Mike Vanier voted Professor of the Month

SANDHYA CHANDRASEKARAN
News Editor

Mike Vanier has been teaching CS1, the introductory computer-programming course at Caltech, for over ten years. He first began as a recitation instructor in 2001, but a took over the course a few years later. In 2009, he completely overhauled the course structure and implemented the current course.

"While the old course was geared more towards students with computer science backgrounds, students who had not programmed before found the material too abstract and theoretical. My goal for CS1 has been to tailor the course more for beginner students and to teach them some interesting computer science concepts. By and large, I would say it has been successful."

CS1 is geared for students who have no or limited knowledge of programming. Vanier adds, "We use the Python programming language, which is wonderful for teaching, and is also very practical and used in a lot of research labs and in industry. We start from the absolute basics. We then progress into object-oriented programming and towards the end of the course, we have a lot of interesting material about functional programming, generators, and more advanced concepts. Along the way, we include exercises and mini-projects."

He also tries to keep the class light-hearted and engaging by showing movie clips in the middle of class as an interlude to "spice things up."

This year, the course has seen a rather large increase in enrolled students, which has risen from 200 to 250. While Vanier admits that handling this logistically has been a challenge, he is quite pleased with the student interest in the course. Discussions about offering CS1 in another term (in addition to fall term) are ongoing. In the meantime, Vanier has implemented a short-term fix to appease his students. He describes, "I have become more flexible in signing course conflicts.

The lectures are very readable in the slide forms and they are all posted on the website. So if students learn better that way, I understand, but I always welcome them to attend lectures. A lot of the philosophy behind his course is based upon his own experiences as a Caltech graduate student. Specifically, he noticed, "that many times, professors did not care about how difficult their classes were." Vanier strives to make his classes both fair and doable. He restates, "People should try to have fun. Under all this pressure, people lose sight of how much fun science can be."

"So I encourage people to not overload, not put themselves in stressful situations." Vanier also urges his students to approach him and the TAs if they need help. "We have seventeen TAs, and it is a shame that students do not make use of the opportunities available to them. Students also have this idea that professors are scary. But I want people to call me by my first name and talk to me."

The great thing about Caltech is that there is no barrier between everybody, and people don't realize that."

"What I enjoyed is coming here and everyone calling famous scientists by their first names. It creates a nice community."

A unique issue that Vanier has encountered while teaching this course is adapting to the variability of experience his students have. He explains, "We often get people who have been programming since they were nine years old."

"While many of them place out of CS, some may be in the course for multiple reasons. Then you have people who have never ever done any programming before, and then people in the middle. So I have a large range of students I have to please."

But Vanier has come up with a way to handle this situation. "For the most part, I have been trying to go for the low end. This year, I am planning to have some problem sets geared toward people in the high end, which will be completely optional, just to provide people who can sail through the course with something to do."

Vanier attributes the numerous improvements his course has seen over the years to the feedback he has amassed from his students. "Most of the feedback we have gotten has been pretty positive and students seem to get a lot out of it. In addition to the TQFRs, I send out questionnaires on the Moodle site. Written responses are underepresented. The why questions are really valuable."

Vanier's enthusiasm about teaching computer science has recently extended beyond his undergraduate classes into the LEAD Summer Science Camp Program, where he co-teaches an introductory Python course to high school students with fellow lecturer Donnie Pinkston. He elaborates, "A lot of students in LEAD come from backgrounds where they would never be expected to come to a place like Caltech, we have the opportunity to give them a feeling for that. In fact, one student from LEAD is in CS1 right now!"

At the end of the day, Vanier admits that it all boils down to passion. "I really love my subject, and I try to convey that as much as possible. Based on his students' satisfaction, it is quite clear the Vanier has been getting this mindset across quite effectively.

Mike Vanier voted Professor of the Month

Helping readers burst out of the Caltech bubble

News briefs from around the globe

Need to know < 100 words about the world this week – topics sorted from good to bad by The Tech Eds

Giants sweep world series 10 inning game yields a final win for San Francisco over Detroit

SpaceX completes flight 3 commercial cargo flight ended with Dragon falling into Pacific

French pres opens garden 18th century Elzyee Palace gardens now open for public viewing

New Gender Gap Report 22nd is US, still far behind Scandinavian countries but catching up

NYC prepares for storm 375,000 ordered to evacuate in anticipation of Hurricane Sandy

Syria breaks ceasefire 4-day holiday broken as Syrian air force fires missiles at rebels

Nigerian church attacked 7 killed and dozens injured in suicide bombing during Mass
Food with Mannion!

