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TECH@CALTECH.EDU

SECURITY CANCELS PH 101 DEMO

ANGELICA ZHOU | NEWS

Every year, Professor Sterl Phinney leads Ph 101 students to the tallest building on campus, Millikan Library, for the Millikan Ball Drop experiment. This activity entails releasing basketballs and other assorted objects from the roof above the nine-story library. On Monday April 22, 2019, a tradition that remained unobstructed for 30 years was suddenly curtailed when the reorganized Caltech Security team showed up 35 minutes late and deemed the experiment unsafe because students were not secured in harnesses. In 1989, Professor Phinney invented the Ph 101 course, Order of Magnitude Physics, upon recognition that “students knew how to solve complicated equations but didn’t necessarily understand which ones were important.” The unique course exposes physicists and other curious students to exercises involving estimates of everyday events. Homework sets cover questions such as: Would the energy of all the calories you have consumed as food be enough to eject you from the solar system? In this manner, the second homework asked students to estimate how high a basketball would bounce when dropped from a flying plane, and if this would be different for a basketball dropped from

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Phinney finds fault in Ph 101 fiasco.

Sammy Piascik | Contributing Photographer

ASCIT HOLDS \$170,000 IN ASSETS

ALEX KROTZ | NEWS

ASCIT’s annual budget fails to disclose the majority of its assets. Despite being independent of Caltech, ASCIT appears to allocate only that year’s membership contributions to its budget. Any remaining funds are placed in reserve accounts that are not clearly disclosed on annual reports. The annual budget published by ASCIT generally outlines expenses however fails to mention a \$90,000 investment account and over \$80,000 in cash reserves.

All undergraduates that matriculate to Caltech are by default members of ASCIT and pay an annual membership fee contributing in excess of \$140,000 which is allocated to student activities. In addition to contributions from members, ASCIT receives funds from the Moore-Hufstедler Fund for special events like the annual ASCIT Formal. When questioned by reporters in regard to their available finances ASCIT initially failed to disclose these sources of potential funds. “It’s not intentional” ASCIT Treasurer Dana He said. “We’ve been budgeting for more than one year’s worth of revenue, but a lot of times the funding we allocate never gets spent.” While it is at the discretion of ASCIT to make use of its funding it is clear that ASCIT has made no effort to do so, choosing to reserve funds without disclosing them.

BIOLUMINESCENT BLINTERHOVSE

BRITTANY PERCIN | REVIEW

A magical display of glowing colors, water features, and flowing fauna brought the bioluminescent world to Blacker Interhovse last Saturday. Party goers stepped through the gates and were immediately met with towering columns, emerging from a glowing pool of water, reminiscent of the ancient ruins of Atlantis. The dance platform was accessible via a walkway suspended over the pool, with jets of water arcing gracefully overhead. Entering the lounge, people were met with a cascade of hand-made leaves hanging from the ceiling. The forest section of the masterpiece was brought together by a mural headed by Jenna Colborn. Heading to

the dining hall, dozens of mysterious glowing bottles lined the walls, while platters of food covered the tables. Beyond the typical chips, brownies, and veggie/fruit platters, pigs in a blanket, Oreo popcorn, and Rice Krispie sushi rounded out the menu, with rainbow spaghetti continuing the colorful theme.

Much like the ruins it represents, this aquatic masterpiece was an incredibly time intensive project. According to Junior Sarah Crucilla, the columns alone took over 24 hours to put together, with multiple Hovse members pitching in. Even getting approval for the use of water features was a serious time investment. For the past few weeks of building, students balanced their coursework with this gargantuan project, with many pulling back to back all-nighters, or surviving on little to no sleep in order to get the spectacle completed. While the end

result was nothing short of mesmerizing, was it worth it?

Blacker’s culture of building elaborate Interhovses has been a source of pride for the Hovse for years. From flooding the courtyard, to multiple story dance platforms, the Moles always seems to outdo themselves from year to year. Yet the intense building comes with a price. Caltech students are often busy enough without trying to balance a combined hundreds of hours of extracurricular activities. To add to the pressure, building had to be completed a day earlier this year, cutting down the precious last-minute hours. Students can fall behind on sets, and with midterms right around the corner, and freshman no longer on Pass-Fail, the couple weeks of intense building can have long term

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APPROVED REVISION TO BLACKER ROOM ALLOCATIONS RESCINDED

SHERRY WANG | NEWS

Earlier in April, Blacker Hovse voted to allow some singles to be converted into doubles in order to accommodate more students for room picks this year. The understanding with the Assistant Director of Undergraduate Housing, Joe Bennethum, was that such a change would be acceptable as long as all the necessary furniture fit into the rooms and that such changes would be permanent going

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Courtyard construction and glow-in-the-dark decorations at Blinterhovse.

Ethan Jaszewski | Contributing Photographer

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Ethan Jaszewski | Contributing Photographer

Tented blacklight lounge at Blinterhovse.



Ethan Jaszewski | Contributing Photographer

Suspended decorations glitter in Blacker's dining hall.

BIOLUMINESCENT BLINTERHOVSE

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consequences. Furthermore, while the pressure to build comes from the Hovse as a whole, a handful of members end up picking up the slack and finishing the job. However, every year, they still manage to impress.

Despite the cost, the production was an enormous success. Much like years past, Blacker wowed the campus with over the top construction, refusing to allow their creativity be stifled by four-foot platform rules, administrative requirements, or shortened deadlines. As per their motto, "Nothing is worthwhile unless it is difficult", and while this was most certainly not the easiest Inter-house to build, it was also one of the most spectacular.

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APPROVED REVISION TO BLACKER ROOM ALLOCATIONS RESCINDED

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forward. At 2pm on April 24th, after the early Bechtel lottery, the Blacker Secretary received an email from Bennethum approving the change as discussed in previous communications. However, around 5pm that day, Bennethum sent a follow-up email rescinding the approval, stating "While Maria [Katsas, Director of Housing] and I were trying to help out with the concerns about space in the house, we were told this afternoon that we are not allowed to make changes to the capacity of rooms at this time." In following emails, Bennethum disclosed that Vice President of Student Affairs Joe Shepherd had not been consulted in the process of approving the capacity change so Bennethum and Katsas were not aware that Shepherd would prohibit any increase in House capacity.

Shepherd's reason for vetoing the change was that he "didn't want changes to be terribly disruptive" and that students who wanted to live on-campus had the option to pick into Bechtel. Communications between Blacker and Bennethum indicated that both sides expected the change to be approved, so rescinding the change after the early Bechtel lottery round had already ended placed those students who had expected to be able to pick into Blacker (under the increased capacity) at an unfair disadvantage in the housing lottery system as a whole. Without an accurate representation of capacity in House lotteries, those students would not be able to make an informed decision about their preferences regarding Bechtel, and therefore participate in the early Bechtel lottery in a meaning

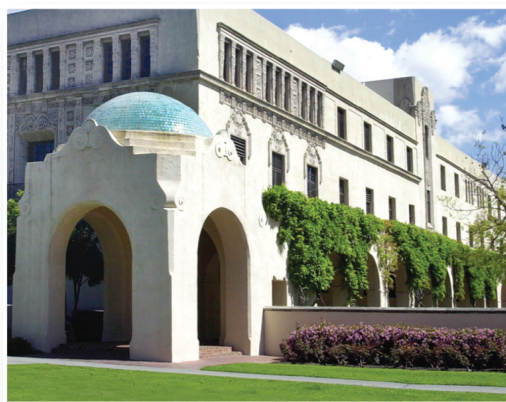
INTRODUCING: RAD

Looking for lonely Techers!

