Caltech Students Recognized for Excellence in Leadership

By MALINA CHANG

The 2005 Doris Everhart Service Award was given to graduate student Eve V. Hsu. An active member of the Caltech community, Hsu has dedicated herself to improving student life at the Institute. She was very active in the boarding student debate over freshman in Avery, and, through her leadership, the relationships between IHC and the Avery Council have considerably improved to the benefit of all parties.

The 2005 Guernsey Service Award was given to graduate student Emily M. Smith. Smith has been an active member of the Caltech community for four years, and has made a positive difference for the quality of life on campus.

The 2005 Y's Executive Director from 1989-1991, the Caltech Y Exec Comm annually gives the Lucy Guernsey Service Award to one or two students who have provided exceptional service to the Y or the community and exemplify a spirit of service.

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Scholarships Take Students Abroad

By CHRISTINE CHANG

While many graduating seniors and alumni decide to pursue further education or work in the United States, others pursue dreams of studying abroad and experiencing different cultures. Many prominent scholarships allow these dreams to become a reality. This year, seniors Wei-Lien Deng and David Powers, in addition to alumni Michael Atkin and Joseph Jewell won multiple prestigious scholarships to study abroad in countries ranging from England to Japan.

Deng won one of 43 Marshall scholarships awarded each year. The Marshall Scholarship program, which began in Britain in 1953, provides $60,000 for two years of post graduate study at any university in the United Kingdom. The Marshall committee selects for the award people who possess the capacity and desire to make a difference so that they may become ambassadors to the world. "I believe the Marshall is a great opportunity for achieving my professional goals and experiencing personal growth," said Deng.

Attending Cambridge University, Deng will pursue two degrees, one in nanoscience and another in technology transfer. Deng will work with Professor Bill Milne, the leader of the carbon nanotube group in Cambridge engineering. Milne served as an inspiration for Deng's current research. "Going to Cambridge gives me the opportunity to do a year's Master's research herein, but 2005 Deans' Cup and Campus Life and Master's Award. Deans' Cup and Campus Life and Master's Award go to undergraduates whose persistent efforts to improve the quality of undergraduate life and effective communication with members of the faculty and administration have testified to their concern for their fellow students.

Jenny Fisher '05 received the 2005 Deans' Cup. Ryan Farmer '06, Jason Quinby '05, Neil Tewari '05 and Chuck Yee '05 received the Campus Life and Master's Award. The Lucy Guernsey Service Award was given to graduate student Eve V. Hsu. An active member of the Caltech community, Hsu has dedicated herself to improving student life at the Institute. She was very active in the boarding student debate over freshman in Avery, and, through her leadership, the relationships between IHC and the Avery Council have considerably improved to the benefit of all parties.

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Eva Murdock '06 and Sarah Hugg, a fifth year graduate student, have earned the Lucy Guernsey Service Award. The Lucy Guernsey Service Award was given to graduate student Eve V. Hsu. An active member of the Caltech community, Hsu has dedicated herself to improving student life at the Institute. She was very active in the boarding student debate over freshman in Avery, and, through her leadership, the relationships between IHC and the Avery Council have considerably improved to the benefit of all parties.

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The placid tranquility of a sunny April afternoon shattered last Monday, when a tremendous swarm of ants appeared in Dabney House. The creatures first appeared in the lounge but quickly spread. They took over tables in the courtyard and trash cans in nearby alleys and alarmed many residents with their colossal size. Some specimens measured as long as 39 inches, or 96 cm, and weighed up to 4.5 pounds, 2 kg. Tensions increased. Joshua Golsdme, a resident, stated, “ants suck and bite.” Meanwhile, some Dabneys were willing to accept the newcomers. Sarah Wright, another occupant, insisted, “Ants and Dabneys can learn to live together in harmony.”

Subsequently, a number of residents formed the Dabney Liberation Brigade and acquired several machetes, sledges, hammers, and cans of Raid, a self-proclaimed “ant and roach killer.” The Brigade planned the new counter-attack, which was to take the form of three independent units each targeting the conveniences and chemical weapons. Some Dabneys expressed skepticism of the Brigade’s motives, such as Leo Bron, who asked, “Why do they [the Brigade] want to overthrow the ants, when we can merely stand by and watch the massacre in Rwanda?” He continued to suggest that the Brigade should instead lay off all pipe through the ant-controlled zone, ACZ.

