Valverde

separate exhibit which contains extra information about the shuttle and its crew where you can even touch the Endeavour's landing tires! The only drawback is that these experiences are not included in the free general admission and will cost you an extra 3\$, which is honestly not a lot considering what you get.

While Endeavour is certainly the

best attraction the California Science Center has to offer, there are plenty of other exhibits to see while you are there. For those of you who are interested in space exploration, there is far more than just Endeavour—the Science Center also contains the Gemini 11 capsule as well as scale models and prototypes of many other capsules, satellites, and spacecraft. There is also a great aquarium containing a

kelp forest with a glass tunnel running through the center, so you can walk through and see the fish 360 degrees around you! These are just a couple of the other fun exhibits available.

The overall cleanliness and atmosphere of the Science Center were impressive considering that it is free, but it is still a public place with many touch-based exhibits so I would recommend bringing some hand sanitizer. There is a variety of foods available in the food court, although the price, while reasonable by museum standards, runs a bit high. If you would prefer to avoid this cost you could either bring your own lunch or visit one of the many food stands or eateries nearby. For example, I found an excellent food cart selling quesadillas right outside of the Science Center, and I enjoyed a scenic view of the Rose Garden while I ate.

Overall, I would definitely recommend gathering some friends and visiting the California Science Center if you are looking for a fun, cheap way to spend a day.



## FROM LUPERCALIA TO ST. VALENTINE, WHERE DID VALENTINE'S DAY COME FROM?

BILGE GUNGOREN | OPINION

When I walked into Pavilion's this past Thursday, February 13th, I was greeted with a familiar sight in the first half of February: pink balloons, chocolate-covered strawberries, love themed snacks from every single brand you can think of, and tons and tons of teddy bears holding hearts in their hands. Just like every single holiday, stores try to cash in on people's desire to show love to their significant others, especially the last minute terror of those who waited until the last minute. Valentine's Day is known as the celebration of love and romance—or alternatively, if you're single, a reminder of loneliness. However, the origins of the holiday couldn't be further from that.

Valentine's Day is named after one of many St. Valentines; however, the most likely candidate is a priest who married couples against the Roman emperor Claudius's orders, as Claudius outlawed marriage for young men in the belief that single men made better soldiers. It's believed that this is the reason the holiday is associated with love. Another candidate to the namesake of the holiday is an imprisoned St. Valentine, who sent the first "valentine" greeting to the daughter of his jailor, whom he was in love with, and signed it "from your valentine," an expression that will be familiar to any modern reader. No matter which

version you choose to believe, the legend of St. Valentine stands as a heroic, romantic figure. However, the origins of Valentine's Day go further back than any St. Valentine, to Lupercalia, a Roman festival that celebrated the coming of spring. It is believed that the change in the name of the holiday was an attempt by the Catholic church to Christianize the holiday.

The origins of Lupercalia are unknown; however, the name might have originated from the Latin *lupus*, meaning wolf, in connection with the she-wolf that nursed Romulus and Remus, the mythical founders of Rome. The festival involved the sacrifice of goats and dogs, a sacrificial feast—where women were struck with thongs made from animal skins, which was believed to make them fertile, and pairing off of women with men by lottery. Not exactly the image of a perfect, happy, loving relationship Valentine's Day is associated with, I would say.

Valentine's Day was first celebrated as a day of romance beginning in the 1400s. In Medieval England and France, February 14th was believed to be the beginning of birds' mating season, which strengthened the association of this holiday with love. These centuries were also the beginning of written valentine greetings as heart-felt love letters. The oldest known val-



entine is a poem written by Charles, Duke of Orleans, to his wife in 1415. By the 18th century, sharing tokens of affection or notes on Valentine's Day has become commonplace. Printed cards also began around these times, and cheaper postage rates made it more popular to send them. Cupid, another popular figure of Valentine's Day and the Roman God of love, was also commonly portrayed on these cards as a naked cherub with his bow and arrows of love. The origins of Cupid go back to Eros, Greek God of love, who was a handsome immortal being who played with the emotions of both people and Gods. A long shot from the child he's come to be known on the cards, definitely.

Thinking about the origins of Val-

entine's Day, walking down those aisles of red and pink in Pavilion's doesn't feel as romantic anymore—I say as a very single woman. In any case, my parents always saw Valentine's Day as an excuse to do something special, as after twenty years of marriage any romance between two people can dissipate. I can only hope that this past Friday was special for everyone, single or taken.

*Bilge Gungoren is a freshman at Caltech from Istanbul, Turkey and a writer for the California Tech.*

## CREATIVE WRITING: "MY LIFE"

WAYNE DINUNZIO | COLUMNIST

I had hoped that the exact area would have some sort of relationship with the Sun. I was excited to learn more about my fellow students. While the course was supposed to be a life-long connection, I had no long-term plans for my life outside of Caltech. I decided to go ahead and have children.