We know you have trouble finding a date at this school. The staff of *The California Tech* has found a solution to all your dating woes:
RAD (Random Access Dating)!

If you fill out the survey at tinyurl.com/CaltechRAD, you have a chance of going on a date with another random Techer that fills out the survey. Dates will happen Saturday at 7 pm. Transportation and food costs will be covered.

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ASCIT BOARD OF DIRECTORS MEETINGS

Minutes for 21 April 2019. Taken by Rachel Sun.

OFFICERS PRESENT: Sakthi Vetrivel, Erika Salzman, Sarah Crucilla, Varun Shanker, Alice Zhai, Dana He, Rachel Sun

GUESTS: Alejandro López, Albert Nazeeri

CALL TO ORDER: 8:15 PM

President's Report (Sakthi):

ASCIT Elections are tomorrow. Open invitation to Tuesday Night Bowling with Sakthi (President's Office Hours). Feel free to email her.

OFFICER'S REPORTS:

V.P. OF ACADEMIC AFFAIRS (ERIKA):

GDB/Valgrind software seminar happened yesterday. Termly ombuds training is happening Friday at 12:15 PM in the CTLO. ARC just published Research FAQ on the ARC website. Having a meeting this week with Math Option Rep and EO about quality and attendance of math lectures. Working with occupational therapy to develop a Frosh Guide (e.g. staying on track academically, study habits).

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

Ruddock Frosh Party happened last night. Blacker Interhouse is next week and someone from Blacker will go around to all the houses to talk about rules and safety. IHC has minutes and the summary is going in the Tech: Assigned various liaisons of IHC to different offices that they work with, Discussed updating the Cases of Concern Committee. Met with Felicia and now have a timeline of deadlines for things to get done. Planning on reaching out to all students in Bechtel to get an idea of their experience.

DIRECTOR OF OPERATIONS (VARUN):

Nothing to report.

TREASURER (DANA):

Nothing to report.

SOCIAL DIRECTOR (ALICE):

Sphere Search happened early this morning. Color Me Mine event will be next Sunday; an email will go out about that soon.

SECRETARY (RACHEL):

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: 8:33 PM

Minutes for 28 April 2019. Taken by Rachel Sun.

OFFICERS PRESENT: Sakthi Vetrivel, Erika Salzman, Sarah Crucilla, Varun Shanker, Alice Zhai, Dana He, Rachel Sun

GUESTS: Arushi Gupta, Irene Chang, Yuying Lin, Alejandro López, Ben Cassese

CALL TO ORDER: 8:35 PM

PRESIDENT'S REPORT (SAKTHI):

ASCIT Elections happened. The new officers will be instated 5/13. Discussing FCC selection process with the Deans. Please talk to Sakthi if there are any concerns.

OFFICER'S REPORTS:

V.P. OF ACADEMIC AFFAIRS (ERIKA, ARUSHI):

Ombuds training was supposed to happen on Friday, but not enough people showed up so the information was distributed electronically. Published a research FAQ page on the ARC website. Sent out an SFC feedback survey and still waiting for more responses. Having a math core meeting this week to discuss math lecture attendance. ASCIT Teaching Award nomination sign-ups are up. Will be appointing new ARC Secretary and At Large Reps soon.

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

Sign-ups for revcomm, stewcomm, ath manager, and food comm are on olive walk and will be taken down on Wednesday. Meetings to appoint those positions will happen afterward. IHC has met to discuss things that can be viewed in detail on their *Tech* article: Room picks results and the effects of the changes to Bechtel picks, Concerns with changing the FCC selection process.

DIRECTOR OF OPERATIONS (VARUN, RACHEL):

Rachel and Yuying will be meeting with the Tech editors, Tom Mannion, and other administrators tomorrow 4/29 to discuss improvements to *the Tech*.

TREASURER (DANA):

Sakthi and Dana finished ASCIT taxes this week. *The Tech* will be writing an article about ASCIT's finances.

SOCIAL DIRECTOR (ALICE):

Blacker Alternate Interhouse event happened yesterday 4/27. Color Me Mine event happened today. ASCIT Movie Night is happening tomorrow 4/29. Thinking of ideas for a midterms destressing event.

SECRETARY (RACHEL):

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: 9:45 PM

IHC WEEKLY UPDATES

ALICIA TIRONE | IHC SECRETARY

This week, the IHC discussed Blacker Interhouse, which went well with zero transports. We also briefly discussed the effectiveness of having an extra on call person in the Houses. Some members of the IHC felt it was not very effective. We briefly discussed Dabney Interhouse (which is in a few weeks) and noted there were fewer alcohol concerns since it is a dry party. We also discussed roompicks and Bechtel filling. Some Houses had issues with students signing up for House picks with the intent of picking into Bechtel later on. There was some confusion over the how the room picks process worked, and since people could not be certain of their Bechtel status, people had difficulty deciding on housing plans. This made it difficult for houses to handle the resulting overfilling of rooms when they had to account for groups picking into the House that would have preferred Bechtel as a first option. All Houses except two filled to capacity.

One topic up for discussion as well was orientation and Frosh Camp. Many details of Frosh Camp are still being decided such as where frosh camp will be held. The ASCIT BoD has also proposed changes to how FCCs are chosen. The IHC is unclear on what the current proposal is and are waiting for updates from ASCIT about what these changes will be.

Finally, sign-ups for numerous officers are still posted on the Olive Walk. They will be taken down next Wednesday. We are looking for more ways to reach out to upperclassmen and solicit input from all parts of campus. If you have comments, you can now submit feedback at bit.ly/IHCFeedback and leave your name if you want me to get back to you. You can also email 2019ihc@googlegroups.com or email me directly at atirone@caltech.edu. Open IHC meetings are 12PM every Sunday in SAC 13.

ARC MEETING MINUTES 4.21.19

PRESENT: Arushi Gupta, Erika Salzman, Olivia Grabowsky, Schuyler Dick, Daniel Neamati, Michael Yao, Amy Wang, Alejandro López, Sophie Howell, Nathan Suri

Ombuds Training had 5 signups and was cancelled for the term. Contact Arushi (arushi.gupta@caltech.edu) if you would like the material from the meeting. The ARC Research FAQ Page is up. Students are recommended to visit the arc.caltech.edu > Resources > Research FAQ. We have 4 new course compliments this week! View compliments at arc.caltech.edu > Programs > Course Compliments. Remember that students can add their name to the form to have the opportunity to win a lunch/dinner with a professor, instructor, or TA! The SFC Survey has been sent out to all undergraduates. We are looking to find out why students came or did not come and if there are ways we can improve the SFC experience for future years.