Do you like eating food? How about free food at nice restaurants? Ever want to tell the world exactly what you think of said food? The Tech will be beginning a new column to chronicle the foodie experiences of new writers every other week... The Catch: They’ll be going head-to-head with Tom Mannion who will be reviewing the same restaurant. If you have ever thought you were more of a gourmand than our resident master chef, now’s your chance to prove it!

Email us for a spot on the list at tech@caltech.edu

ASCIT Minutes

ASCIT Board of Directors Meeting
Minutes for October 25th, 2012. Taken by Allika Walvekar

Officers present: Diego Caporale, Christian Rivas, Pushpa Neppala, Mario Zubia, Michelle Tang, Puikei Cheng, Allika Walvekar

Officers Absent:

Call to Order: 8:55 (due to make-up club funding)

President’s Report (Diego): Diego would like to invite any student who would like to present at TedEx to email Joseph Lima at jlima@caltech.edu. Though he cannot guarantee there will be an open spot, you should definitely try if you are interested. The main subject of the TedEx conference will be the brain.

Treasurer (Puikei): Received some Big I funding from the MOSH. Puikei is working with the Big T to ensure that yearbooks are printed after they receive dues.

Discussion Elements:

Staff Members that have shown interest by contacting ASCIT members after signing up at Club Fair will be sent to review committee for approval.

ASCIT will be holding a Meet & Greet at Tom Mannion’s. Diego will be finalizing the date.

Meeting Adjourned: 9:54
Peter Thiel starts third year of 20 under 20

Moriah Brielle
Contributing Writer

On June 15, Peter Thiel, founder of the “20 under 20” scholars program, announced his new 2012 class of scholars.

“Our world is suffering from a tech innovation drought.”

- Peter Thiel

In exchange for dropping out of college, Thiel Fellows each receive $100,000 dollars and access to the Thiel network of entrepreneurs, investors, and scientists to bring their technological and scientific ideas to life.

Thiel’s program is founded upon the idea that self-directed projects and inner motivation produce solutions to problems significantly faster that the “stifling” university.

In fact, Thiel was inspired by Newton’s success; “In 1665 when Cambridge University closed due to the plague, Isaac Newton used his time away to pursue self-directed learning and ended up inventing calculus.

The drive to make a difference is what truly matters,” he said. Winners will soon be diving head first in their projects, which encompass everything from ecology.

Fellows Kettner Griswold and Paul Sebexen, both age 19, plan to reinvent the fields of health care and biotechnology through their work on a bench top genome synthesis device. Spencer Hewett, age 20, will be working on a mobile payment device to improve shoppers’ experience at the checkout line and discourage shoplifting. Fellow Taylor Wilson, age 18 and the youngest person in history to create nuclear fusion, wishes to fight terrorism while simultaneously improving the diagnosis and treatment of cancerous diseases involving enriched uranium. According to co-founder Jim O’Neill, many Thiel Fellows have “started and sold companies, closed million-dollar funding rounds, won international entrepreneurship and scientific awards, spearheaded innovative social movements, and [have] begun to transform fields like education, software development, clean energy, electric vehicles, robotics, medical technology, and finance.”

“Our world is suffering from a tech innovation drought,” said Peter Thiel. “We think young people are capable of tackling hard problems and building big things, and we hope to enable more of them to work on cool projects for two years and push the boundaries of what’s possible not just a decade from now, but today.”

Looking to the future, the Thiel Foundation released the application for their class of 2013.

Applicants should embody the Foundation’s objective to defend and promote “freedom in all its dimensions: political, personal, and economic...to empower people to improve their lives, champion organizations and individuals who expose human rights abuses and authoritarianism in all its guises, and encourages the exploration of new ideas and new spaces where people can be less reliant on government and where freedom can flourish.”

Applications must have been born before December 13, 1992 to qualify.

Teams of up to four may apply. Applications are found online at ThielFellowship.org and are due by 11:59 P.M. (UTC-12) on December 31, 2012.

Nominate your favorite professor for the Feynman Teaching Prize!

Here’s your chance to nominate your favorite professor for the 2012-13 Richard P. Feynman Prize for Excellence in Teaching! You have from now until January 2, 2013 to submit your nomination package to the Provost’s Office to honor a professor who demonstrates, in the broadest sense, unusual ability, creativity, and innovation in undergraduate and graduate classroom or laboratory teaching.