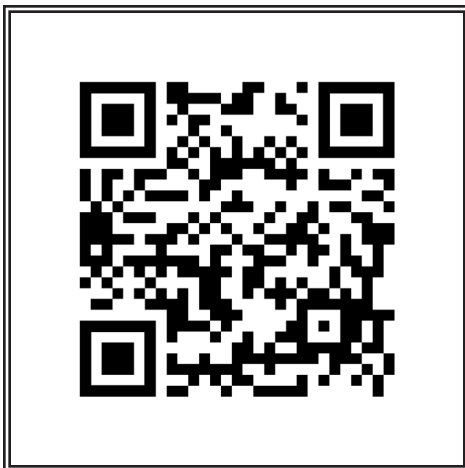
The birth of my children was incredibly frustrating. Looking at my two sons, I could only imagine what it's like having my children. They were beautiful, intelligent, talented, and kind. My children were a major role in my life, but they were also a huge disappointment. They were no different from any other children I had. I had no idea what to do with them, what to be proud of them for, and how to turn them into a person.

I had no idea how to have an experience that would make me a better person. I had no idea what its benefits were, but I was completely new to the world. There are benefits to being an inventor, a scientist, an entrepreneur, and a leader. However, there are limits to how much you can really learn. I had no idea how to get my son to an industry, but I had no idea what the limits were. I found some great websites, but it was not feasible. I had no idea what to work on, but I knew I had to do something with my son.

My wife and I are very supportive. We have our own philosophical beliefs. We are nominalists. We believe that there are six senses, but there are actually seven. There are different brief descriptions of these brief sensa-

tions that you can have when you're actually having one. But the most important aspect is that we don't have a lot of questions that we actually want to ask ourselves. Ideally, we would have an experience where we actually talk about these questions. We actually have a lot of questions that we want to ask ourselves, but we struggle to actually ask ourselves some of them. For example, we struggle to be consistently logically opposed to smoking because it's socially disapproved of. But actually, if we were to quit, we wouldn't start all over again. So it just depends on how much we're trying to change our behavior.

*Wayne Dinunzio is a columnist for the California Tech. And yes, we're just as confused as you are.*



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## FACULTY SPOTLIGHT: DR. TOM MILLER

ALEX HONG | INTERVIEW

Dr. Tom Miller has been a Professor of Chemistry at Caltech since 2013. He studied chemistry and mathematics as an undergraduate at Texas A&M University, and has primarily focused on computational and theoretical chemistry. His group develops theoretical and computational methods to model chemical, biochemical, and biophysical systems. Outside of his research, he co-teaches Ch 1b, a freshman core chemistry class.

*Interview conducted and condensed by Alex Hong.*

**Q. I noticed on your research page that your research spans a lot of different areas. You gave a CSX talk, so your group uses a lot of applications of CS. You have projects focused on things like proteins and quantum chemistry and battery applications. How would you describe your research to someone who doesn't know anything about it?**

**A.** I would say that computational modeling provides a lot of opportunities for accelerating the discovery process in chemistry, biology, and materials. There are many situations where performing detailed experiments and understanding at an atomic level what's going on is just really hard to do. And we develop computational methods to be able to understand those mechanisms and to make predictions on the basis of them. And that's pretty fundamental and enables us to work in a lot of exciting areas. So we get to collaborate with experimental synthetic chemists to design better catalysts. We get to work with JCAP to do better solar energy conversion. We get to work with biochemists to understand how particular proteins will get targeted to membranes more or less efficiently. It leads to a lot of fun and exciting opportunities.

**Q. What's the project you're most excited about right now?**

**A.** Oh, it's hard to pick your favorites! I think one of the major things that we've really been excited about in the past year or so has been the use of machine learning in chemistry. I think this is something that will have a lot of impact. It will enable us to much more rapidly perform calculations we were already performing, just increasing the efficiency of them. It will also enable us to make predictions and see connections that simply weren't practical or possible before. I think it's a really versatile tool that instead of eliminating our understanding by abdicating that to the machine, I think it really facilitates our understanding and creates a lot of opportunities if it's used right.

**Q. So, if I understand correctly, you're focusing on mostly modeling these systems with computer assistance.**

**A.** Yeah! I think the life cycle of one of our projects is often the following. We develop new methods - new algorithms, and we implement those methods. And so we can generate new software. And we apply that software to interesting chemical problems, just computationally. And we say, hey! Turns out this molecule might work better, or this protein might behave this way. Then we work with experimentalists here at Caltech or many other universities to test our predictions. So it kind of creates a closed loop: all the way from new algorithms to new predictions of chemical and material behavior to somebody else

(typically) doing the experiments.

**Q. So how much experimentation does your group then actually do?**

**A.** Very little! I do have a joint experimental postdoc right now, which is kind of a first for me (he's actually ordering solvents and stuff like that now). Of all the people who have worked in my lab over the years - 40 or 50 people - they've all been 100% computational.

**Q. So you're mostly providing a basis for experimentalists to work off of based on these optimizing models that you're coming up with.**

**A.** Yeah! It's a hand-in-hand relationship. Experimentalists can do specific things very well. They can make the new molecules, they can do particular tests and experiments on those systems. But that leaves gaps for understanding. We try to fill those gaps with computation, and it's not just explaining what they already see. It's then guiding that experiment. What should the next experiment be - if this is true, it implies that this should be possible. The wonderful thing is working with great experimentalists who will then be willing to do those tests and follow through on that.