ASCIT Teaching awards are still out! Students can nominate a professor! Plus, Secretary and At-Large Representative positions are posted under the RF Arches. We highly recommend that students sign up by Friday 5pm. Faculty Board Committee appointments will be out in a few weeks. Lastly, the ARC discussed the new Frosh Guide from Occupational Therapy. This guide includes content for frosh to reflect on the throughout their first year and to help frosh stay on track.

SUBMITTED BY: Daniel Neamati

ARC TIP OF THE WEEK

Remember that you can submit Course Concerns and Course Compliments! Concerns can be submitted through Donut and Compliments can be submitted through the ARC website.

CDS IS MOVING TO THE BIG 8 ALLERGEN SYSTEM

The Big 8 refers to the eight major allergenic foods: milk, eggs, fish, crustacean shellfish, tree nuts, peanuts, wheat, and soybeans. According to research, of the 10% of Americans that have food allergies, 90% are allergic to at least one of these 8 foods. A shift to this system would ensure that students with such allergies are supported with respect to their dietary restrictions. Under this system, food handlers will avoid cross contact with allergens during the preparation and serving process.

SECURITY CANCELS PH 101 DEMO

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Millikan library. The Millikan Ball Drop experiment has been performed since the very beginning of the course, and students are often allowed to bring various safe objects including index cards, large poster boards, soccer balls, crumpled paper, zumba balls, super balls, and golf balls. From the ground, Phinney films these drops and the rebounds in slow motion to analyze the rebound heights in different frames of video. Many of these objects actually reach terminal velocity after the nine-story Millikan drop, and the area is clearly blocked off so that passersby do not cross the drop zone.

In an interview with Professor Phinney, he explained the history of working with security on this regular experiment. Phinney has always emailed the director of security in advance to schedule the event. The involvement of security is absolutely necessary to grant roof access to the TAs, who are in charge of the dropping. Atop the library, they then spend about 10 minutes performing the experiment with various objects, and then exit for the security officers to lock the door again. Working with the security team has caused no impediments to the experiment in the past.

The procedure this year was more convoluted. Phinney emailed Victor Clay weeks prior to the planned date and never got any response. He called and was referred to Christina Matthews and eventually the appointment was confirmed. The class of 60 arrived early the day of the event at 12:55 pm, but there was no sign of security. Phinney called Matthews once at 1:05 pm, and again in ten minute intervals only to learn, after a few attempts, that security had run into an emergency across campus. He would have liked this update sooner, as the students were left waiting

for a total of 35 minutes before security arrived at 1:30 pm. When the three security officers arrived, one led the TAs up to the roof, and the other two made phone calls to the Business and Grounds Coordinator, and Student Affairs. Professor Phinney began informing them that this was not a student activity. Because the scheduled event was instead an academic course activity, the officials phoned had no record of the experiment. The security team then concluded that the demo would not be allowed, especially not without safety harness training. In the days since the canceled event, Professor Phinney has consulted with administration and reports that “It has now officially been concluded that security contacted all the wrong people, and gave them incorrect information (e.g., that it was a student event, not an academic one), leading to the cancellation.” Both administrators contacted claim that their offices should never have been involved in the first place, and security later admitted they were unaware that the policies were different for non-student events. The correct way to double-check procedures and regulations would instead have been to contact the Chief of Safety. Phinney states, “this is the the way it’s been for the last 30 years, and it still is the right procedure.”

The mention of a preventative safety harness for the first time in the history of the experiment took many of the involved by surprised. Professor Phinney captured a few photos of the rooftop from years past and pointed out the structure of the sides of Millikan from his office. It turns out that the Millikan parapet extends almost as high as the average student; there is barely enough room for someone to reach their hands over and drop a basketball. It would be nearly impossible to fall off the side of Millikan from the roof. Phinney observes that the one obstacle worthy of caution is when “you climb up the lad-

der, which is probably the most dangerous part.” To ascend to the parapet from the base of the roof, there is an 8-foot ladder that must be climbed. This is not completely risk-free, as a student could ostensibly fall down the eight feet, but students have been dropping pumpkins off the library without harnesses since 1972.

After the conflict, Phinney even stepped out of his way to perform an order of magnitude calculation, in Ph 101 style, of the cost of the time wasted by this botched security intervention. Assuming there were 60 students, waiting for 40 minutes, with a tuition valued at \$70,000 per year over 15 hours of class per week for 30 weeks, the total cost of the time works out to be about \$5000.

Phinney admits that he fully supports security’s decision to prioritize an emergency over this scheduled event, but would have liked to be informed sooner in order to optimize lecture time. The replacement of the bulk of the security force with Allied Universal students has disrupted the uniformity students were familiar with just a few months ago, but members of the community express that having well-informed officers with integrity is a priority. If the new security staff were better trained about procedures in general and researched this specific academic activity beforehand, the missed educational opportunity could have been redeemed in other ways. Ph 101 student Krittanon Sirorattanakul recalls, “we ended up having only half an hour of class instead of an hour and a half... and this class in particular is different from most other classes because it’s about order of magnitude, so there’s no rules on how to approach the problem. The more examples you see the better.” Sirorattanakul also told the story of a bike theft near his residence, which took place between his short window of sleep from 3:30 am to 5:00 am one morning. When Caltech

Security took the report, they promised to be in contact with him regardless of whether there was sufficient evidence to go through with the case. He has not heard back and has received no responses to his phone calls in the two months since.

Dean Gilmartin was at lunch with Phinney the day after the incident. After investigation, Gilmartin found that since the demonstration happens every other year and the security member who provided roof access had left Caltech, the current security staff were unfamiliar with the process. “It was clear to me that access was not granted as a result of a misunderstanding among some staff about the process for roof access by faculty” according to Gilmartin. “This situation has been corrected, and I am confident that the demonstration will continue in future as it has in the past.” Gilmartin also reiterated that Student Affairs is not responsible for faculty access to campus facilities, and they were not responsible for denying roof access to Phinney.

Minimizing danger is a valid goal for both staff and students, but many do not agree with the priorities and hasty decision-making habits of the current security force. Perhaps over time, the new team will better understand the needs of the community it serves. Professor Phinney elucidates: “The purpose of Caltech, I think, is to solely to educate students about science and and engineering. Everything else is just to support those goals and actually is funded by those goals.” Over the years, he has observed that this “used to be pretty well recognized by all the staff. As the bureaucracy has grown inexorably, certain branches have lost sight of that fact and think that students and faculty are nuisances and the important thing is now the bureaucrats, not the other way around.”

