

California water crisis induces cutbacks and paradigm shifts

LORI DAJOSE
Contributing Writer

California Gov. Jerry Brown issued an unprecedented executive order last week mandating the reduction of water usage across 400 local water supply agencies. Each agency must come up with and enforce restrictions on consumers and businesses to reduce water usage by 25%.

California is now in its fourth consecutive year of drought, with this past winter yielding record low snowfall. The Sierra Nevada snowpack is one of the major sources of water for Southern California, but this year it is only 6% of its normal volume.

Climate models suggest that in the coming years precipitation will fall more as rain and less as snow. The current system of dams and reservoirs may not be able to handle this — a gradual snowmelt over time is much easier to control than sudden deluges. Ironically, the warmer climate and the drought could thus cause large floods. Geologists and engineers are brainstorming new systems to manage storage and prevent

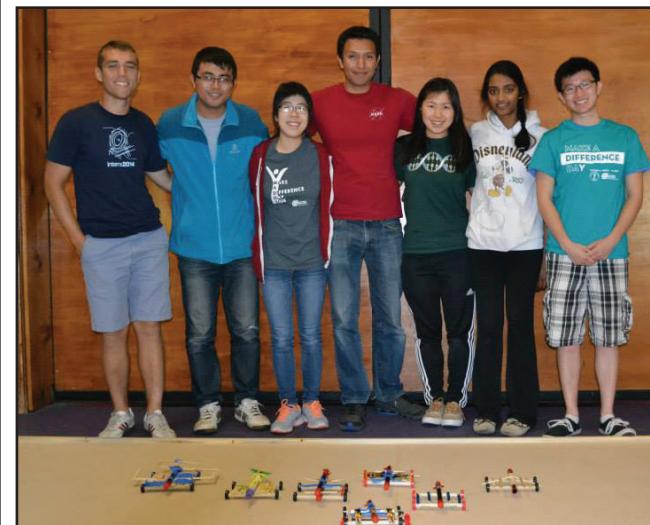
"California is no longer simply experiencing a severe period of drought. It is undergoing a permanent change in climate."

widespread damages in this event.

Brown's actions last week signal the beginning of an overhaul in the control and consumption of water. They also mark an important paradigm shift: California is no longer simply experiencing a severe period of drought. It is undergoing a permanent change in climate.

Water is a decisive factor in California's status as a giant of agriculture, technology and industry. Will food prices skyrocket due to cutbacks in farm water usage? Will businesses still flock to Silicon Valley and Los Angeles if water bills are prohibitively expensive? The state is renowned for rapid growth and innovation as the world's seventh largest economy — but all of that could soon come to a grinding halt without water.

Students join Caltech Y to volunteer in Make-A-Difference Day



(Top) Students went to Hillsides Home for at-risk children, and built and raced rocket cars with a group of teenage boys. (Bottom) At Lifeline for Pets, volunteers cleaned rooms where abandoned cats stay, washed linens, swept floors, organized the shelter, and played with some of the cats in the shelter. Other MAD Day volunteer opportunities included visiting the Boys and Girls Club in Del Mar, Del Mar Park, Habitat for Humanity, the Humane Society, and the LA Arboretum.

Photos Courtesy of Hillsides Home (top) and Aleena Patel (bottom)

Project Scientist, Caltech bring STEM education to Pasadena girls

NEHALY SHAH
Editor-in-Chief

Project Scientist Academy, a five-week summer camp, offers science, technology, engineering and math (STEM) learning opportunities for girls of ages four to 14. The program, originally established in North Carolina, will come to Southern California this summer from June 8 to July 24 at the Caltech and Longfellow Elementary School campuses.

Founder Sandy Marshall was inspired to start Project Scientist by her own daughter. "She was a curious four-year-old that loved science; my husband and I worked fulltime and needed a summer option that fit her interests and academic needs as well as our schedules. At the same time, as executive director and founder of The NASCAR Foundation, I was funding many STEM initiatives and I became increasingly aware and concerned of the lack of females in STEM majors and careers," said Marshall.

"Having a 'STEM girl' and having been a 'STEM girl' myself, I understand how girls may feel different or not always feel aligned with the perceptions and

stereotypes that much of society has around girls in STEM. Girls (like boys) love science, especially at young age. Since founding Project Scientist my hypothesis is continually confirmed that kids as young as four are capable of understanding science concepts and that girls' interests go beyond the stereotypical female STEM majors and careers," said Marshall.

As a part of The STEM Funders Network while at The NASCAR Foundation, "I had access to the latest ... research around girls in STEM and experts at the table to vet my ideas around Project Scientist," said Marshall. By 2012, Marshall launched the first session of Project Scientist out of her guesthouse as an LLC with two teachers, six students (of ages four to six), and six female STEM professionals. "I built every second around what research has proven to drive and maintain girls' interests in STEM," said Marshall.

Project Scientist has since grown: in 2013, it became a public 501(c)(3) nonprofit and landed its first university contract in Charlotte, North Carolina, where it served 95 girls in a six-week program. In the summer of 2014,

Project Scientist served nearly 500 girls. Most recently, in the fall of 2014, "we piloted our afterschool and teacher workday program, so that we could have touch points with the girls we serve year-round, while inspiring other girls to reach for their STEM dreams," said Marshall.

Last year Marshall reached out to Spiros Michalakis, who is the manager of outreach activities for the Institute for Quantum Information and Matter (IQIM) at Caltech. As such, he is also the club adviser for InnoWorks Academy, another Caltech summer program that will be on campus from June 15 to 19, the week in June that Project Scientist will be in hiatus so that girls who want to participate in both programs can do so. After Michalakis and Marshall met, Michalakis was invited to North Carolina to observe Project Scientist in action for one week. "I was so impressed by the quality of the program that I decided to talk to Mitch Aiken to bring the program on campus the next summer," said Michalakis. Aiken is the associate director for educational outreach in the provost's academic program at Caltech.

"[Michalakis'] enthusiasm for the program inspired me to figure out a way to help bring this program to our local K-12 students. Broadening the STEM pipeline to include more girls is a key goal for us in Caltech's Center for Teaching, Learning, & Outreach," said Aiken. "As we explored working with Project Scientist, I felt that teaming up with a local elementary school would be a great way to strengthen the community connection." Thus Project Scientist will be on Caltech and Longfellow Elementary School campuses in Pasadena as well as three university campuses in Charlotte this summer. Project Scientist also runs a year-round club at public and private elementary schools in both markets.