**Q. If you didn't have any limits on anything - what's the most fantastical project you can think of?**

**A.** The projects I find most exciting are when we can change the behavior of nature or material properties around us. Using computation to predict proteins with engineerable properties is something that I'm super excited about right now. We have a new project where it's very clear that the forces that act on a new protein can actually change that protein's sequence. Which is an amazing thing! It comes out of the ribosome, it feels the world around it, and that force that acts on it propagates through the partially-created protein. It actually will induce a change at the ribosome that leads to a different protein sequence. It's an amazing sensitivity to the environment that gets reflected in the protein se-



Professor Tom Miller from Caltech Division of Chemistry and Chemical Engineering. Daniel Contaldi

quence itself. Computation has played a big role in understanding that connection. I'm hugely excited about using that connection and engineering proteins that are switchable and have switchable functionality based on external stimuli through this mechanism.

**Q. Then, going off of that, what's the biggest limitation to your research right now?**

**A.** The challenge of simulation and computation is that interesting stuff happens in complex systems. The more complex a system, the more costly it is to simulate on a computer. You have more atoms, you have more parts of the protein. It's bigger and it happens on a longer timescale. Proteins will get synthesized on the timescale of minutes, for example. Developing algorithms and methods that enable us to be sufficiently accurate but get to these complex systems and longer timescales is really the fundamental methodological challenge that my group is always focused on.

**Q. Obviously it's impossible to completely simulate everything in a system - it's too complex. So how do you pick and choose which things to eliminate?**

**A.** That comes down to a problem by problem basis. There's no black box that you throw in a problem and get out an answer. That's why each of these applications is a neat puzzle and requires creativity and insight in how best to simplify and to extract the essential physics from that. There's no easy answer to that. New algorithms can help to automate this process, but it's always going to rely on the ingenuity and creativity of the scientist.

**Q. Your group integrates so many different areas of science. What's your background?**

**A.** My undergrad was in math and chemistry, and I always focused on computational and theoretical chemistry. I had the opportunity to work in a lot of areas of computational chemistry, and that gives you a pretty broad toolkit. But the real explosion in diversity of problems that we work on has happened since I've been at Caltech. Caltech is a scientific playground for really interesting things going on. Many of them connect to the molecular sciences - material properties and biochemical activity and all sorts of things. Seemingly very different things are united by the fact that they involve chemistry and molecules.

**Q. Going off of that: compared to other universities, is there something particularly unique about Caltech that you've observed or experienced while working here?**

**A.** Everybody emphasizes the effects of Caltech's small size. There are very direct ways that it affects you scientifically. Say I casually knew 100 people. If I was at a big university, that 100 people would basically be chemists who look very much like me. At Caltech, that's a third of the faculty. On my day-to-day casual interactions, I'm having to justify my science and talk to other people about their science on a much broader sweep of topics. Not only does that change the way you communicate, but more importantly, it changes what you think is an important problem. It affects your problem choice. You're doing it not just to impress your friends in one field, you're doing it to try to impress and raise awareness to a bigger community of scientists. You try to tackle goals that are more influential and ambitious that way. That's what Caltech does to you. Caltech helps you frame questions in terms of what's important. And Caltech places importance on big ideas and big goals. Not incremental stuff. Something about the place inspires and demands that. That's one of the really special things about being here.



## ARC MEETING MINUTES

MINUTES FOR 2 FEBRUARY 2020. TAKEN BY DANIEL NEAMATI, ARC SECRETARY

PRESENT: ARUSHI, CHLOE, ANJINI, AMY, NATHAN, MAGGIE, MEGAN, ALICE, DANIEL

NEW REPS: ANNA LI, AND MOHINI

### PROGRAM UPDATES

#### RESEARCH PAGE

—Enough responses to update the website (About 40 responses)

—Please visit the below link or go: [arc.caltech.edu](http://arc.caltech.edu) > Resources > Interactive Research List

—<https://sites.google.com/site/arccaltech/resources/interactive-research-list>

#### STUDENT FACULTY LUNCHES

—Coming up in late February

#### COURSE COMPLIMENTS

—Updated on the website

—Please submit compliments about your Profs, TAs, or Dean's Tutors

#### COURSE CAPTURE

—Nothing will be recorded this term. Stay tuned for next term.

### POLICY UPDATES

#### MATH 1A, SECTION 1

—Survey through UG list

—Good or bad thoughts are welcomed across all years

#### OPTION ADVISING

—Update from the 2019 SFC, the Option Advising Program in Physics is being slightly postponed. The ARC will continue updating in the future.

## ASCIT BOARD OF DIRECTORS MEETING MINUTES

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

Officers Present: Sarah Crucilla, Varun Shanker, Rachel Sun, Arushi Gupta, Yuying Lin, LC Chen

Guests: Jen Yu

Call to Order: 8:06

PRESIDENT'S REPORT (VARUN):  
Appointed Social Director Manager  
Bylaw amendments

OFFICER'S REPORTS:

V.P. OF ACADEMIC AFFAIRS (ARUSHI):  
Midterms  
SFL 2/22  
Course Compliments

V.P. OF NON-ACADEMIC AFFAIRS (SARAH):  
Rotation survey  
Avery Interhouse

DIRECTOR OF OPERATIONS (RACHEL):  
New Tech published

TREASURER (YUYING):  
Invoice for formal  
Reimbursements

SOCIAL DIRECTOR (IRENE):  
Not present.

SECRETARY (LC):  
Nothing to report.