MUELLER REPORT REVEALS TRUMP'S ATTEMPTS TO CURTAIL INVESTIGATION

ALEJANDRO LÓPEZ | NEWS

Following a nearly two-year long investigation, on April 18th, the U.S. Justice Department delivered the highly anticipated redacted version of Special Counsel Robert Mueller’s investigation to Congress and the public. The report is divided into two volumes; the first focuses on Russian efforts in the 2016 election and links and connections to the Trump campaign, and the second focuses on whether U.S. President Trump obstructed justice in relation to investigations on Russian interference and connections to his campaign. Much of the second volume chronicles Trump’s multiple attempts to alter the course of these investigations, some of which were only prevented by Trump’s own staff refusing to comply with his requests.

The report concludes that Russia intentionally tried to influence the election through social media and by obtaining material on Democratic candidate Hillary Clinton through hacking. It details efforts made by the Russian government’s “Internet Research Agency” (IRA) to disseminate information in support of Trump’s campaign through Facebook and Twitter accounts. IRA-run accounts made over 80,000 Facebook posts which reached at least 29 million people in the U.S. It targeted people and social media accounts across the political spectrum, creating Facebook groups purporting to be black so-

cial justice activists, religious groups, conservative groups, and LGBTQ activists, with names like “United Muslims of America”, “Don’t Shoot Us,” “LGBT United,” “Being Patriotic,” and “Secured Borders” – some of which had hundreds of thousands of followers. Some U.S. politicians even retweeted tweets from IRA controlled Twitter accounts, some of which had tens of thousands of followers. The report also describes how the Russian Federation’s Main Intelligence Directorate of the General Staff (GRU) hacked and strategically leaked emails from the Clinton campaign.

The report elaborates on previously known contacts between the Trump campaign and the Russian government, which included “business connections, offers of assistance to the campaign, invitations for candidate Trump and Putin to meet in person, invitations for campaign officials and representatives of the Russian government to meet, and policy positions seeking improved U.S.-Russian relations.” Ultimately the report concludes that “although the investigation established that the Russian government perceived it would benefit from a Trump presidency and worked to secure that outcome, and that the campaign expected it would benefit electorally from information stolen and released through Russian efforts, the investigation did not establish that members of the Trump campaign conspired or coordinated with the Russian government in its election interference activities.” In describing his prosecution and declination decisions, Mueller describes how the term “collusion,” which gained usage in popular discourse while the investigation was ongoing, is not a

legal term. Instead, Mueller’s team considered whether the Trump campaign’s contacts with Russians violated laws on foreign agents or conspiracy.

The second volume of the report focuses much more on Trump himself. It reveals much of the behind the scenes drama which took place in the White House as the investigation unfolded and looks into whether multiple episodes constituted obstruction of justice by Trump. The investigation itself began in May 2017 when Deputy Attorney General Rod Rosenstein appointed Robert Mueller special counsel to lead an investigation into Russian campaign efforts (as then attorney general Jeff Sessions had recused himself from overseeing the Russia investigation). The FBI had previously been conducting an investigation into Russian interference in the election, but President Trump fired FBI Director James Comey on May 9th, 2017. According to CNN, following the firing, Acting FBI Director Andrew McCabe began an investigation into potential obstruction by President

Trump. Eight days after the firing, following calls for the appointment from within the Justice Department (including the FBI), from legislators, and from the public, Rosenstein instructed Mueller to continue the FBI’s investigation. According to the report, after hearing of the appointment Trump became irate and within the following months, Trump directly instructed White House Counsel Don McGahn to fire Mueller. McGahn refused and decided to quit, telling members of Trump’s staff that the President has asked him “to do crazy shit”. Trump also told Sessions that he had “let [him] down” saying to him “you were supposed to protect me,” or similar words.

At the conclusion of the second volume, the Mueller team notes that they declined to make a traditional prosecutorial judgement on whether the President committed the crime of obstruction of justice. Mueller further states that although he did not charge Trump with obstruction of justice, the report does not exonerate him.



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Professor Shuki Bruck

paradise.caltech.edu

SMILING WITH SHUKI

JENNIFER DU | INTERVIEW

This week we sat down with Professor Shuki Bruck, who is a professor in the CNS and EE department. Among students, he is best known for teaching IST 4. We were able to talk to him about his hobbies, his wife, his approach toward teaching, and his feelings on Comic Sans.

What do you do for fun?

I love reading, travelling, and watching sports. My wife likes the first two especially, the reading and the travelling. We had some fantastic trips last year in 2018. We went to the Galapagos and to Ecuador. It was an amazing trip and then later in the year, we went to Japan for three weeks. We've travelled a lot together.

Travel gives you a perspective about life because it puts you in a mindset where you look at the world suddenly from a first timer's point-of-view. Even in Pasadena, it's fun to walk around, but we don't do it. But when we go to Japan, we suddenly pay attention to everything because it looks so different. It's called defamiliarizing, it's like trying to look at things as if you are looking at them for the first time. When we go on trips, it's very natural to do it, so I like the feeling of discovering in a new place.

How did you meet your wife?

We are from the same little place in Israel. Her name is Anat. She's a bit younger than I am, by a couple of years. We went to the same high school. We kind of knew of each other because it's a small place, but it was nothing more than that. And then in Israel you serve in the army; we both served in the army after high school. We met because I grew up on the beach, like Santa Monica. My parents lived walking distance, so we would walk barefoot and swim. I used to meet many people from my high school there. But one day when I was in college and my wife was in college, I took the bus because we didn't have cars. I took the bus at 6 am or so, and then she got on the bus. She sat next to me, we knew each other, and we talked. And then more or less since then we've been together!

I went to the Technion, which is like the Caltech of Israel. It's like a technical university, the Israel Institute of Technology. My wife studied to be a teacher, specifically a teacher for young kids.

Why did you choose electrical engineering?

I didn't have anyone to consult with, and there was no internet at that time. So I thought I would just go and apply for studying mathematics because in Israel, in the Technion, you have to declare your major when you enroll. But then I talked to someone and this person asked me why I study mathematics, and I said, "Well, it's my favorite subject." He said that it's one of the easiest majors to get into the university with, because no one wanted to do it. So I said, "What's the hardest one?" And he said electrical engineering. I read a little bit about that, and I thought that it was cool. There is a lot of mathematics and physics, and you could actually build things and so on, so I applied and got accepted. I loved it.

Why do you use Comic Sans in your lecture slides?

Honestly, I like this font. It feels the closest to writing on the board. I had no idea that there is some context around it (which I still don't understand). I know there is some issue with that and then by the time I discovered that there is a cult around it, it was too late. I was already used to Comic Sans. But I know every year the students have fun when they see Comic Sans. We have essays in IST4, and some students write the essays in Comic Sans too.

Do you think you'll retire?

It depends on the definition. If the definition is that I will do what I enjoy, then I am already retired. But if the definition is that I will formally be retired, it will probably happen at some point. I think it mainly depends on family constraints and health constraints. If I am still happy and healthy, then I will keep doing this.