This summer Project Scientist will have concept goals for each age group. "This will be a joint effort of the entire Project Scientist staff and parents to ensure their girls grasp these concepts that align with Common Core and Next Gen Science Standards," said Marshall. Each week of the summer session has a theme, chosen through a variety of ways. "For example, we

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Caltech Y Column: News & Events

CALTECH Y

The Caltech Y Column serves to inform students of upcoming events and volunteer opportunities. The list is compiled by Neera Shah from information given by the Caltech Y and its student leaders.

Founded by students in 1916, the Y was organized to provide extracurricular activities planned and implemented by students as an opportunity to learn leadership skills and discover themselves. The mission of today's Y remains the same—to provide opportunities that will prepare students to become engaged, responsible citizens of the world. The Y seeks to broaden students' worldviews, raise social, ethical, and cultural awareness through teamwork, community engagement, activism, and leadership. More information about the Caltech Y and its programs can be found at <https://caltechy.org>. The office is located at 505 S. Wilson Avenue.

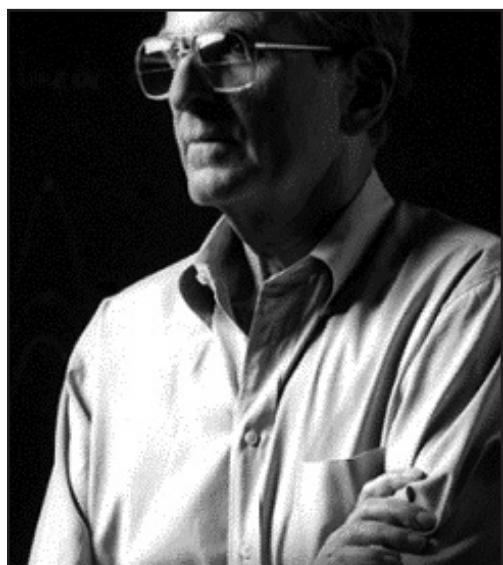
Upcoming Events

1. Science Policy Lunch Series with Professor David Goodstein

Tuesday | April 7th | 12:000 - 1:30 PM | Location TBA

RSVP Here: <http://goo.gl/forms/iUzbXrEoxG>

The Caltech Y Social Activism Speaker Series on scientific reproducibility will conclude with a lunch discussion about scientific fraud. Professor David Goodstein is a Professor of Physics and Applied Physics here at Caltech and served as Vice Provost from 1988- 2007.



Professor David Goodstein

Photo Courtesy of Caltech Y

During his tenure as Vice Provost, Professor Goodstein oversaw all cases of scientific misconduct, and developed the Caltech Policy on Research Misconduct. Professor Goodstein also authored On Fact and Fraud, a book providing several examples of scientific misconduct and the motivations behind them. Join us as we discuss the relationship between reproducibility and fraud and how to reduce the occurrence of fraud in the future.

2. Caltech Y Centennial T-Shirt Competition

Submissions due Wednesday, April 8th at Noon

The Caltech Y is turning 100 and would like to commemorate this momentous occasion with a centennial t-shirt. We are looking for a creative and original design and invite all undergraduate and graduate students to participate. Submit your design for a chance to win!

All submissions are due Wednesday, April 8th at noon. Email your design to caltechy@caltech.edu.

There will be a 36 hour voting period for all students to select the top 3.

A committee from the Caltech Y and Caltech Store will pick the winning design from the top 3 to be on the official centennial t-shirt by Monday April 13.

Each of the top 3 submissions will receive a \$25 gift card to the Caltech Store.

The winning design will be printed, and t-shirts will be sold at the Caltech Store.

Art must fit on the front chest area of t-shirt. Designs can have up to two colors.

3. The Studenski Award

Proposals Due Friday, April 17th no later than noon

Are you wondering about the next step in your life? Have you reached a crossroad where you would benefit from an opportunity to explore? Would a trip, an opportunity to volunteer with an organization, or a chance to try a new skill or interest this summer help you gain clarity? If you answered yes to any of these questions, then the Studenski Award might be for you.

The Studenski Memorial Award is a grant of up to \$6000 established in the memory of Paul Studenski, a Caltech student who was killed in an automobile accident while traveling across the United States in 1974. It is awarded to a Caltech undergraduate who, having reached a crossroads in life, would benefit from a period away from the academic community to obtain a better understanding of self and to explore possible directions for the future.

Studenski proposals (1 to 2 pages maximum) are due Friday, April 17th no later than 12:00 noon to caltechY@caltech.edu (in word format). For more information, contact Athena Castro athena@caltech.edu or Greg Fletcher ggreg@caltech.edu or join us for dinner:

Studenski Informational Dinner

Monday, April 6th - 5:30 PM

Hosted by Tom Mannion at his house

RSVP by April 2nd to <http://tinyurl.com/studenski>

More information and the application can be found at http://caltechy.org/programs_services/areas/Studenski/index.php.

caltechy.org/programs_services/areas/Studenski/index.php.

4. Caltech Y ACT Award

Applications are due by Friday, April 17th at noon

Your World Awaits. Caltech Y ACT Award! How will you spend your summer?

Tackle homelessness, capital punishment, HIV/AIDS, immigration, poverty, or other challenge you choose - it's your opportunity to ACT! The Caltech Y ACT Award, made possible through the generous support of the Caltech Employees Federal Credit Union, offers students an opportunity to pursue an interest in community service or advocacy.

Partner with an organization that is changing the world. Explore real world issues in our local community, across the nation, or around the globe - and make a difference in the world. The \$4500 Caltech Y ACT Award offers students an opportunity to explore an issue, engage in a cause, and lead a campaign to educate and engage others at Caltech. Caltech Y activists determine the cause they will address, the organization with whom they will partner, and the type of campaign they will lead on campus. The Caltech Y ACT Award helps Caltech Students expand their understanding of the world unleashing them to change the world for the better as active citizens.

Applications are due by Friday, April 17th at noon. Stop by the Caltech Y during our office hours to learn more about this exciting opportunity, contact us to ask questions or set up a separate time to meet.

More information and the application can be found at http://www.caltechy.org/programs_services/commservice/ACT/index.php.

5a. Pasadena LEARNS

Friday | 3:00 - 5:00pm | Madison and Jackson Elementary School | Pasadena

Come volunteer at Madison and Jackson Elementary School! We are partnered with the Pasadena LEARNS program and work with their Science Olympiad team or do regular tutoring along with occasional hands-on science experiments. Transportation is provided. For more information and to RSVP, contact vkkumar@caltech.edu. Eligible for Federal Work Study.

5b. Hathaway Sycamores

Monday | 5:30-8:00pm | Highland Park

Volunteer at Hathaway Sycamores, a group that supports local underprivileged but motivated high school students. There are a variety of ages and subjects being tutored. The service trip includes about an hour of travel time and 1.5 hours of tutoring. Transportation is included. For more info and to RSVP email Sherwood Richers at srichers@tapir.caltech.edu. Eligible for Federal Work Study.