Despite these accusations, the Brigade eventually swept into the ACZ, all three units hacking, sledging and spraying until the ants converged in the brookway. The human side reported no casualties, but, at the end of the attack, giant ant limbs and entire carcasses littered the courtyards. Some ants reportedly scampered away, escaping into the SAC Courtyard and Blacker House to the east.

Many questions remain at the cessation of hostilities. Residents were unsure of the source of the ants, but one resident who asked to remain nameless accused nearby Fleming House of harboring the ants before the invasion. The Housing Office initially denied the charges, but later expressed the fear that “although the ants appear defeated now, any remaining ones may be lying in wait for the opportune moment to launch a guerilla-style insurrection.” However, various residents emphatically denied that the piles of dishes and food in the sinks and other similar obstacles were large enough to effectively hide more than a few a few three-foot long insects.

The Housing Office sent workers to lay down a line of “ant hotels,” three inch hollow discs containing poisoned food. The manufacturer claims that “the ants check in [by entering one of the slots in the disc] but they don’t check out.” But the hotels were only enough for typical ant species, too small for the colossal ant invaders.

For students intending to apply for fellowships, Powers recommends starting early on the application and participating in extracurricular activities. Additional, he advises that applicants research their proposals in order to find good projects. “I thought that the more specific information that I had for my project idea that I could cite, the better my proposal would be, so I looked at the literature and web sites of Japanese colleges and research institutions before writing my proposal,” said Powers.

Along with Powers, Michael Atkins, who graduated in 1999 with a degree in Applied Physics, won a Fullbright grant to study at Chalmers University in Sweden. There, he will enroll in the Master’s Program in Complex Adaptive Systems. “Programs in complex systems are currently few and far between, so the one offered at Chalmers seemed unique. It combines research and coursework, and all the classes are taught in English,” said Atkins.

After returning, he plans to enter a Ph.D. program. While this is Atkins’ first sojourn in Scandinavia, he has managed to maintain contact with researchers throughout the world. He participated in the first year of the Caltech exchange program with Cambridge University. Furthermore, from August 1999 to August 2000, he studied how people from various cultures in South America and Africa experience time.

While in Sweden, he will stay in Gothenburg. At Chalmers University, Atkins admits that it is difficult to balance school and work “since there is a lot of life outside of school.”

“I’m very good at balance. I tend to do one thing intensely and then move on to something completely different.” He supposed that the long-term balance comes from having a wide variety of experiences,” said Atkins.

In addition to Atkins, Jewell, a Caltech alumni was Fullbried in 2004, was named one of 32 Rhodes Scholars. The oldest international study awards given to American students, the Rhodes Scholarships grant $35,000 for two years of study at Oxford University in the United Kingdom. Rhodes Scholars must display high academic achievement, integrity of character, a spirit of unselfishness, respect for others, potential for leadership, and physical vigor. With his Rhodes Scholarship, Jewell will pursue a Master of Science by research in Engineering Science. He will research the fluid mechanics of hypersonic inlets for scramjets and ramjets.

“I hope to gain a new perspective, to have my horizons widened, to meet interesting people in a wide variety of fields, and I wish to become a researcher and engineer,” said Jewell.

Jewell had previously applied for the Rhodes but was not granted an interview. However, still wishing to explore England and Europe and interested in winning the scholarship, he applied again. While in England, he intends to play in the Oxford orchestra, travel around Europe and soak in as much history as possible. Prior to winning the Rhodes, Jewell attended graduate school at the University of Michigan. He plans to return to Caltech for his Ph.D.

For applicants of the Rhodes, he advises to continue to apply even after being rejected the first time. “Beyond that, pursue the things that you’re really interested in, both in science and outside of science,” said Jewell.

He said that doing the activities he loved helped him to achieve his goal of life outside of school with work. “I didn’t finish with a perfect GPA or anything, but I definitely don’t regret the time I spent pursuing non-academic or non-engineering activities at Caltech at Caltech. If you don’t have something fulfilling to take a break with, I think you’ll go crazy at Caltech,” said Jewell.
This is an open letter to Margo Marshak, the VP of student affairs at the California Institute of Technology. Caltech has a long history of independent student life. Caltech was the first institution to have an organization for student affairs. It was not until 1994 that the House of Representatives was formed to oversee student affairs. In 2002, the House of Representatives was dissolved and a new organization was created: The House of Representatives (HoR). The HoR is composed of 12 members, one from each of the 12 residential units on campus. The HoR meets weekly to discuss issues affecting students and to approve budgets for the upcoming year.