If there is one thing you'd like your students to take away from your classes, what would it be?

The fact that I am smiling when I teach. I think at the end of the day, that's the main thing. Students should see that there is a possibility to really enjoy a topic, and that there is a joy in understanding ideas. That's what I'm trying to teach. And the other aspect is that I hope they can learn from my behavior as an example, how I treat them, how I respond to their questions, how I try to address their concerns, and if they need help, how I helped them. So at the end of the day, I hope that they will do the same when they are in a position when they teach or there are people that need their help. So those are the two things, respect for the other person and the joy of doing what we are doing.

What is one thing you would change about Caltech, if you had to change something?

First of all, I love Caltech. I really love Caltech. I came here in '94, the internet was at its beginning, and I could choose any domain name that I wanted. And I chose "paradise" because that's how I felt. I hope that we are able to maintain the culture because this is a unique place. It's hard for people from other places to appreciate that, but it is a unique place.

If you forced me to say one thing... I love the Caltech logo, the real logo. Where one hand is passing the torch to another hand. And I don't know what happened. It's not on our front page. If someone came to me and said, "You have one thing you can change." I'd say, "Put it back on the front page." It's on my lab webpage. It's not on the Caltech webpage. It's the best logo in any university worldwide because it really depicts the idea of why we are here, which is to pass the torch.

The California Tech

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EDITORS' NOTES

Please write for *The Tech*!

SWAFF'S PICKS VOL. 2

IZZY SWAFF | REVIEW

Another week; another playlist! This week's playlist features new music and some of my favorite artists. Be sure to check out this playlist, and other editions of "Swaff's Picks", on Spotify, and for next week's edition of "Swaff's Picks" featuring a review of the debut of Just Like Heaven Music Festival!

HUG OF THUNDER - BROKEN SOCIAL SCENE
Broken Social Scene is an amalgamation of the likes of Feist, Metric, and Do Make Say Think, with this collaboration finding its beginning in the early 2000's and returning 15 years later to make the album Hug of Thunder. The title track follows a timeline similar to that of a summer thunderstorm; the melody crashes into focus like a strike of lightning, and fades to thunderous oblivion. The songs trains the ear to anticipate each strike. Feist's ethereal voices ties together the heavy contrast of melody and interlude. Kevin Drew, one of the main members of the band, told Pitchfork that "the title represents exactly who we are. That is our show. We're trying to create that hug of thunder. That sound. That embrace amongst the chaos."

WHEN AM I GONNA LOSE YOU - LOCAL NATIVES
This song is a release and realization of love and vulnerability, and a damn good song to dance and/or cry to. The sparse placement of piano notes give the more bare sections of the song the quality of a ballad, while the more vibrant moments are raw and soaring. With each utterance of the title's question, the word 'you' echoes out, emphasizing the subject of the song. The melody is drawn out, almost dragged to each succeeding beat highlighting the vulnerability of

the question at hand and the emotion of love and uncertainty. This rock ballad is an ode to fear within love and the strength of vulnerability.

CARRY THE ZERO - BUILT TO SPILL
Possibly the most famous thing from Idaho besides potatoes, Aaron Paul, or Napoleon Dynamite, Built to Spill is an indie rock band from Boise known for head-man Doug Martsch's live guitar solos. They formed in the early nineties, and are very obviously influenced by the grunge rock movement of the time; the stinging guitar riff that permeates the song is evidence of this influence. "Carry the Zero" is a classic for indie rock fans, with Martsch's distinctive twang and undeniable "give no fucks" attitude. This song calls out all who are outwardly obsessed and too "occupied with what other persons are occupied with and vice versa," saying that they have become "what you thought was dumb; a fraction of the sum," this possibly being an inspiration to think for oneself and like Martsch does so well, not give a fuck.

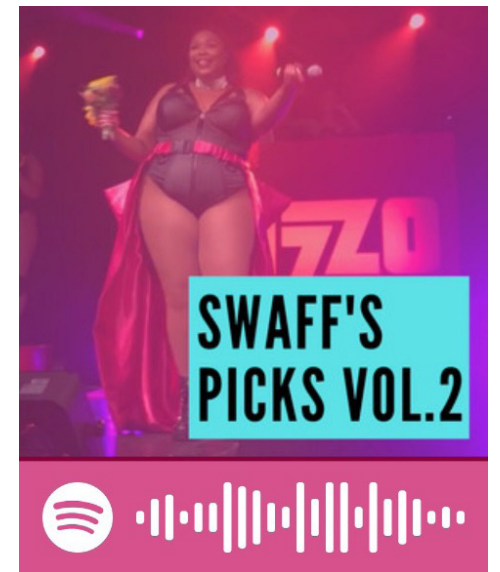
STYLE - FOSTER THE PEOPLE
Divergent from the previous light alt pop of the early 10's, "Style" is Foster the People's latest single. The cyclic and introspective rhythm is a step away from what first made Foster the People famous, but the song still retains the best parts of that era while also incorporating more heavy and pulsing beats of today's indie pop and rock. Right off the bat, the song launches into a sermon of declarations, stating "we're born to die so I'm gonna fight for how I wanna live," followed by more ominous deliverances. The lyrics provide the conclusion that today's society only cares about what's in style and how to look cool, similar to

the sentiments of "Carry the Zero". Lead singer Mark Foster laments "we're in the lion's den, consumption is our medicine / and so I'm high again, you can say I'm a true American / well the sweetest revenge is being set free / you can't take it from me," these restraints being societal expectations we set for ourselves. A sarcastic clip finishes out the trumpeting broadcast that says "Yeah, just do it in style," ignoring whether it is to fight, love, or hate.

REAL THING - MIDDLE KIDS
Another new release, "Real Thing" hints that Middle Kids is exploring their vocal style and developing who they are as a new band. Their debut album, Lost Friends, is another great listen, fully representing the band's shining indie anthems. In "Real Thing", lead singer Hannah Joy harkens back to her roots in church choirs, singing airy hymns on Sunday mornings. This influences her vocalization, but is in contrast to her intimate, exposed, and familiar lyrics of memory and experience, as well as the riffs of guitar that cut through the song. Through doubt and realization, the song explores the fact that reality isn't as romantic as it seems.

LIKE A GIRL - LIZZO
In just the past few years, Lizzo has skyrocketed to popularity, not only in music but in feminism and self love, and if you didn't see, she just played at Coachella(!!!). If you were to scroll through her profile on Instagram, you'd be likely to find numerous videos of her twerking with her backup dancers, better known as the "Big Girls". She stands for every womxn, big or small, but especially the big ones. Her live shows are sermons in body positivity and self love. You leave feeling ready to love yourself,

other womxn, and the world. "Like a Girl" is the newest feminist bad bitch anthem off of Lizzo's latest release and major studio album Cuz I Love You. She makes references to various role models like Serena Williams, Lauryn Hill, and of course, herself. She sings "woke up feelin' like I just might run for President / even if there ain't no precedent, switchin' up the messaging / I'm about to add a little estrogen." Lizzo knows that she needs to be her own role model before anyone else, because not only does society not represent people that look like her, but that society also demands standards of beauty and perpetuates stereotypes in contrast to her own body and attitude. She declares that "if you fight like a girl, cry like a girl / do your thing, run the whole damn world / if you feel like a girl, then you real like a girl / do your thing, run the whole damn world." By using the ubiquitous phrase 'like a girl', this song powerfully and eloquently stands up to discrimination against women across all walks of life.