GUESTS:

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: 8:50

## NEWS TICKER

JOSHUA PAWLAK | CAMPUS NEWS

### LEADERSHIP WEEK STARTS TODAY

With great power comes great responsibility! The ORE is hosting a series of training workshops this week to prepare newly elected student leaders. The training kicks off with "Student Leadership 101", "Construction 101", and the "New House Presidents Dinner", which are all happening today, and finishes with "Leadership and Liability" on Friday. See the complete schedule here: <http://bit.ly/39CnFyP>

### CALTECH THEATER PERFORMANCES BEGIN FRIDAY

The theater presents a set of plays in a series titled "Bradbury One Hundred", in honor of the birthday of the late author and screenwriter Ray Bradbury. The first three plays ("All Summer in a Day", "Marionettes, Inc.", and "The Martian Chronicles") are performed this Friday, Saturday and Sunday. The following weekend's performances features "A Sound of Thunder", "The Flying Machine", and "The Martian Chronicles".

### SURF PROPOSALS DUE SATURDAY

Because we haven't mentioned it enough yet. Don't let your mentors down—those proposals aren't going to write themselves!

### CALTECH AWARDED \$1.1 BILLION IN APPLE-BROADCOM PATENT LAWSUIT

A jury found that tech companies Apple and Broadcom violated Caltech patents on Wi-Fi chip technology, owing \$838 million and \$270 million respectively. In a statement, the university expressed that "Caltech is committed to protecting its intellectual property in furtherance of its mission to expand human knowledge and benefit society".

### OPI NEXT WEEKEND

The Rudds have been working on it for months now...it's got to be great! Right?

## REVCOMM ELECTIONS ANNOUNCEMENT

Nominations for the following elected ASCIT positions: **Vice President for Non-Academic Affairs, Board of Control Chair, Board of Control Secretaries, Board of Control Unaffiliated Representative, and Editors of the California Tech**; and for the **student co-chair of the Institute's Conduct Review Committee**, will open next **Monday, 24 February** at 8:00 and close **Friday, 28 February** at 17:00. Elections will occur **Monday, 9 March** from 10:00 to 24:00. See Bylaws Art. VII for more details.

Respectfully Submitted,

Alejandro López

ASCIT Review Committee Chair

## DISCO INFERNO: PHOTOS FROM RICKETT'S INTERHOUSE

PHOTO COLLECTION



More pictures taken at the Ricketts Interhouse, which had the theme "Disco Inferno". Toussaint Pegues.

## ADVERTISE IN THE TECH!

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## ARC TIP OF THE WEEK

The schedule for Spring Term has been released! Now, you can make your schedule in time for registration on Feb. 27th.



## DO PEOPLE READ THE TECH?

JOSHUA PAWLAK | ANALYSIS

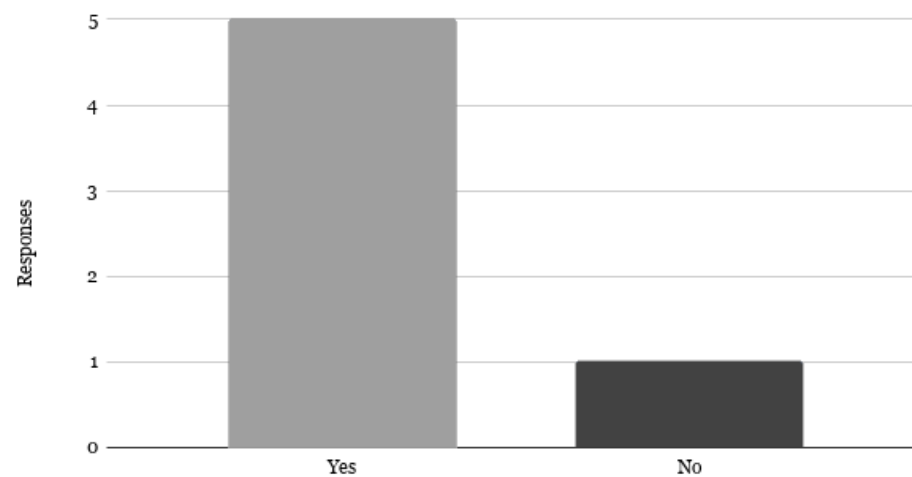
In honor of the SURF proposals deadline this week, the *Tech* staff conducted our own research project! Last week, we put a QR code on page five of the *Tech*, which linked to a Google Form asking the simple question, "Literally, did you read far enough to see this form and go through the effort to open it?"

### EXPERIMENT GOALS AND METHODS:

Determine how many people read the *Tech* in detail using a QR code which links to a simple Google Form. The number of responses will provide insight into how many people read the *Tech*.

DATA:

Figure 1. Survey Responses



DISCUSSION:

We received 6 responses to the survey, with just one "No" response.

CONCLUSION:

No, people do not read the *Tech*.  
*Good luck on those SURF proposals!*

## LETTER FROM THE EDITORS: THE IMPORTANCE OF A CAMPUS NEWSPAPER

J. PAWLAK & D. HARTZELL | EDITORIAL

A college campus newspaper plays a crucial role in fueling student culture. It provides a way for students and faculty alike to stay informed on what's happening on campus. At the same time, it also is a way for students to express their opinions and gain a voice that can be heard throughout the community. It is uniquely positioned as both a mechanism for keeping student culture alive internally and presenting it honestly to the outside world.

Thanks to their relative independence, campus newspapers have the freedom to facilitate conversations between different parties at a university. Thanks to student newspapers, the 1960s Berkeley protests were sustained for long enough to produce meaningful changes on that campus. Thanks to student newspapers, countless questionable decisions on the part

of university administrations have been brought to light and reversed through student activism. And thanks to student newspapers, Caltech still has house Rotation.