Project Scientist reaches out to girls interested in STEM

Continued from page 1

and assistants to our teachers," said Marshall.

Project Scientist has already expanded from the east coast to the west coast since its inception, and Marshall has further growth in mind. "Our short term goals are to continue to tweak and build on the model to create efficiencies yet sustain our outcomes and impacts for the girls we serve. We also hope to continue to grow in the Los Angeles market and others as the need and partners are identified," said Marshall. "Our long-term goals are to create more female scientists and ultimately change the culture for girls and women in STEM. We plan to achieve this through our pipeline approach with the girls we serve, university and corporate engagement, and public relations efforts around girls in STEM."

Michalakis has similar development plans in mind for Project Scientist. "I want to see Project Scientist take strong roots at Caltech before expanding to places like UCSD, UCSF, MIT, Harvard, Stanford and other top tier universities. The first step is to establish strong corporate partners locally so that we can increase the number of full-ride scholarships for girls on the PUSD and LAUSD free/reduced lunch program. The second step is to involve Caltech faculty and students as mentors and guides for the five weeks during the summer program, [and] even more importantly, as leaders in the community who go on to create year-round Project Scientist Clubs in schools like Longfellow Elementary, Jefferson Elementary, Washington STEAM Academy and others," said Michalakis.

The program's incorporation of experiments and hands-on learning offers "a balance between what I call 'shock and awe' science [and] a deeper dive in curriculum to master specific STEM concepts ... [which] is unique to Project Scientist compared to most other summer camps and [is] something our parents appreciate," said Marshall. The summer program also includes one hour of arts integration per day not only "to reinforce the STEM concepts from earlier in the day, but also to drive innovation and creativity. Typically we engage with local artists and groups to partner on the execution of the arts hours," said Marshall.

Another unique attribute of Project Scientist, compared to other summer camps, is that professional teachers from the local area are hired, which "provides them with a summer of hands-on training on STEM teaching tools and techniques that they take back to their classroom in the fall, making our impact exponential. We also hire interns (typically unpaid) college and high school girls who serve as "near peers" to our girls

Project Scientist is offering \$50 off through April 12 for each week a student signs up for; Caltech and JPL employees will receive an additional \$50 off through April 12 (qualifying applicants must write Caltech or JPL in the referral box). Questions may be sent to Sandy Marshall at sandy@projectscientist.org.



Photo Courtesy of Sandy Marshall

Corn grows plenty fast in Indiana, but discrimination grows faster

SEAN MCKENNA

Contributing Writer

The most thrilling situation I could imagine myself in: Skydiving? No. Winning the Stanley Cup? Nah. Calling a presidential election for a national news network? Well that certainly gets me all atwitter, and the obvious first step on the path to becoming a nationally beloved political reporter is to write about politics for *The Tech*. So here I am. As a *Tech* writer, I'd like to offer two forms of political commentary: summary and argumentation. Summary because we need sources of facts in a world where complex legal ideas are boiled down to hashtags, and argumentation because I'm full of opinions.

This week, I'm focusing on the developments regarding the Religious Freedom Restoration Acts, which unfolded this week and last in Indiana and Arkansas.

On March 26 Indiana's governor passed a law, the Religious Freedom Restoration Act, which legitimized using "a 'substantial burden' on one's religious beliefs" as a legal defense. Twenty other states and the federal government have passed Religious Freedom Restoration Acts protecting from burdens imposed by government, but the Indiana law also allowed one to claim that the "substantial burden" was imposed by another private party.

On March 31 the Arkansas legislature also passed a similar bill, but the governor of Arkansas did not sign or veto it and told legislators to try again. By then, the nation was in uproar over the

possibility that Indiana's law could justify refusal of service to gays and lesbians. States and cities imposed travel bans to Indiana, causing concern among businesses and organizations such as Angie's List and the NCAA, both headquartered in Indianapolis. This led the Indiana business lobby to join human rights activists in pressing the Indiana legislature to fix the law.

On April 2 both states passed "fixes" to their laws. Arkansas passed a new version of its law that more closely mirrors the federal Religious Freedom Restoration Act of 1993, signed by Bill Clinton. Indiana added specific wording to explicitly prohibit denial of service under the law on the basis of "sexual orientation or gender identity."

The Arkansas fix was a safe move meant to avoid controversy. Indiana's fix, however, is a small gay rights victory, as it marks the first explicit protections in state law from discrimination against LGBT residents. The overall impact of the Religious Freedom Restoration Act is thus unclear, as there is some evidence that special interest groups originally expected the law to provide a legal defense for not participating in gay weddings.

The controversy of these laws thus appears pacified, but I believe it exposes the ongoing hazards to the civil rights of LGBT Americans. Gays and lesbians in Indiana and Arkansas were at the mercy of the legislature and the governor's decision of whether to "fix" the law. Civil rights laws exist specifically to prevent this situation, for they are a commitment by government to prioritize protection of a vulnerable group of people. In doing so,

government can combat backlash against legal advances.

Progressives applaud the recent series of court rulings legitimizing same-sex marriage, starting with *Windsor v. US* in the Supreme Court in 2013 and continuing through lower level courts in 2014. In what was clearly a reaction to the 2014 court ruling legalizing gay marriage in Indiana, Christian groups such as Advance America and the American Family Association of Indiana expected the Religious Freedom Restoration Act to exempt Christians from providing services for same-sex weddings. To me, newly earned same-sex marriage rights seem incredibly fragile if they can be halted or reversed by legislative action influenced by special interests.

To ensure the proper legal defenses are available to members of the LGBT community, I firmly believe states need to protect sexual orientation and gender identity under state civil rights legislation. Without such protections, recent legal gains can be tarnished by the whim of lawmakers and the pen of an executive.

I do not claim to be an expert on politics, current events, or the law; I merely enjoy making myself heard. I encourage readers to make themselves heard after reading my articles. It is in your interest and mine to react and respond to my writing, since intellectual growth is best furthered by refuting and defending one another's opinions. Find my email address on Donut if you'd like to send me your thoughts.

From the (Interim) President's Desk: A simple proposal for improving teaching

CONNOR ROSEN

Interim ASCIT President

Several years ago, a column ran in The Tech titled "From the President's Desk," where the ASCIT President wrote about issues facing the undergraduate student body or their thoughts on particular aspects of the Caltech student experience. In the next few weeks, I'll revive that column. It will be a mixture of my opinions, policies or changes at Caltech that students should know about, and things that ASCIT or other interested students may want to work on changing in the future. This first article will focus on a small suggestion for students that takes an active effort to make it easy for professors and TAs to improve their course organization and teaching.