AVENGERS: ENDGAME IS AN EMOTIONALLY FULFILLING CRESCENDO FOR A GENERATION OF MARVEL FANS

JACK LLOYD | REVIEW

After 11 years, 22 movies, and billions of dollars spent, Marvel has drawn its illustrious *Avengers* saga to an end. The planning and execution required to steer such a behemoth of a franchise to a satisfying conclusion is tremendous. Frankly, it is an achievement of everyone involved that *Avengers: Endgame* is as good as it is. While the film creaks and groans a fair bit from the weight of its bloated plot and runtime, it accomplishes the series goal of delivering enthralling action with emotionally resonant characters.

It should be stated outright that this is not a standalone sequel where you can still enjoy the film having not seen the first one. The movie not only expects you to be familiar with the details of *Infinity War*, but also with the general events of the recent franchise. It is something to be aware of if you want to see this movie but aren't up to date on your Marvel jargon.

A large part of why all this background stuff is especially important to know for *Endgame* is because the plot focuses so much on the pasts of the heroes. In order to defeat the purple malthusian tyrant, Thanos (Josh Brolin), and undo the galactic holocaust he created in *Infinity War*, the remaining heroes must confront challenges from throughout the history of the series. As a result, the bulk of the plot is split off into a bunch of smaller subplots that reconvene for the big finale. This structure

works to the films advantage as each of the remaining Avengers is given enough solo screen time to build up their characters and confront their own personal conflicts. All of these character stories were at the very least 'okay', but some were downright fantastic and heart wrenching. In the context of *Endgame* itself, these aspects are strong, but the real feat is how well the story uses the groundwork of the entire series. The resulting movie is one that will be enjoyable for everyone but perfect for dedicated Marvel fans.

The core group of Avenger's actors are as enjoyable as ever to watch. Robert Downey Jr. and Chris Evans pull the most weight, but there are memorable contributions from Scarlett Johansson, Jeremy Renner, and Paul Rudd as well.

Also, Chris Hemsworth reinvents Thor in a way that is as shocking as it is amazing. Josh Brolin does a good job but is just given a lot less material to work with than in the previous movie. There's also an expectedly insane amount of cameos, the quality of which fluctuates pretty broadly.

Unfortunately, the plot that surrounds the characters is a lot weaker than the characters themselves. There's a lot of sluggishness and even a complete false-start in the first third as everything gets put into place. Packed in with that are some nagging potholes and a few throwaway comedic relief scenes that feel almost tone-deaf given the seriousness of the rest of the film. This fluff mixed in with a story that jumps around from character to

character results in uneven pacing that really makes this feel like a three-hour movie. However, these issues do resolve themselves in the final act which takes celebrity-packed superhero action to a gratuitous extreme that will likely never be seen again. And if there is any doubt about the future of the Avengers franchise, the film spells out some new sequels/spinoffs very clearly.

It's been a wild ride since *Iron Man* (2008) first launched the cultural phenomena of the Marvel Cinematic Universe over a decade ago. At the journey's conclusion, *Endgame* stands as a satisfying and respectable achievement. From the perspective of a fan of these movies, this gets a 4 out of 5 stars.

CALTECH JAZZ BAND & CALTECH-OCCIDENTAL WIND ORCHESTRA PRESENT

Caltech Jazz Band will feature works by:
Sammy Nestico, Bill Holman, Bob Minzter,
Thad Jones, & Bert Joris.

Also featuring:
The trombones on John Clayton's
"Sunny Side of the Street" and
the saxes on the Supersax tune,
"Cool Blues."

BANDORAMA

Grad students Sophie Miller,
Richard Feder, Muir Morrison and
freshman drummer, Tighe
Didden, will also be featured.

Directed by Barb Catlin

Featuring the iconic works:
First Suite in E-flat - Holst
Irish Tune from County Derry - Grainger
Suite of Old American Dances - Bennett

**FRI, MAY 17-8PM
SAT, MAY 18-8PM
RAMO AUDITORIUM
FREE ADMISSION**

BANDORAMA

Showcasing clarinet soloist
Lynne Snyder in a wonderful
concerto by British composer
Martin Ellerby.

Directed by Glenn D. Price

HU, MARASIGAN NAB SCHOOL RECORDS AT SCIAC'S DAY 1

MARK BECKER | SPORTS

The Caltech women's track & field team got on the board with 10 points on the first day of the 2019 SCIAC Championships, eight of which came from sophomore Claire Hu (Palo Alto, Calif. / Henry M. Gunn) in her record-setting 10000m debut while senior Michelle Marasigan (Elk Grove Village, Ill. / James B. Conant) also took home a school record in the 800. The Beavers currently find themselves ahead of Chapman University heading into the second and final day of competition.

Hu, now the owner of two Caltech distance records, crossed the finish line in 37:38.12, broke the school record by nearly three minutes and became the first Beaver to complete the mammoth distance in under 40 minutes. Saturday marks Hu's second trip to the podium in as many years with the sophomore taking third in the 5000m run in another record-setting performance. Juniors Skye Reese (Concord, N.H. / Concord) and Nicole Feng (Bethany, Conn. / Amity Region-

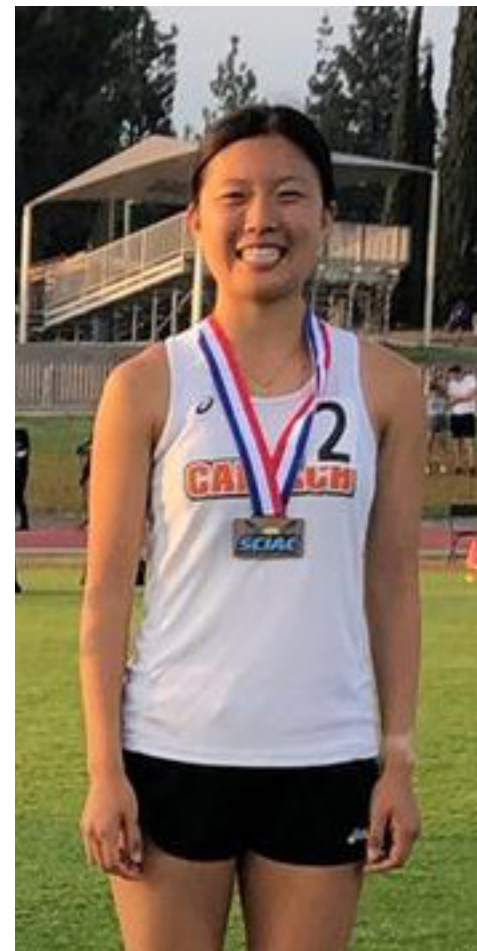
al) joined Hu in the 10000, with Reese rounding out the top 10 with a 42:55.01 while Feng made a 44:16.39 debut.