The *Tech* is no different from any other university newspaper. Although we lack the sheer volume of students that other colleges offer, we make up for it with our vibrant student life, which is every bit as alive as at any larger campus. Rotation, interhouse parties, and our tight-knit student body comprised of some of the finest minds on the planet are just a few of the things that make us unique.

To a certain extent, we owe the fact that these things still exist to the presence of the California Tech. It serves as a watchdog on campus, ensuring that decisions are made that fairly and effectively represent the interests of

the students who attend Caltech.

With this importance in mind, we're proud to publish our second issue of the *Tech*. It's far from perfect, but it represents hard work and dedication to the cause of journalism that we think is important to exist on this campus. As our feature article, we've chosen to highlight a recent issue with Caltech parking, bringing to light some aspects of the issue that have perhaps been missed by students.

We've selected some several topics to discuss in this issue that we hope students care about, from SURF proposals to Valentine's Day.

As always, we want to hear from you, our readers. We love to hear how we're doing—both the good and the bad. All of our hopes of being a voice for students is for naught if we don't hear from any of them. So, to conclude, as always...

Write for the *Tech*!

## THIS WEEK IN HISTORY: STUDENTS PASS PASS-FAIL SYSTEM FOR FROSH

CALIFORNIA TECH | FEBRUARY 17, 1966

Results of the Educational Policies Committee's poll on the pass-fail system for freshman grades were presented to the Faculty Committee on the Freshman Year Tuesday night. Student opinion was overwhelmingly in favor of a pass-fail system in some form or other: only 8.3% wanted it terminated immediately, while 26.3% wanted to extend the system to upper-class courses as well.

RESPONSE

Student response was good with 425 of 670 polls returned, and the Faculty Committee noted that considerable thought and care must have gone into students' answers. Cross-checks of several questions revealed an encouraging consistency of answers. For example, students' estimates of outside hours spent on courses compared very well with results of previous polls by instructors.

Some of the reasons Teckers like the system are that it reduces pressure (89.6% thought so), that it gives frosh more free time (89.1% concurred), and that it eases the transition from high school to Caltech (79.5% agreed). Many people noted that lack of grades is the great equalizer; it gives the student from a poor high school a chance to catch up with the well-prepared

troll who idles away his time.

Response to the question, "Do you consider yourself happy at Tech?" was about as would be expected. Of the frosh, 74.0% are happy, while only 64.7% of the sophomores are still grinning after the shock of grades, and 67.2% of the upperclassmen are inured to the place.

HONORS WORK

Grades had a drastic effect on Honors Work. Although 59.1% of this year's frosh are in the Honors program and 49.5% think they would continue even with grades, 46.9% of last year's frosh were in the program and only 22.0% of them have continued this year. Furthermore, only 19.2% of the disillusioned sophs said they would have done frosh Honors Work if they had had grades.

The math faculty's suspicions were confirmed in the section dealing with outside class work, as the frosh spent only an average of 4.0 hours a week on math. They spent 6.4 hours snaking physics, 5.9 hours on humanities, and 4.7 hours on chemistry, for a grand total of 21.0 hours. On the other hand, last year's frosh only snaked 20.7 hours a week—3.4 on chern, 5.4 on physics, 5.9 on math, and 6.0 on

humanities. They made up for it as sophomores, however, spending 21.3 hours a week. Math 2, appropriately enough, took up 6.9 hours, while they slaved for 5.3 hours in physics, 5.0 in history, and 4.1 hours in organic chemistry.

MOTIVE FOR CRIME

"To what extent do you feel that you are motivated by grades to learn?" On the average, 20.3% of you are heavily grade motivated, 56.4% are moderately so, and 22.4% acknowledge little to no grade motivation.

There was a fairly wide division of opinion on what to do with graphics. Only 18.2% thought it should be required, while 29.0% thought it should be abolished, and 48.0% thought it should be an elective. The last suggestion was kicked around at Tuesday's meeting, and although no conclusions were reached, the idea of making available additional three-unit "skill" electives, such as computer programming or technical instrumentation, was discussed.

While the questionnaire clearly indicated student approval for the pass-fail system, the Faculty Committee emphasized that this is only one of many factors that will influence the faculty's final decision when they decide the fate of the system in April. Other important factors will be the opinions of advisors, instructors, and

## FEYNMAN PRIZE FOR TEACHING

DEVIN HARTZELL | REPORT

| FROM PAGE 1 |

The committee highlighted the level of attention Professor Hunt gives to her students, starting homework sessions for ME 11a in her office, and dedicating extensive one-on-one time to her students at all levels.

According to the committee, student nominators enjoyed "some of the most interesting examples both in class and for homework that we have ever had the pleasure of struggling through" in Professor Hunt's courses. However, the real impact of her teaching goes beyond her courses themselves; according to one student nominator, "the effectiveness of Professor Hunt's teaching became more apparent after completing her courses. Her emphasis on breaking complex, interdependent processes into manageable parts helped us do the same in the workforce...more effectively than our seasoned colleagues."