Undergraduates spend a lot of time working on sets, and a lot of time complaining about sets — sometimes justifiable complaints, and sometimes not. I think it is time for us to do something proactive to help professors improve course organization and teaching, and potentially help ourselves as well. I have one very simple suggestion to try to get this started — every student should write, on every problem of every set, how long they spent on that problem.

This takes practically no time and effort on our part — we already complain about difficult problems anyways. The first thing it does for us, though, is it forces us to reflect for 30 seconds on how we worked through a set, and allows us to compare between sets even after our memory of old sets has faded. Maybe I notice that all the problems I worked through with friends took longer than problems I did alone — this might indicate that I'm less focused when working with other people. That's fine if I choose to accept that, but at least it's a conscious decision. Or I notice that all the non-collaboration problems take me five hours longer — this might be a sign that I'm relying too heavily on my study group, and not really getting the material as well as I should be — maybe it's time for me to buy the textbook, get a tutor, and focus more heavily on this class. A little bit of reflection on multiple sets could go a long way.

I also think this could go a long way towards helping professors and TAs improve their classes. It gives real-time feedback to instructors on what works and what doesn't work on sets — and whether they are accurately gauging the amount of work students need to do to understand the material. It works

instrumentation and the anthemic ability of rock guitar and falls short in either direction. On the whole, however, I think the choice to add these elements to the Death Grips mix pays off in the moments it

better than grade distributions for telling instructors about differences in background between groups in the class, because seeing two populations working for very different amounts of time to get the same grade says something about the class that wouldn't be clear from the grade distribution. Each week, TAs who notice trends in problem difficulty could alter their recitations to focus on the areas that most students are finding most difficult.

If you feel ambitious, I encourage you to write a full sentence about each problem once you're done. Write "I spent 10 hours on this problem, because the formula in the notes is wrong and I couldn't get the algebra to work out until I checked the textbook; this was the biggest waste of time I've ever had," or "I spent 10 hours on this problem because it was really interesting and I wanted to find the best possible proof; I didn't mind spending that much time at all!" Give the instructors real-time feedback, instead of waiting for TQFRs. I have a glorious pipedream of professors seeing a bimodal distribution in their class of effort put into the sets, asking the ARC to investigate, finding out that it's due to differences in prior coursework, and working with the Center for Teaching, Learning, & Outreach (CTLO) to have one of the TAs do a special recitation for people missing a course that wasn't listed as a prerequisite but is actually assumed for some problems in the class (classes that secretly require ACM 095, I'm looking at you). Cue laughter from the students — but let's give it a try, because it's easy for us and the payoff if it works is enormous.

In the best case scenario, if every student did this, professors would be able to quickly respond to issues of understanding and difficulty in the class, adjusting it to the level they felt was necessary to understand the material. They could realize that students who use a particular optional resource are having fewer issues than people using the textbook, and recommend that resource to other students. They could focus on subgroups of the class that have issues with certain types of problems (e.g., proofs versus derivations), or even use the information to inform questions to the CTLO or the ARC, to improve the class overall. In the worst case scenario, we all waste two minutes on every set, but at least when we complain about how professors don't care about improving the class, we have evidence to support it.

creates that take advantage of the best parts of hip-hop and hardcore.

Yet while Death Grips experiments with these new sounds, the reason the group is

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NAILEN MATSCHKE

Contributing Writer

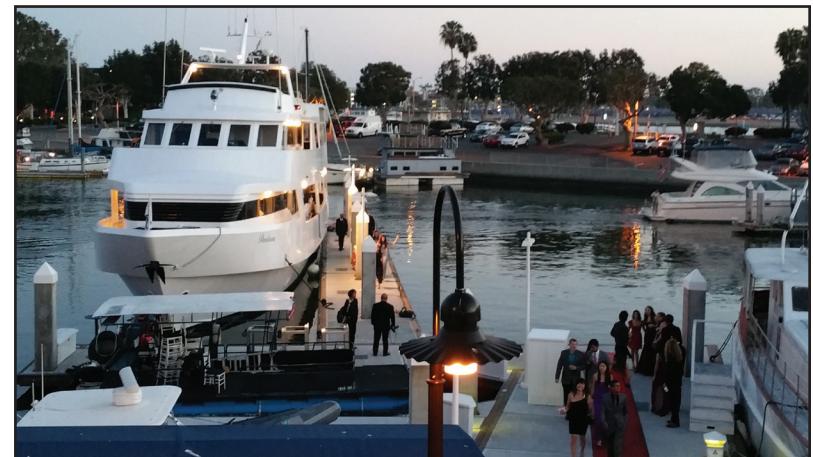
Few artists can claim to have generated anywhere near the level of controversy that Death Grips has during the group's short career, and even fewer have continued to make worthwhile contributions to their catalog while doing so. Yet in four years the Sacramento-based trio has managed to put out a mixtape, four studio albums, and an instrumental soundtrack, all packed front-to-back with some of the most violent, dark and groundbreaking hip-hop ever released. More an act of performance art than just a music project, the group takes everything they possibly can to the next level and members have gained notoriety for the twisted games they play with their fans, like announcing their break-up only to go on a tour and say that they "might make some more." Perhaps the most

famous instance of their mayhem, however, is *The Powers That B* itself, a double album: the second CD is titled *Jenny Death*, root of the "Jenny Death when?" meme resulting from rabid fans having to wait nine months between the two releases. Now that the latter has finally been released, we no longer have to be concerned about whether *The Powers That B* is a disappointing final album for Death Grips, but is it still a satisfying entry to their discography? It's tough to argue that the answer should be anything less than a firm "yes," but fans should be thankful that *Jenny Death* is good enough to be an album on its own.

On the surface, the album's second disc is the least a Death Grips studio album has ever sounded like Death Grips. Instead of the thick, distorted electronic sound that powered the destructive energy of *No Love Deep Web*, in many places these tracks are

dominated by blaring blown-out guitars and an even stronger focus on Zach Hill's drums, with a large number of the beats being driven by an acoustic kit and incorporating hardcore influences. The group is no stranger to being likened to a punk act, and it's a fair comparison to make considering the aggressive and gritty aesthetic, anti-establishment messages and general embodiment of the same sort of ideals. On *Jenny Death*, though, it really feels as though the band decided to embrace this component of its sound, and the result is a refreshing, somehow even more unique brand of hip-hop with just as much raw energy as before. There are a few times when it feels unnecessary or underutilized, usually when the guitar is stuck with too simple a melody (e.g., during MC Ride's verses on "Centuries of Da--"), as it ends up caught between the versatility of purely electronic

Techers enjoy food and dancing at annual ASCIT Formal



Photos Courtesy of Katherine Guo

Kshitij talks college students and convenient email etiquette

KSHITIJ GROVER
Contributing Writer

People love to make the case that email is dying. I've heard again and again that it's a poor form of communication, makes no sense in a connected world—even that it's an epidemic.