The Feynman Prize is made possible through the generosity of Ione and Robert E. Paradise, with additional contributions from an anonymous local couple. Nominations for the Feynman Teaching Prize are welcome from faculty, students, postdoctoral scholars, staff, and alumni.

All professorial faculty of the Institute are eligible. The prize consists of a cash award of $3,500, matched by an equivalent raise in the annual salary of the awardee. A letter of nomination and detailed supporting material, including, but not limited to, a curriculum vitae, course syllabus or description, and supporting recommendation letters should be directed to the Feynman Prize Selection Committee, Office of the Provost, Mail Code 206-31, at the California Institute of Technology, Pasadena, California, 91125. Nomination packages are due by January 2, 2013.

Additional information including guidelines for the prize and FAQ may be found at http://provost.caltech.edu/FeynmanTeachingPrize. Further information can also be obtained from Karen Kerbs (626-395-6039; kkerbs@caltech.edu) in the Provost’s Office.
NINA BUDAEVA  
Staff Writer

Tchers are good at adapting. This increases their efficiency because, as well adapted, they have minimal energy loss to the environment due to friction with the surroundings. Sitting outside Chandler the other day, I spotted Joe once more, for Joe is the name of the Tcher who is fighting off the spell of the Medussas so relentlessly.

Joe is living a new and improved life. He further optimized his transportation method by adopting a Roller surfboard. He was quite proud of this innovation for now his transportation is so efficient, that even if the C-store is closed, he does not lose much time if he roller-surfs back to his room and then logs into the website isthocstoreopen.caltech.edu to see when the C-store will re-open. This way, he minimizes the time he must spend awkwardly socializing with people he does not desire to socialize with, the way he did on that horrid night when the C-store closed for a break.

Joe has a focus and so he studies. He studies long and hard, and adapts the rest of his schedule to his studying regime. However, Joe is intelligent and understands that an overworked brain can tragically give out one day, and so he allows himself some entertainment. Having resolved to never look a Medusa in the eye for the sake of preserving his valuable brain cells, he resorts to more abstracted entertainment in order to keep his being intact. He is constantly updating and pruning his electronic library whose contents he will never share with anyone.

No one shall see it for this is his secret, this is his own world, and Joe to anyone who tries to enter and explore it.

Joe's life is rather private, for if anyone knows all the details of his emotions then who knows what will happen! He has a secret: his favorite musician is Taylor Swift. He cannot describe what exactly it is about her music that captivates him so much. Once while drifting off into a daydream listening to her album, he saw the image of the sweet girl from the C-store night smiling at him as he subconsciously mumbled a greeting to her.

Seeing Joe march to the library that day when he resolved to resist the Medussas (he hadn't gotten his Surfboard Board yet), I remember that I too had to go to the library. On the third floor of SFL, while twisting my brain over one problem, I saw a tall guy walk into the room. He looked puzzled. He was definitely not from the area.

Later I found out that he is a transfer student from another institute on the East Coast. So, he's from the outside world.

As he walked into SFL, he thought that he had taken the wrong directions and accidentally come to the gym. He wanted to find a good quiet study area because the problem I'd been sweating about all along.

Blah blah blah, heard it all before, right? Well, not exactly. Disney has long been able to take the standard, predictable hero's tale and transform it into something fresh and entertaining, and Wreck-It Ralph is no exception. The world of video games is such a vibrant and limitless environment that the creators have no trouble producing an exciting and fun story. To accompany this excellent setting is a star-studded cast, including John C. Reilly (Chicago, Step Brothers), Sarah Silverman (The Sarah Silverman Program, School of Rock), Jane Lynch (Glee, Best in Show), and Jack McBrayer (30 Rock). They do such a good job of bringing life to these video game characters that you forget they're actually watching real people.

The movie is also not lacking in the art department. It's beautiful. They are able to create three very different settings for the three video games Ralph visits on his journey, with each one more gorgeous than the last. The same goes for the music. Henry Jackman's score is great, and they sought in so much trouble to provide some additional tracks. Skrillex (yes seriously) provides the music for the dark world of first-person-shooter. "Hero's Duty," while Japanese pop-band AKB48 wrote a catchy theme for the candy-ridden cart racing game "Sugar Rush."

Of course, being a Disney movie, there is a certain level of cheesiness that comes with the film. The movie is rife with clichés and puns that will have the five-year-old in you rolling in the aisles (We won't talk about exploitable the title of the game "Hero's Duty")

However, the movie is very aware of itself. The writers know they're making cliché jokes, but they do it with such energy and Disney class that you can't help but giggle at the word "duty" (c'mon. It sounds like doodle. Like poop. Get it?).