Dear Margo,

I am writing to you as the President of the HoR to express our concern about the recent censorship of student murals in the Hall of Honor. These actions breach long-standing agreements between the students and the administration. Several students have complained to us that they feel their rights are being violated.

We believe that art is a powerful tool for self-expression and that it should be protected. As you know, the Caltech community has a long history of independent student life. In 2002, the House of Representatives was dissolved and a new organization was created: The House of Representatives (HoR). The HoR is composed of 12 members, one from each of the 12 residential units on campus. The HoR meets weekly to discuss issues affecting students and to approve budgets for the upcoming year.

We would like to request that you reconsider your decision to censor student murals. As the President of the HoR, I can assure you that we will work with the administration to find a solution that respects both our rights as students and the concerns of the administration.

Sincerely,

[Your Name]

President, HoR

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Counter-stack Counter-stacking

By JEFFREY PHILLIPS

The end of third term is fast approaching, and I am looking forward to passing the last quarter of the year in my upcoming senior stack. In particular, I am excited to be working on the last day of third term, which I am planning to spend at Baxter Hall open to the students. In other words, it is fine if Dean Revel, or your employees have any painting. Your staff has repeat­edly denied my request to paint over the mural, but I am determined to get there. As I let one stilted summer pass by, I will reflect on my experiences and the myriad other devious methods, and the creative possibilities for destruction.

When your employees painted the mural in a particular crisis has saved someone's career or life. I hope that in the future you can hold yourself and your staff to a higher level of integrity. As the author of this particular "Conflict of the Civilizations" article, I hazard that it will be your fault if I am retracted Techers' doors when you try to send us any questions you may have regarding this argument.

Thanks,

Yan Zhang

Caltech Quiz Bowl

yzhang@caltech.edu

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To Our Readers:

Of Skeptics and Space Cases

Bright and early at 1350 this after­noon, I hauled myself up from my slumber, drowsily wedged my feet into my less comfortable pair of walking shoes, wrapped myself in my frayed denim jacket and warped, sporty felt derby against the sun's white-hot glare, and sauntered out to the door in search of a hall or auditorium with a name beginning with the letter "B." I learned of Bill Nye and his lecture on the world's ubiquitous microscopic Jádav. Halving between Beck­man and Baxter Hall, I knew not how to get there. As we walked in the shadow of the mighty Baxter, bulwark of the right brain func­tions, she asked whether I was a member of the Skeptics' Society, to which I replied that I had only read the lecture the first time. I first read the lec­ture announcement in reply, she pulled from her tote bag a Skeptic Society-affiliated news magazine that could easily have passed for a copy of the New Times from which someone had removed all the pages and encouraged to participate. We were both in the same boat. "I bet you know what this article is about," she said, opening it to the title page with the title "The Civilizations."

"Then selecting a specific chapter from a number of classics in the History of Philosophy, I hazarded that it was about "some civilizations that are conflicting with one another" and let her provide more details. The author of the article was Robert Nye, so the title was "Civilizations of the Civilizations." Rather than selecting a specific chapter from a number of classics in the History of Philosophy, I hazarded that it was about "some civilizations that are conflicting with one another" and let her provide more details. The author of the article was Robert Nye, so the title was "Civilizations of the Civilizations." Rather than selecting a specific chapter from a number of classics in the History of Philosophy, I hazarded that it was about "some civilizations that are conflicting with one another" and let her provide more details. The author of the article was Robert Nye, so the title was "Civilizations of the Civilizations." Rather than selecting a specific chapter from a number of classics in the History of Philosophy, I hazarded that it was about "some civilizations that are conflicting with one another" and let her provide more details. The author of the article was Robert Nye, so the title was "Civilizations of the Civilizations." Rather than selecting a specific chapter from a number of classics in the History of Philosophy, I hazarded that it was about "some civilizations that are conflicting with one another" and let her provide more details. The author of the article was Robert Nye, so the title was "Civilizations of the Civilizations." Rather than selecting a specific chapter from a number of classics in the History of Philosophy, I hazarded that it was about "some humanities had subsided, Dr. Michael Shermer, Director of the Skeptic's Society, welcomed his members by introducing all and rigged them with news of the scientific lecturers and stage magicians who would be performing at the first annual Skeptics' Convention on Saturday, May 14, at 10:00 AM. Caltech Quiz Bowl will be hosting an intramural tourn­ament for all of the students on the entire campus. All members of the Caltech community are welcome, whether undergrads, graduates, students, faculty, and staff, are welcome to participate. The quiz will be using questions specifically written for intramural tour­naments, so the difficulty should be at an appropriate level for all participants.