Look, things like Slack are great. Just don't expect me, as a college student, to stop using email anytime soon: It's about midday and I've opened, read, and replied to 30 emails today.

At a glance, that may not seem like much. But remember—that doesn't count all the notifications that I need (but immediately archive). That doesn't count purely informational newsletters (like Medium Top Stories) or email-based alerts that no one replies to. It's only email that I've read and replied to. The total number of conversations exceeds 120.

Lots of Email. Lots of Time.

As someone in college, your time is worth a whole lot more than it has ever been in the past. That's why you should care. Either you're being efficient with your email, you're ignoring a whole lot

of stuff you could be handling well, or you're straight up wasting time.

The email experience boils down to two basic things: consumption and composition.

Consumption

First and foremost, you're going to suck at replying to messages if you can't effectively parse your inbox. Personally, I use Inbox on mobile and Mailbox on Mac (Inbox does have a web app, but it's bloated and certainly doesn't feel native). Either way, you need to:

- Use **Archive** well.

As soon as a conversation gets resolved, swipe right (no—not that kind of swipe). Archive the thread, and clear it from your inbox. Having 10,000 read things in your inbox doesn't do you any good. Don't worry—just because it's not in your inbox doesn't mean it's gone. Keep your attention to

active conversations. I rarely have more than 20 threads in my inbox at a time—the fewer you see when you open your app, the better.

- **Search** efficiently. This

one's really easy, and it ties into the last one. It's not in your inbox, but you should **never scroll**

through irrelevant messages to find what you want. Most

email apps have incredibly good search algorithms. Offload all your efforts. That's your main goal with every aspect of email.

- **Combined, not separate.**

I've seen this way too many times—students still use a separate portal for their college email. Import the account. There is no excuse for having to load two websites.

Composition

I compose about 45% of my emails on mobile, and I'm able to do that because of my general philosophy regarding emails—whether it's another student, a professor, someone in industry, or anyone else. It's nothing special, but it is important.

Let's look at a type of email I would hate to receive:

Hello Professor,

Hope you're having a cordial day. I thoroughly enjoyed your class this morning, and I've been ardently working on the homework assignment.

I have enclosed a rough draft of Set 4, and I would be grateful if you could review it.

Thanks for considering my request. Let me know if you need anything else from me. Have a nice evening, and see you in class tomorrow.

Best Regards,

Ok, so it's a bit artificial. But this really is something people do. There are a few things to keep in mind to avoid this:

- **Cut the [fluff].**

Don't fluff your email like you fluff your essays. Honestly, there's no better way to say that. Formality doesn't help anyone—you take more time, and people have more to parse (and they even could feel the obligation to return it).

- **Keep it short—tell the recipient what you want.**

Pretty much all the email you're going to be sending is a request. They're doing you a favor, and you should value their time—trust me, being 'nice' has nothing to do with being formal. Keep it to the point, and show that you care about the other things they have to do. That's nice.

- **Emails aren't to impress.**

Don't use random big words—clarity is first and foremost.

Rephrased:

Hello Professor,

Hope you're well. Set 4 is attached; let me know if I need to revise anything.

Have a good weekend!
Best,

It's not trite to the point of rudeness. That's the key—keeping it short without making it sound standoffish. **Don't be afraid of short emails:**

Cool, makes sense—thanks!

Slightly longer:
Hey Alex,

Are you free for coffee? Let's catch up next week. Been working on my thesis, and I've made some progress on research.

How does Monday look for you?

*Best,
Bob*

Note that if you're making a **specific** request, you need to suggest a **specific** action item (e.g., when you want to meet).

Whether you think email sucks or not, it's important enough that you can't afford to suck at it, especially if you're in college.

SPORTS

THE CALIFORNIA TECH

APRIL 6, 2015

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Enlow scores goal because she's so cool

GOCALTECH.COM
Actual Sports Content Editor

PASADENA, Calif. (Mar. 28, 2015) – Junior Soumya Kannan (Palo Alto, Calif. / Henry M Gunn) netted her seventh brace of the season as the Caltech women's water polo team hosted the University of Redlands in a SCIAC matchup on Saturday morning.

The Bulldogs got out to an early lead and distanced themselves late

in the second quarter to post a 14-3 victory. Redlands improves to 3-21 overall and 1-2 in the SCIAC while Caltech is now 0-12 (0-2).

Redlands scored the first three goals of the contest before Kannan struck at the 1:09 mark in the first quarter on an extraman opportunity. The Bulldogs netted the opener in the second quarter but senior Monica Enlow (Suwanee, Ga. / North Gwinnett) answered with her fourth of the

season to pull the margin back to two at 4-2. Redlands would net four more late in the quarter to lead 8-2 at halftime and increased it to 10-2 before Kannan completed her brace with just 37 seconds remaining in the third quarter. The Bulldogs struck for four more in a shutout fourth quarter to put the game out of reach.



Sometimes I wish I could remember the moments when these pictures could have been taken, but sadly all of my memories of Soumya Kannan boasting it up in the pool are fleeting ... mostly because I'm drowning the whole time.

-<http://gocaltech.com>



Garrett Levine stands unyielding at the plate despite harsh stares from the opposing team.

Photo Courtesy of Nhi Casey via <http://gocaltech.com>



Harrison Jacobs does his best to keep a straight face sliding home. I'm doing my best with these captions, but man, I'm losing my touch...

Photo Courtesy of Nhi Casey via <http://gocaltech.com>

Singles perform well

GOCALTECH.COM
Actual Sports Content Editor

CLAREMONT, Calif. (Apr. 3, 2015) – Sophomore Sophia Chen (Newport Beach, Calif. / Corona Del Mar) and freshman Rachel Morton (Oxford, Ohio / Talawanda) won at #2 and #5 singles, respectively, as the Caltech women's tennis team battled the No. 26 University of La Verne at the Claremont Club on Friday afternoon.

The Leopards posted a 7-2 victory to improve to 9-4 overall and 3-1 in the SCIAC, while the Beavers are now 5-8 (0-5).

La Verne swept doubles, including a pair of 8-0 wins at courts #1 and #3 while freshmen Vinci Chen (Austin, Texas / Westwood) and Grace Yao (La

Palma, Calif. / Oxford Acad.) notched a pair of games for Caltech at #2. The Leopards clinched the match shortly after singles play commenced as the No. 11-ranked player in the West region, Laina Matsuda, did not drop a game at #1 and Areli Martinez closed out #6 quickl, 6-1, 6-0.