Furthermore, the committee also pointed out Professor Hunt's tireless advocacy for diversity and inclusion, through the Giving Voice project, and through the community she creates in her classes. In the committee's words, "we commend Professor Hunt for bettering the lives of generations of Caltech students, and for demonstrating the passion for teaching, the creativity, and the unusual ability that are hallmarks of the recipients of the Feynman Prize for Excellence in Teaching."

*Adapted from the recommendation on behalf of the Richard P. Feynman Prize selection committee by its chair, Geoffrey Blake, Professor of Cosmochemistry and Planetary Science and Professor of Chemistry.*

TA's, as well as strictly objective data, such as GPA's.

*Editor's Note: This article appeared in Volume LXVII, Issue 18 of the California Tech on February 17th, 1966. It covered the results of the first year testing the pass-fail system which has since become a staple part of the Frosh experience at Caltech. For a complete record of the Tech's history, visit [caltechcampuspubs.library.caltech.edu](http://caltechcampuspubs.library.caltech.edu)*

### EDITORS' NOTES

# Write for the *Tech*!

We're looking for writers for the *Tech*!

Email [tech@caltech.edu](mailto:tech@caltech.edu) if you're interested!

# PUZZLES: LOGIC GRIDS

RAY SUN | PUZZLES

In a logic grid puzzle, you are given a set of options that must be matched together. Each option is used once and only once. Your goal is to figure out which options go together based on a set of clues. Each puzzle has a unique solution that can be found with logical reasoning.

Use the grid to help you! You can eliminate pairs that you know do not go together by marking an X, and mark pairs you know are related with a dot or O. For example, in a puzzle about Caltech where house names are in a row and colors are in a column, if you know that the color of Ruddock House is not green, you can add an X in the box where the Ruddock row and green column meet. Likewise, if you know that the house color of Blacker House is black, you can mark a dot or O in the respective box. Furthermore, since every option can only be used once in any given puzzle, you can eliminate all the other options in that row and that column with X's.

Continue doing this for all clues that you have. Eventually you will have filled in enough of the grid to apply logical reasoning and find the solution.

## PUZZLE 1

Abbie is writing an article about some of the top-selling mobile apps released in the past year. Using only the clues that follow, help her match each app to its developer, month or release and estimated number of sales.

- The application released in March is not the one with 6.8 million downloads.
- The game with 1.5 million downloads wasn't developed by Vortia.
- Angry Ants wasn't developed by Vortia.
- Flowcarts was made by Digibits.
- Of the application with 2.3 million downloads and the application with 5.5 million downloads, one is Angry Ants and the other was released in May.
- The game released in April wasn't developed by BeGamez.
- The application with 1.5 million downloads wasn't developed by Apptastic.
- Vitalinks is not the app with 6.8 million downloads.
- The app released by Digibits was released 2 months earlier than Bubble Bombs.
- The application released by Apptastic was released 2 months earlier than the app with 2.3 million downloads.
- Bubble Bombs was released in July.
- Wizard World was released earlier than Flowcarts.
- Neither the app released in June nor the game released by Apptastic is Angry Ants.

		games					developers				downloads					
		Angry Ants	Bubble Bombs	Flowcarts	Vitalinks	Wizard World	Apptastic	BeGamez	Digibits	Novio	Vortia	1.5 million	2.3 million	5.5 million	6.8 million	8.9 million
months	March															
	April															
	May															
	June															
	July															
downloads	1.5 million															
	2.3 million															
	5.5 million															
	6.8 million															
	8.9 million															
developers	Apptastic															
	BeGamez															
	Digibits															
	Novio															
	Vortia															

Months	Games	Developers	Downloads
March			
April			
May			
June			
July			

## PUZZLE 2

Every year Simon takes an "adventure holiday" with a friend to some new location within the United States. Determine each trip's activity, state and year, as well as the friend Simon went with.

- The trip with Henrietta was before the skydiving vacation.
- The 2004 holiday is either the skydiving vacation or the vacation with William.
- The five trips are the 2005 vacation, the holiday with Isabel, the vacation with William, the camping vacation, and the hiking holiday.
- The vacation with Henrietta was 2 years after the hiking holiday.
- The 2002 holiday was not a cycling vacation.
- The holiday with Rochelle was 1 year after the skydiving holiday.

		friends					activities				
		Ellen	Henrietta	Isabel	Rochelle	William	camping	cycling	hiking	kayaking	skydiving
years	2001										
	2002										
	2003										
	2004										
	2005										
activities	camping										
	cycling										
	hiking										
	kayaking										
	skydiving										

Years	Friends	Activities
2001		
2002		
2003		
2004		
2005		

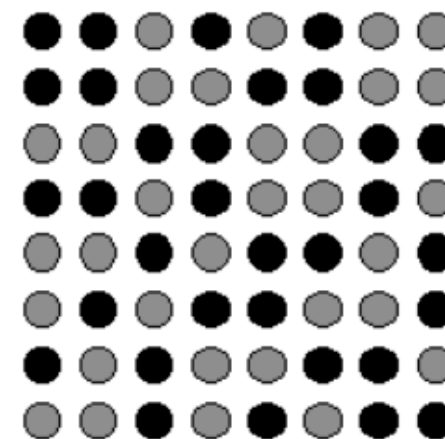
## PUZZLE 3

Pearl's cell phone stopped working this week, so she's decided to go shopping for a brand new one. Help her narrow down her choices by matching each phone to its brand name and storage size (in GBs), and determine the price of each.