For those salky kids too cool for Disney, The video game references should be enough to draw you in alone. This movie was obviously made by people who love video games. In fact, when I asked writer Phil Johnston about it, he said, "I grew up with Pac-Man, Q-Bert, Food Fight, and Tapper. So it was part of who I was as a kid." And not only are the references abundant, they're actually good. Some are blatant, but many are cleverly subtle. Without spoiling too much, I can say that people who know video games, not corporate bigwigs trying to reach a target demographic, put them in. But if you're a casual gamer like me, or you have never touched a controller in your life, you will still enjoy the movies. Don't worry. All in all, I would say this is a great movie and definitely worth seeing in theatres. Wreck-It Ralph opens in theaters November 2nd.
The Siemens Competition in Math, Science and Technology is coming to the California Institute of Technology!

The Siemens Competition takes great pleasure in inviting you to the following events:

**Student Project Exhibition**
(Refreshments will be served)

- **Date:** Friday, November 9, 2012
- **Time:** 5:00 pm – 6:15 pm
- **Location:** Dabney Lounge Dabney Hall
  Pasadena, California 91106

**Student Oral Presentations**

- **Date:** Saturday, November 10, 2012
- **Time:** 8:15 am – 1:15 pm
- **Location:** Ramo Auditorium
  Pasadena, California 91106

Please RSVP by Friday, November 2, 2012:
http://tinyurl.com/SiemensCompetition2012

www.siemens-foundation.org
Caltech Public Events is now hiring student ushers.
$15 per hour to work concerts, performances, lectures, films and parties.
No experience needed, no hard labor, flexible schedules.
*Requirements: Caltech student, Positive attitude, Friendly personality

To apply email Adam Jacobo (ajacobo@caltech.edu) or call (626)395-5907

For info on Caltech Public Events visit: www.caltech.edu/content/public-events
Cross country ends season at SCIACs

CHINO, CA – The 2012 cross country season came to a close at the 2012 SCIAC Championships for the Beaver harriers.

A handful of personal and school marks fell on Saturday morning at Prado Park.

In the men’s race Aditya Bhagavathi concluded stellar first collegiate season by finishing the 8K course in a personal best 27:13. The time is the ninth best individual effort in Caltech history. Of the Beavers’ five races, Bhagavathi was the top finisher in four of them.

The second fastest Beaver was Andy Zucker who completed the rolling hills course in 28:34. The senior concluded his career by running his best effort on that course. Ian Koss was the third Caltech harrier to cross the finish line as he completed the course in 28:58. Juan Adame ran a collegiate personal best 29:03 to count as the fourth scoring runner for the Beavers. The fifth scorer for Caltech came from Michael Ignatowich time of 29:23. The graduate student’s time is his best effort at Caltech.

As a team they bested new SCIAC member Chapman to finish eighth. The Beavers were nudged out by Cal Lutheran by three points and the University of Redlands by six points.

The women’s race saw Stephanie Reynolds take top honors, once again, among Caltech runners. The sophomore ran the 6K course in 25:24 which tops her effort from last season by 58 seconds. Of the 11 races she has competed in at Caltech she has been the squad’s top scorer in all but one of them.

Juliette Becker’s time of 26:24 earned her second best for Caltech. The junior improved on her time for the 2011 campaign by nearly two minutes. Marlyn Moore was the third scorer for the Beavers as she crossed the finish line in 28:39.

Trisha Guchait’s time of 28:51 earned her the fourth best mark for Caltech while first-year runner Alice Michael completed the course in 29:29 to round the scoring Beaver harriers.

The Caltech ladies squad also bested Chapman in team scoring. “Like” Caltech Athletics on Facebook and follow them on Twitter. #gocaltech #beaverfeaver #hashtag

This Week in Sports Quotes:
Back with a Vengeance Edition/ Overheard at the Soccer Game

“We always play like crap against the worst teams.”

-Pomona soccer fan after defeating Caltech 1-0

“That would have been a great goal if there were no goalie...”

-Caltech soccer fan

“Can I get a yellow card?”

-Pomona soccer player trying to intentionally delay the game. Sportmanship and classiness at its finest.
Acquired Taste

by Dr. Z

Oh no, there's been an accident? I'll be there right away!

For more photos, videos, and archives of previous issues, check out the Tech website!

tech.caltech.edu

The California
Tech
Caltech 40-58
Pasadena, CA 91125