The Leopards also won #3 and #4 singles in straight sets, but the Beavers left on a high note with victories in the final two matches.

Both Chen and Morton won their first set by identical 6-4 scores, and Morton dominated the second, 6-1, to earn the Beavers' first point. Chen had some more work to do after dropping her second set, 6-3, but responded emphatically with a 10-3 superbreaker.



Everybody get up; it's time for Sophia Chen to slam now.

-<http://gocaltech.com>



When in doubt, just creep on the men's tennis page to find really cool pictures of Morgan Lebby giving gravity-defying performances on the court.

-<http://gocaltech.com>

ANNOUNCEMENTS

THE CALIFORNIA TECH

ASCIT Minutes

ASCIT Board of Directors Meeting

Minutes for 31 March 2015. Taken by Sean McKenna.

Officers Present: Catherine Jamshidi, Connor Rosen, Patrick Nikong, Annie Chen, Sean McKenna

Guests: Chris Dosen, Elliott Simon, Nikita Sirohi, Anne Dorsey, Bianca Lepe, Margaret Lee

Call to Order: 12:05 pm

President's Report (Connor):

- Working to finalize rewording of BOC amendment which didn't pass. We will be hosting a town hall to talk about reason for the change. Goal is make sure people know what's going on and have the opportunity to ask questions.
- 12 term tuition policy survey will be sent out. Especially be sure to respond to it if you have been affected by the mandate to pay for 12 terms of tuition.
- UASH has been receiving more ineligibilities. We will make an effort to communicate the requirements more clearly.
- Leadership series is being hosted by Tom Mannion this spring.

Officer's Reports:

- V.P. of Academic Affairs (ARC Chair: Nima):**
 - CUE/Vice Provost/Nima met and took over the homework due times issue. Goal is to make freshman core problem sets due between midnight and 2am for the next academic year.
 - Looking into what ARC can do to get professors to submit grades on time in order to prevent them from turning in late grades which can make students ineligible.
 - Working on teaching scheduling times.
 - Sending out a library survey about closed times.
- V.P. of Non-Academic Affairs (IHC Chair: Cat):**
 - Preparing for prefrosh weekend and meeting with the President. Goals for the year: improving diversity on campus, improving interhouse relations.
 - Holding interviews for Secretary this weekend.
 - Meeting with the SURF office to talk about summer ambassadors.
 - New Presidents and House Picks Officers are meeting with Housing to discuss the timeline for fall room picks.
- Interim Director of Operations (Sean):**
 - ASCIT Food for Prefrosh Weekend is happening Thursday night at midnight.
- Treasurer (Patrick):**
 - Caltech Paddling Club applied for event funding.
- Social Director (Annie):**
 - ASCIT Formal will happen this weekend. People who are 21 or over get 3 free drink tickets.
 - ASCIT movie night is Avengers on May 1st.
- Secretary (Sean):**
 - BOD meet and greet on Saturday 11 April to meet current position holders in advance of upcoming elections.

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. The next meeting will take place on April 7th at Noon in the Winnett Common Space.

Meeting Adjourned: 12:42 pm

YOU ARE NEVER ALONE.

**REMINDER FROM
THE COUNSELING CENTER:**

Meditation Mob
(drop-in mindfulness
meditation group)
Meets every Tuesday
Bottom floor of Winnett
12:00-12:50 pm

Celebrate

EARTH DAY



all month

April 2015

Wednesday, April 8	Charting Irreversible Climate Change with Jason-3
Winnett Lounge 12pm-1pm	Josh Willis, JPL ocean and climate scientist Lunch provided
Friday, April 10	Workshop: Embedded Water & Energy
SFL 328 4pm-5pm	Find out how to make a difference in your water/energy consumption
Tuesday, April 14	Climate Change Adaptation
Watson 104 12pm-1pm	Robert Lempert, Director, Pardee RAND Graduate School Lunch provided
Thursday, April 16	Remote Sensing of Global Carbon and Water Cycles
Winnett Lounge 12pm-1pm	Narendra Das, JPL water and carbon cycle scientist Lunch provided
Friday, April 17	Earth Day Community Fair
San Pasqual Walk 11:30am-1:30pm	Come check out a variety of local environmental organizations and learn how you can get involved
Friday, April 17	Movie Night: Growing Cities
SFL 328 7pm-9pm	This documentary examines the role of urban farming in America: how it can revitalize our cities and change how we eat Food provided
Saturday, April 18	Workshop: Gardening 101
Catalina Apts. Community Garden 2pm-4pm	Come exercise your green thumb at this workshop lead by Jeri Huston, UC Master Gardener
Monday, April 20	Workshop: Citizen Engagement
SFL 328 5pm-6pm	Learn more effective ways to take productive action to implement change Food provided
Wednesday, April 22	The Energy/Water Nexus
Winnett Lounge 12pm-1pm	Steve Frei, Principal, Affiliated Engineers Lunch provided
Wednesday, April 22	Ask a Scientist & TACIT Performance of Two Degrees
Beckman Mall & Ramo Auditorium 5pm-9pm	Open Q&A with climate scientists followed by a special performance of Two Degrees written by Tira Palmquist Food provided
Friday, April 24	Workshop: How to Reduce Your Carbon Footprint
SFL 328 5pm-6pm	Calculate your carbon footprint! You might be surprised at what steps you can take to reduce it Food provided

Caltech sustainability



Caltech Graduate Student Council

Flyer Courtesy of John Onderdonk/Director of Sustainability at Caltech

Caltech Public Events Hiring Ushers

**Flexible hours.
No experience needed.
Outgoing Personality.
Pay Rate:
\$15 per hour**

Caltech Students only!!

**Contact: Adam Jacobo
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Letters and submissions are welcome; e-mail submissions to tech@caltech.edu as plain-text attachments, including the author's name, by Friday of the week before publication. *The Tech* does accept anonymous contributions under special circumstances. The editors reserve the right to edit and abridge all submissions for any reason. All written work remains property of its author.

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FEATURE

THE CALIFORNIA TECH

APRIL 6, 2015

7

Brad/Chad Business Tutorial: Not just theory

BRAD CHATTERGOON
Contributing Writer

Hey, Caltech. I hope that the first week wasn't too rough. Also welcome to campus to any prefrosh who might be reading this. One piece of senior sage wisdom, do Bi 001 before senior year.

This week I want to talk about something that will most likely not show up in any business literature that you have read: soft skills. We all know about the "hard skills" associated with business like marketing, finance, strategy, etc., but we very seldom mention the "soft skills." These include interacting with others, our perspectives on social boundaries at the office, networking, working on a team, etc. These soft skills are also controversial in a lot of ways because their execution can sometimes vary based on gender, sex, sexual orientation, and race. As I am writing this I am realizing that this article itself is going to be controversial as well.