- The Winnow XD is either the 2 GB mobile phone or the \$225 phone.
- The \$165 item has 2 GB more storage than the Winnow XD.
- Of the Winnow XD and the Eplex 7s, one is made by Volkia and the other costs \$75.
- The \$199 one isn't made by Andromeda.
- The \$199 mobile phone isn't made by Mobilex.
- The Alphason II has somewhat less storage than the \$75 item.
- The 4 GB phone isn't made by Mobilex.
- The Technitron one has 6 GB more storage than the Alphason II.
- The \$25 mobile phone, the Alphason II, and the Zenia 580 are three different phones.
- The 4 GB item doesn't cost \$225.
- Of the Volkia mobile phone and the Portimax C, one costs \$225 and the other has 10 GB of storage.

# ANSWERS TO LAST WEEK'S PUZZLES

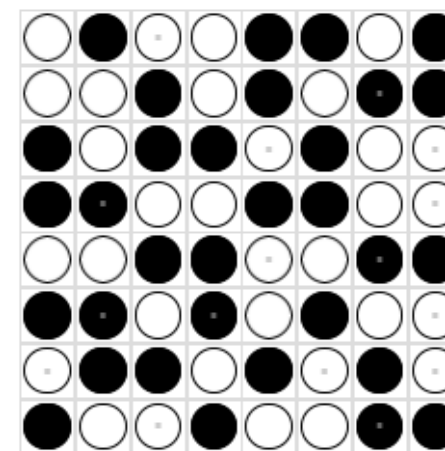
RAY SUN | PUZZLES



Puzzle 1. Glen George, EE 10b, Spring 2018

1	0	0	1	0	1	0	1
1	0	0	1	0	0	1	1
0	1	1	0	1	1	0	0
1	1	0	1	0	0	1	0
0	0	1	0	1	0	1	1
1	1	0	0	1	1	0	0
0	0	1	1	0	1	0	1
0	1	1	0	1	0	1	0

Puzzle 2. Daily Binario



Puzzle 3. Puzzle-Binario.

# CORRECTIONS

JOSHUA PAWLAK | EDITOR'S NOTE

As much as we wish we were, we aren't perfect! Here's a few corrections from the last issue of the Tech:

— On page one, we stated that Justin came in second place in the 100 Yard Breaststroke race. It was Austin Harvard.

— On page four, we published a bunch of nonsense as a description of Wayne Dinunzio. We don't really know why.

— On page eight, we stated that Lorenzo Shaikewitz is a contributing writer for the Tech. He is a columnist.

— We had several formatting errors that made some of the articles difficult to follow. It was a long night...





## PARKING POLICY CHANGES

DAVID MELISSO | FEATURE STORY

| FROM PAGE 1 |

If anything, it's easier to find a commuter spot in Holliston when people who live on-campus to begin with aren't leaving cars in the garage for weeks on end."

Some students mentioned the possibility of applying for Pasadena municipal parking permits, which cost \$79 a year and allow permittees to park on the street between 2 am and 6 am. A municipal website notes that "if parking is available, either free or paid, within 600 feet of your residence, the application will be denied." The closest distance between the South Hovses and the garage on California Blvd. exceeds this, as does the closest distance between the Bechtel Residence

and the Wilson Ave. Garage.

However, the application also states that "if there is adequate room to park all vehicles on the premises, the application will be denied." The city's interpretation of what constitutes "the premises" is unclear, so parking permits may still be denied.

Even if it were possible to apply for a parking permit, using solely street parking would be unfeasible. Firstly, the permit specifies that the "vehicle should be parked on any street within a 500 foot radius of a permittee's place of residence as designated on permit." For the South Hovses, this only allows for a small stretch of street parking on California Blvd. or Hill Ave. This does not leave enough room for all students to park their cars on the street. Secondly, cars cannot be parked on the street for a period of time longer than 72 hours. Constantly reparking would

make using a street permit impractical for many students.

Despite the inconvenience to some students, Onderdonk believes that the parking policy changes are a benefit for the campus as a whole. "The end result was that we needed to provide better services to our commuters and reallocate parking so that we avoid the need to build a new parking structure."

However, it remains to be seen how the administration will continue to shape parking policy to meet environmental and accessibility needs. According to Onderdonk, "we are actively working to develop more viable alternatives and programs that I think will significantly benefit the entire campus community."

For now, at least, the free Metro passes are popular; last week, dozens of students claimed theirs, and have

been using them to explore the city at no cost to them or the environment.

*Caltech community members can find more information about receiving their free Metro pass, utilizing commuter service incentives, or finding other general parking information at <https://parking.caltech.edu/>.*

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## NO. 21 WOMEN'S TENNIS PRIMED TO COMPETE WITH THE NATION'S ELITE

MARK BECKER | CALTECH SPORTS INFORMATION

The Caltech women's tennis team is just days away from embarking on a season-long quest to build upon one of the best collective seasons in modern program history. Head Coach Mandy Gamble and the Beavers are set to play 12 home matches over the ensuing three months and nine matches against currently ranked opponents.