Caltech received two more points from sophomore Molly Crotteau (Chicago, Ill. / Walter Payton) in the women's 3000 Steeplechase. Crotteau, who set the Caltech steeplechase record in the final SCIAC Multi-Dual of 2019, finished 10 seconds off her record-setting pace but still managed to net a seventh-place finish amidst a 16-woman field. Junior Alexa Lauinger (Ortonville, Mich. / Brandon) rounded out Caltech scorers with a finals appearance in the javelin for the second consecutive year, scoring with a season-best 30.82m throw. The junior also scored with an eighth-place finish in the hammer finals thanks to a PR of over two meters (36.56m). Lauinger's big take in the hammer throw moves her to third in the Caltech top-10 (119' 11 1/2"). Senior Muskaan Goyal (Apple Valley, Minn. / Eastview) competed in the hammer throw for the final time, hitting 27.08m on her best throw.

Caltech also had two more competitors qualify for Sunday's finals. Senior Marasigan ran a posted a program-record 2:22.21 in the 800m run to place eighth out of 23 women spread across three heats. Marasigan's time proved

to be absolutely necessary for the senior to make finals in the last SCIAC Championship meet of her career, as her previous-best 2:24.11 would have put the senior on the outside looking in. Sophomore Sirisha Gudavalli (Boulder, Colo. / Fairview) joined Marasigan in the second heat, running a 2:35.66. Sophomore Nora Griffith (Santa Cruz, Calif. / Santa Cruz) led Caltech in speed events with a fourth-place 1:05.25 to qualify for Sunday's 400 hurdles finals while freshman Moya Ly (Cincinnati, Ohio / Cincinnati Country Day) finished in 1:17.35 to take over the 10th spot in the Caltech top-10. Competing in her final SCIAC Championship meet, senior Melissa Gutierrez (Pico Rivera, Calif. / El Rancho) concluded her 1500m career on a high note thanks to a 15th-place 5:03.96, good for the eighth spot in the Caltech top-10. The senior's time is also a seven-second improvement on her previous season best. Fellow Caltech top-10 1500 competitor sophomore Krystal Brodsky (Redmond, Wash. / Bellevue College) competed in the same race and posted a season-best 5:20.16.

Head Coach Ben Raphaelson and the Beavers will return to the track for tomorrow's finals and will have representation across five different women's events.



Caltech Athletics

36 YEARS AGO: INTERHOUSE 1983

At this year's Interhouse, the undergraduate houses presented themes from different countries, different times, and even different dimensions. The following "Inside World" accounts describe what went on at last Saturday's event:

BLACKER

Well, there we were, sixty-some Moles just minding our own business (as usual, I guess) when suddenly there was a great thunderclap, and the skies were rent asunder with an awesome presence. We felt our bloods turn to acetone and our hairs become starched and our ears become stretched out to sixteen inches as a dark cloud descended upon Blacker House. Our memories of what happened next consist of nothing but blackness, a blackness blacker than the black in blacker back in blacker. We might all have woken up on Sunday morning with no idea of what had gone on the night before (many of us did anyway) but for a note found in a bottle in the mud pit. The note read thusly:

"We've almost all left by now and I feel a need to tell the world of what we've done, despite explicit instructions to leave no trace. I think Batman said that the criminal mind is such that it needs to brag, and that is what causes their downfall in the end. Perhaps so. I only know that I must tell this story.

We had been planning this for months. I think it was originally Fiendish Plan Man's idea, but that's not important. We saw the confusion of Interhouse night as the perfect background for our plan, so on that night, House Stealing Man used his House Stealing Ray to capture Blacker House and replace it with our own home, Gotham City!

Everything was going perfectly! Disguise Man set us all up to look identical to the members of Blacker House, and we wandered out to infiltrate the other houses. Some of us picked up some instruments that were lying around, and lots of people started having a great time hopping around in front of us. That may have had something to do with the "DANCE this means you" sign that was on a wall nearby, probably put there by the Random Sign Man (He's been known to do such thing)

At 9:00 pm, we decided to make our identity and our plan known to the

world, and we revealed ourselves in our true form to a huge crowd. Somehow, though, something went wrong and we didn't seem to get our point across. We made one more attempt at 11:00, but by that time, the disruptive Dr. Bartender had hit many of us with his Zoo Juice Ray, and we were lucky to get out a coherent sentence, much less communicate to the world our true identities and purpose.

Having failed in this, we decided to retain our anonymity. We had found that the campus did not satisfy our criterion for colonization, so now we are leaving, and none shall know of our visit. None but he who finds this letter." - Spot

DABNEY

WARISPEACE. FREEDOM IS SLAVERY. IGNORANCE IS STRENGTH. THE TRUTH SHALL MAKE YOU FREE.

With Jerry Falwell as big brother, Dabney pulled off a Moral Majority/1984 Interhouse. The lounge was transformed into the Ministry of Truth, where believers could come hear speeches and sermons decrying all forms of immorality and individuality, and exalting Big Brother, mindless adherence to the words of leaders and the ideal-ness of a merged church and state under right wing religious fanatics.

But wait! There were subversives in the crowd, passing out banned pamphlets that talked about such strange and evil things as "free press", "fair trial", "personal freedom." The Thought Police handily escorted these scum down to the Ministry of Love, where they were re-educated to love Big Brother.

Meanwhile, a large group of subversive scum gathered in the secret cafe, where alcohol was available in diverse forms. Rock's Band played music with reverse time sequence encoded messages, telling the young people to worship Satan and register as a Democrat. Crazed youth entered into demonic dances. It was a true den of liquidity. - Bill Callahan.

FLEMING

It was of us to make Interhouse 1983 a severe event. The Fleming Courtyard, engineered by Mark Eggleston and Dave Durham went off well even though it was not completed because we were 10 hours behind schedule. Still, the fiber optics ship, acetylene cannon, audio effects, and simulated storm were impressive.

The German beer hall, organized by Rajiv Sahney turned out great. In

fact it turned out too great because we ran out of food and german beer before 11 o'clock. (No reflect on the amount of beer purchased, rather on its overwhelming popularity). Alpine Village will get their barrels back soon.

The highlight of the evening was the play, written by Tom Kupiszewski, around the theme of Fansomes's Heroes. Impressive performances were turned in by all involved, with the exception of Mike Kilby, who as usual forgot his lines. - Ed Zanelli

LLOYD

Interhouse! After a typically slow start, everything finally got moving with a lot of prodding from our Interhouse Work Chairman, Matt. Alaric did a very good job of hiding our fireplace, Ross did manage to find ten potted palms and transportation for the roulette table (which, by the way, had the truly powerful intake of \$1.55 for the evening), and despite the fears of many, Paul did get the "Rick's Cafe Americain" sign finished.