It is important here to provide some motivation for this article. Some of you, although I expect very few, may have heard about the recent case of *Ellen Pao v. Kleiner Perkins Caufield & Byers*. For a bit more of the "why should we care" part of this article, Kleiner Perkins is one of the oldest and most influential venture capital firms in the world. They have been early stage investors in hot startups like Facebook, Google and Amazon, even before they were hot. Pao was a junior partner at the firm for several years and recently brought a law suit against Kleiner Perkins for sexual discrimination after her employment there was terminated. I will leave collection of the case details to the reader and will instead choose to focus on the issues raised in the case that relate to the soft skills I have been referring to.

1. Workplace relationships are a bad idea. Hopefully you will have looked up the case details and

found out that Pao was involved in a sexual relationship with another junior partner at the firm that eventually ended, and even started, on bad terms; at least according to Pao. Pao alleges that the subsequent end of that relationship and eventual promotion of the other junior partner to senior partner led to several complications for Pao in the form of being left out of email chains and omitted from access to other sources of information. I imagine that engaging in a sexual relationship at work did not help Pao's case in the eyes of the jury. Further, however, the promoted junior partner was removed from the firm at the outset of the case. To be sure, this ended poorly for both parties.

2. It's important to be loud and clear about any perceived injustices when they happen instead of waiting for several of these perceptions to accumulate before choosing to address them. Further, in being loud and clear, ensure that the course of action leaves a paper trail that can be readily referenced if these injustices are to be addressed by a larger body, say, for instance, a court of law. At the same time, however, it is important to know which battles to fight and which to let go of. For example, suppose some of the members of the firm decide to go out for drinks after work but they don't invite you. Filing a complaint about them is sure to not only be frivolous but also leave a bad taste in your coworkers' mouths. Instead it might be more fruitful to take an interest in your coworkers, and if they choose not to return that interest it would behoove you to find some coworkers that do. If such coworkers do not exist, chances are it may just be you and what you do with that realization is at your discretion.

To be continued...

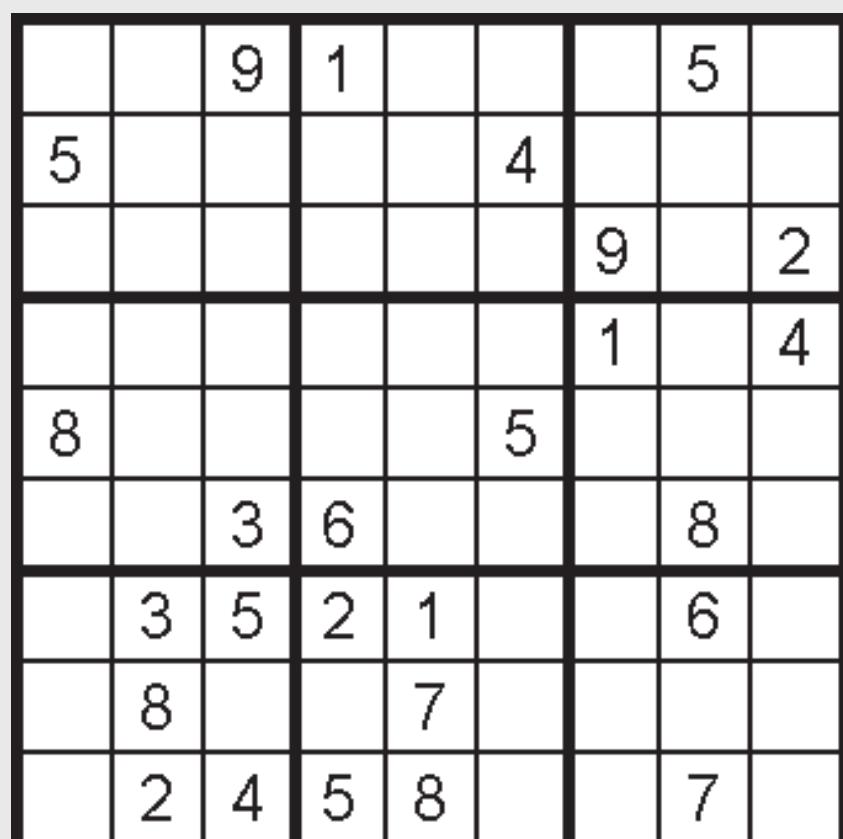
-Brad/Chad



Maintaining good relationships between coworkers is an important soft skill in business.

<http://pixabay.com>

Sudoku



<http://puzzlechoice.com>

Death Grips releases new, dynamic album

Continued from page 3

still able to produce entertaining music is that compositionally this is almost a return to its pre-*Government Plates* style. Ride's verses have never been particularly easy to understand, but on *Government Plates* and the first half of *The Powers That B* they became downright obfuscated, and I feel as though the extra effort required to even begin to interpret it detracts from what is otherwise such a visceral experience. *Jenny Death*'s lyrics, on the other hand, don't lay out everything they're trying to say with a sort of sickening simplicity, from "I Break Mirrors With My Face In The United



<http://thirdworlds.net>

States" and the manic chanting of its title to the disconcerting "Pss Pss" and its flagrant disrespect for other humans with lines like "I'm the only thing ever on my mind / You're one of those things I never rewind." There is hardly a moment on this part of the album in which MC Ride doesn't express hatred toward someone else or himself, the latter of which is particularly prevalent thanks to numerous mentions of suicide. This feels like the death throes of Death Grips, letting out a torrent of their most animalistic creative products that, like anything disturbing, is impossible not to bask in vicariously.

So what's wrong with the album's first disc? Put simply, it's not that it does anything incorrectly so much as that it doesn't have much to make it as special as its counterpart. Stylistically,

the album it most resembles is *Government Plates*, which itself was somewhat of a departure from its predecessor *No Love Deep Web* in its esoteric explorations of strange sounds and convoluted lyrics. The first half of *The Powers That B* is similarly abstract, preferring instead to experiment with textures frequently involving vocal samples of Björk. What's interesting about this is the way in which the samples are used; they're often so short and mechanically looped that they stick out like a malfunctioning robot, and this creates a huge amount of tension within the music as Björk's and MC Ride's voices try unsuccessfully to coexist in the same sonic space. It's a surprisingly abrasive effect, but without much substance behind it the disc becomes more of a novelty art piece than a memorable collection of tracks.

Listeners have endlessly discussed Death Grips since the band first came on the scene, and there's far more to be said about its most recent release, *The Powers That B*. Unsurprisingly, Death Grips has once again managed to create a sprawling work of dynamic, thought-provoking art. Though the album has its flaws, it manages to draw from across Death Grips' discography and move into new territory at the same time. Opinions on the album's first half will likely depend on which Death Grips album is your favorite, but I think *Jenny Death* (miraculously) beat the hype, and will be remembered as one of the group's best works. Together, the two form an album which is a poor introduction for first-time listeners, but by all means deserves to be considered among its peers.