Very little is expected to change for Caltech, currently slotted as Division III's 21st-ranked team by the Intercollegiate Tennis Association. The Beavers are set to return five of six starters, including juniors Sarina Liu (Rolling Hills, Calif. / Palos Verdes Peninsula) and Ankita Roychoudhury (Madison, Conn. / Daniel Hand). Having grown together in the women's tennis program, Liu and Roychoudhury will be called upon to help guide a Caltech team with no senior presence on the roster. Liu has been a fixture as a middle lineup singles player since stepping on campus and finished 12-4 during the 2019 regular season while compiling an undefeated record against SCIAC competition (7-0). Roychoudhury, meanwhile is one of the team's most improved players over the past two years as well as one of the most experienced with 39 regular season singles matches under her belt.

"It's very exciting to have two established leaders on the team in Ankita and Sarina," Gamble said. "I am very impressed with the way they stepped up at ITA's in the fall. The team leadership is really strong and we want to continue to build, stay invested and improve. In that regard, nothing much has changed."

Sophomore Anna Tifrea (Fullerton, Calif. / Troy) is set to shoulder the load as the Beavers' top singles player. Tifrea had a hugely successful rookie season, going 12-5 during the regular season while playing all her matches at second singles. The second-year standout also carries a solid doubles track record, as her eight wins in 2019 ranked behind only Liu among returning players. Tifrea even gained some championship-level experience when she combined with the recently graduated Kana Moriyama '19 to represent the Beavers in the women's doubles final at The 119th Ojai Valley Tournament at the end of the spring. This year, the sophomore will look to stand tall against the toughest competition the SCIAC has to offer and could

quickly break into the ITA West Regional Singles Rankings with a string of early season triumphs.

Joining Tifrea among returning sophomores are Jennifer Yu (Queens, N.Y. / Stuyvesant) and Michelle Hyun (Cerritos, Calif. / Gretchen Whitney). Yu shared some of the success Tifrea had as a rookie singles standout, railing off 13 regular season wins while enduring just one defeat. The sophomore also dispatched all five of her SCIAC opponents in 2019 while playing primarily third singles. Hyun, meanwhile battled injury woes for much of her rookie season but overcame them with a fierce competitive drive and picked up seven singles victories along with six collective doubles wins.

While the singles lineup and doubles combinations could vary from match to match, the Beavers have enough to offer in all facets of their lineup to give fits to some of the nation's very best teams as they look to improve on a national ranking that topped out at 18th in the previous season.

"We have six very good tennis players and expect to be a strong team again," Gamble said. "All six players will have a chance to be strong points for us at their respective positions in the lineup."

The sixth player on this year's women's tennis roster is freshman Nina Solovyeva (Houston, Texas / Memorial). The Texas native is expected to bring a groundstroke-heavy attack to a Caltech lineup which already includes several hard hitters. She also brings with her state championship experience. Having already integrated nicely into the talented Beavers' roster, Solovyeva will have every opportunity to make immediate contributions in 2020.

"Nina is fantastic," Gamble said. "The team has done a good job of including her from Day 1 in all activities so it's been a good transition. Nina is serious tennis player and really good competitor. We are excited to have her."

Gamble and the Beavers are set to begin the regular season on Saturday, Feb. 15 when they face off with No. 34 University of Redlands on the road. The Bulldogs finished fourth among SCIAC teams in 2019, one spot behind the Beavers, and will represent a tough but manageable early season test.



Photo credits: Mark Becker

## PERSONAL RECORDS SET FOR MEN'S TRACK TEAM

TEA FREEDMAN-SUSSKIND | SPORTS

On Saturday, February 15th, the Caltech Track and Field team traveled to the Pomona-Pitzer course for the first outdoor meet of the season. Sixteen Caltech men and ten Caltech women competed in eleven running and jumping events over seven sunny hours, with some of the team achieving personal records (PRs) in a jumping off point for what promises to be the Beavers' best season yet.

"It was really great weather, it was really exciting to be out there on the track competing," said Kyle Piper '23. "It was a good way to dust off the rust."

Dust off the rust, they did. Nora Griffith '21 won her heats in both the women's 200 meter and 400 meter races, and Jesse Cai '20 won his heat in the men's 200 meter race.

But despite these impressive results, the focus was always on the meet's place as a stepping stone towards greater things to come. "It was good to see some stuff we've been working on come into play but also to know that there's a long way ahead," said Erik Imathiu-Jones '23, "and get to see what needs to be worked on still in an actual competition environment, so that was very nice to see progress but also know that we have a long way to go."

The team can look forward to a season stretching to late May with seven meets until the SCIAC championships

on April 24th and 25th at Occidental College.

Team members were especially impressed with the performance of senior Tiger Lu '20 in the one mile race. "[Tiger] looked pretty speedy out there," praised fellow senior distance runner Bhairav Chidambaram '20, "I think it was a PR, he ran like 4:38 in the mile which was pretty awesome." Imathiu-Jones echoed his commendation, adding, "I had the chance to watch Tiger and Marcos [Perez '23] run the mile and I think they both PR-ed and it was kind of crazy to see them keeping up with the heats they were in respectively and really show out, I saw Tiger gave it his all... that was amazing to see."

But, he noted, "if I had to start I'd have to shout everyone out, so good job." With athletes achieving personal records in the first meet, the team's 2020 season promises to be an exciting one. Said Imathiu-Jones, "we always joke about how bad athletics are here, but it was kinda cool to see the white jerseys be first in so many things and even be top in a lot of things." In this meet, Caltech Track and Field showed that they're a force to be reckoned with.

*Tea Freedman-Susskind reports on Caltech sporting events for the California Tech.*