Although Marty's plane didn't take off due to bad weather, the interior effect was quite pleasant, complete with the usual pile of excellent Lloyd food prepared by the usual pile of excellent Lloyd cooks. Many thanks to all who helped cook, bulid, wait tables, and sing German national anthems. - Rod Van Meter

PAGE

Interhouse was a huge success. The traditional ride was just the beginning of a long, confusing journey through "The Twilight Zone." Emerging from the misty black train tunnel, the travelers stumbled upwards through a strobelit stairwell to the maze. For those lucky enough to find their way out the party was only a nurl pit away. Everyone danced to the music of Head First (although a few needed to visit the bar first-to get psyched!) and recuperated on soft pillows by the fire in the lounge.

Except for a few minor problems such as last minute procurement of a strobe and lethal Black Russians, fun was had by all. The Interhouse Chairman, Mark Waggoner, obviously did a great job getting Page organized. Thanks. -Sean Moriarty

RICKETTS

In honor of our new MOSH. Ricketts house went Irish at this year's interhouse. The lounge and dining room was transformed into O'Brennan's Pub

while the courtyard became the rest of a small Northern Irish village. To complete the authentic atmosphere entertainment was provided by an Irish band, The Road to Shiloh. As is always true of the Irish, the locals 'come out in force for a night of partying including the local IRA representatives who were determined to destroy all the British Buildings in the courtyard before the night was over. In addition to the traditional fore of O'Brennan's Pub there were, also O'Thommasy's Burgers available featuring imported Tommy's chili for those who desired a bite with their brew. Many thanks to the kind true Irish present for providing us with quick lessons on how to dance to Irish music, an experience thoroughly enjoyed by all who participated (after they caught their breath). Finally Ricketts House did its usual job of monopolizing the contest for the first house to dismantle interhouse by restoring the house to its usual state of disorder by 4:55 am Sunday morning.

RUDDOCK

Imagine that you're traveling through a deep, dark jungle when all of a sudden you spot a beautiful sea-side resort. As you walk along the boardwalk and over a bridge by a waterfall, you begin to hear the soothing sounds of Jazz and smell a succulent roasting pig. It's not a dream, you're at Ruddock Interhouse '83.

Things were swinging to a Hawaiian beat as Rudkiki got underway with a pleasing set by the "Hawaii-5" (a.k.a. Caltech Jazz Band) in the Aloha lounge. Next door, one could find a little more "local flavor" at the Hurricane Hole, where the tone of the evening was pool, whiskey, and a rowdy good time. Later, while patrons of the high class Aloha lounge relaxed in the gentle, quiet atmosphere, they were entertained by that nightclub singer extraordinaire Don "Biff" Ho; who not only dazzled the audience, but also I won the heart of every woman, in the place (especially B-day girl Debbie Pinck, to whom he sang Happy Birthday). Soon, though, it was discovered that Don was really that notorious criminal Wo Fat. As he and his bodyguard made a break for the door, Steve McGarret and I his gang broke through the crowd and captured the imposter on the spot. That commotion over the evening ended! with another great set from the Hawaii-5.

THE CONSPIRACY OF CALTECH

SOCIETY FOR THE LIBERATION OF TEACHERS

Last week, cars lined the Bechtel Mall, the far-off region past the Turtle pond and Millikan library. These weren't normal cars like a Civic or an Accord, these were nice cars, cars that the students, staff and faculty might be able to buy, but would cost them an arm and a leg. These cars belonged to the Board of Trustees, a secret group on campus which determines all Institute policies and can act directly on any matter in an event of an emergency.

Many believe that the President of Caltech, Dr. Thomas F. Rosenbaum, is the person who at the top. However, they are simply wrong. Instead, the clandestine Board of Trustees holds unquestionable control over all of Caltech. From their room in Millikan Library, the trustees determine everything that Caltech will do. Among the decisions that they make include the executive compensation of lead administrators, determine singlehandedly the entire student experience and the overall look of the campus. Such is the power of the Board of Trustees that even the Federal Government needs to negotiate with them to keep JPL running properly.

Despite possessing such power on campus, you would be hard pressed to find any student on campus who can name a single trustee. Who is Jon B. Kutler? Who is Robert B. Chess? The Board of Trustees is obviously made up of members of the global elite who want influence at the 12th best institution in the United States. It is almost certain that this organization exists as some offshoot of the illuminati considering the number of well-connected business executives included. The direction of

Caltech is being steered towards helping the global elite conspiracy develop new technology to perpetuate their rule for all of posterity and bring about the New World Order.

It is glaringly obvious that these people do not have the interests of individuals on campus as heart. Why else would they allow the Caltech Dining Services to exist? Why do they hire professors who can't tie their shoes or teach classes? Why does Caltech increase its tuition every year?

Wake up sheeple! Caltech is not a bastion of pure higher education. It is instead a tool for the global elite to extract as much meaningful labor out of students and professors alike. Students, when they leave many times are burned out to the core and face both physical and mental injuries. Undergraduates are stripped of their family's money and told to do research as much as possible. Graduate students work in the labs generating research for the global elite 12-14 hours a day. Professors are forced to produce immediately impactful research for illuminati to use lest they get kicked out.

The Society for the Liberation of Teachers writes to you all to inform you of the facts. The fact that the Illuminati and its members disguised in the Board of Trustees will not listen to the pleas of students, but have their own agenda, to make Caltech seem attractive as to entice more unsuspecting individuals, and to produce technology to bring about the New World Order. All we ask is that you learn of the the example of Chris Knight, a student at Pacific Tech, who destroyed a chemical laser developed there that would have been used to unspeakable horrors.



The Ivory Tower: Millikan Library

Wikimedia Creative Commons 3.0

PUZZLE: KILLER SUDOKU

DIFFICULTY: MEDIUM

Puzzle and instructions from killersudokuonline.com

RULES:

As in regular sudoku, every cell in each row, column, and nonet must contain a unique digit. In other words, each row, column, and nonet must contain all the digits from one to nine. The values of the cells a cage must sum up to the total for that cage. The values of the cells in a cage must be unique.

DEFINITIONS:

Cell: A single box. It can contain any digit from one to nine.

Row: A horizontal group of nine cells. Each cell in the row must contain a different digit.

Column: A vertical group of nine cells. Each cell in the column must contain a different digit.

Nonet: A 3x3 grid of cells. It is surrounded by bold lines. Each cell in the nonet must contain a different digit.

Cage: A group of cells surrounded by a dashed line. The values of the cells in a cage must sum up to the total specified in the upper right of the cage. The values in a cage must be unique even if the rules of regular sudoku would allow for duplicates.

Region: An area of the puzzle that cannot contain duplicate digits. That is, a row, a column, a nonet, or a cage.

16			19	17		20		6
9					9			
	26		17			15		19
		9			42			
	20					10		20
				12				
	13		12					23
9		17		16	17			
						12		