HUMOR

THE CALIFORNIA TECH

HOUSETALIA

Hey, Ruddock, how do you do #3, with the vectors?

It's simple. According to Theorem P.F in Bullsh*ticum, we infer that the curl is 0. From there-



(The character is lying on the floor, holding their head in pain.)

Guys, we can't use the pass/fail theorem anymore remember?



Smile to hide the pain ...

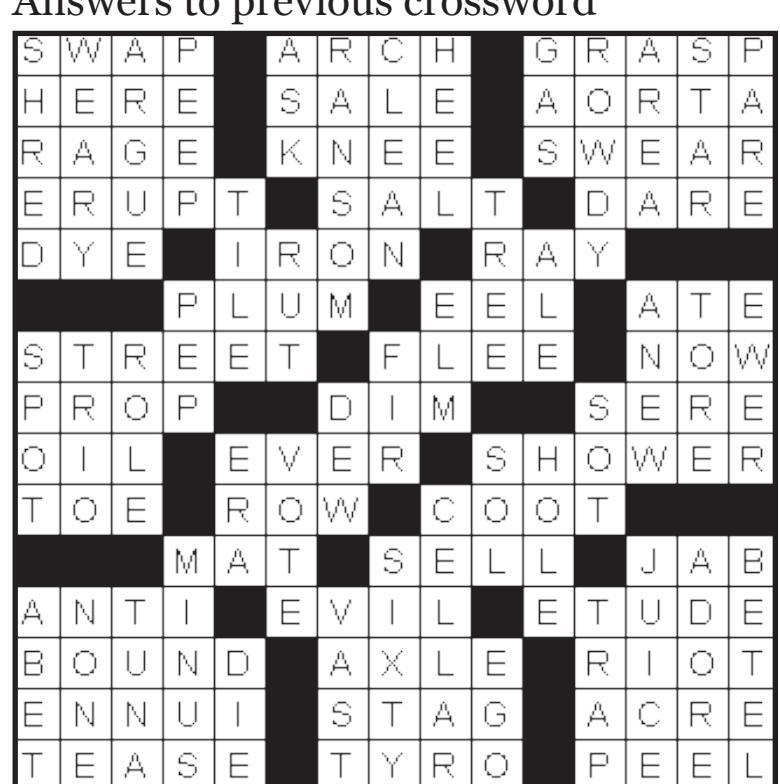
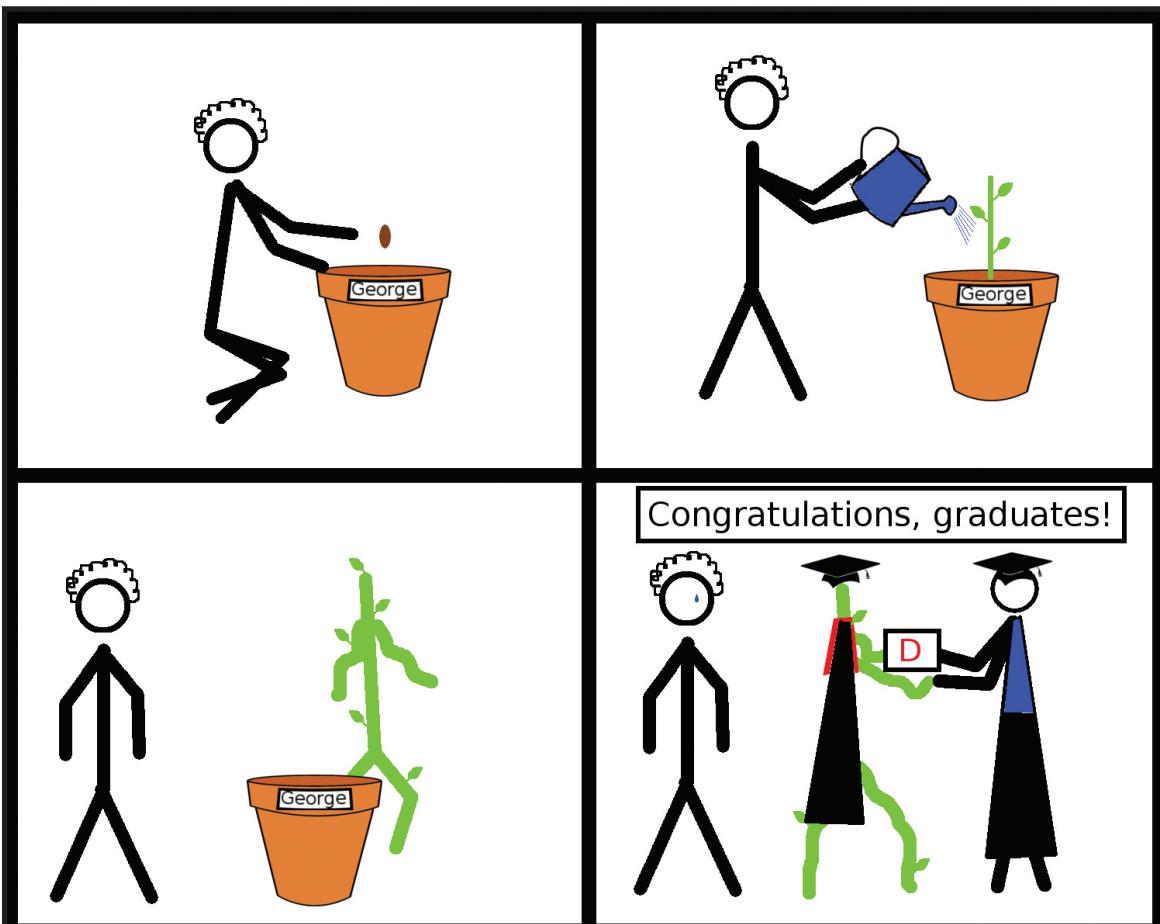


This will be a long term.

Amulya Mohan

"They grow up so fast"

Georgio Kraggman



-<http://puzzlechoice.com>

Answers to previous crossword

Acquired Taste

Dr. Z



6	4	1	7	2	9	5	8	3
8	3	2	5	6	4	1	7	9
9	7	5	1	3	8	4	6	2
7	1	8	6	4	3	2	9	5
3	2	6	9	5	1	7	4	8
5	9	4	8	7	2	6	3	1
4	5	9	2	8	7	3	1	6
1	6	7	3	9	5	8	2	4
2	8	3	4	1	6	9	5	7

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