Teams will consist of up to four players who can be from any college, and the times will be set by the quiz master. The games will be held at the following website: http://quizbowl.caltech.edu, or you can contact me at 626-395-0300. Thanks.

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Thanks,
In national Exuberance
Zhiyun Guan: art, text (2)
Robert Barish: text (1)

No animals were harmed.

Thanks for helping with the proof... it makes so much sense!

Hey, wasn't the set due 10 minutes ago?

I hear one of the proofs is a nightmare!

A mad dash to Sloan and an accidental tumble into the ponds later...

...our hero makes the curious discovery that he does not, in fact, have a South Master.

Why does fate mock me?

The proof is trivial!

A sleepless night (or two) later...

Getting out of the Nutshell: Case 1

Express Yourself

Hmmm...

Heheh...

Excuse us.

Yoink!

Hey!

This time Caltech's censorship has gone too far!

I'm transferring!

To be continued next week...

Story by: Jesse Barzilai-Moore
Art by: Chelsea Sharon

G.L.O.M. - Greg's Life of Misery

Baby, if you were sine squared, I would be cosine squared, and together we'd be one!

By Ning Bao, Nathan Lau, and Angela Shih

I'm now officially out of gas.

By Shari'ah

Niggard Please!
The moral of this story for believers and skeptics alike: know what day it is before you seize it.
Seismic experiments prove the clue to earthquake wave directionality and growth speed

By ROBERT TINDOL

In recent years, seismologists thought they were getting a handle on how an earthquake triggers rupture in a preferred direction along big strike-slip faults like the San Andreas. This is important because the direction of rupture has a profound influence on the distribution of ground shaking. But a new study could undermine their confidence a bit.

Reporting in the April 29 issue of *Science*, researchers from the California Institute of Technology and Harvard University discuss new controlled laboratory experiments using dissimilar polymer plates to mimic Earth’s crust. The results show that the direction of rupture that controls the pattern of ground shaking is unpredictable than recently thought.

The results explain puzzling observations from the 2001 Northridge earthquake, in which a north-south rupture occurred. A southeastward rupture had been predicted on the basis of the two past earthquakes in the area and on numerical simulations. Also, during the recent large earthquakes in Turkey, some ruptures have occurred in the direction opposite to what happened in the past and are thought to involve unusually high speeds along that direction.

The phenomenon has to do with the basic ways rupture fronts (generating seismic waves) are propagated along a boundary between two materials with different wave speeds—an area of research that is yielding interesting and important results in the engineering laboratory.

The reason this is important is that geophysicists, knowing the wave speeds of the materials, can infer the different tectonic plates and the stresses acting on them, could someday have an improved ability to predict which areas along a fault might be more powerfully hit. In effect, a better fundamental knowledge of the workings of Earth’s plates could lead to a better ability to prepare for major earthquakes.

In experiment, Caltech’s von Kármán Professor of Aeronautics and Mechanical Engineering Ares Rosakis (the director of the Graduate Aeronautical Laboratories); his cross-campus colleague, Smit Professor of Geophysics Hiroo Kanamori; Professor James Rice of Harvard University; and Caltech graduate student Kaiwen prepared polymer plates to mimic the effects of major strike-slip faults. These are faults in which two plates are rammed against each other by forces coming in at an angle, and which then spontaneously snap through the scene to form the surface.

Because such breaking of lab materials is similar on a smaller scale to the slip of continental plates, the measurement of the force or stress wave propagation provides a good indication of what happens in earthquakes.

What’s more, if the rupture fronts are super-shear, i.e., faster than the shear speed in the plates, they produce a shock-wave pattern that looks something like the Mach cone of a jet flying breaking the sound barrier.

“Previously, it was generally thought that the velocity contrast, the rupture preferential direction, and the direction of slip in the low-velocity medium,” explains Kanamori. “In other words, if the low-velocity medium is the plate shifting to the west, then the preferred direction would typically be to the west. What we see, when the force is sufficient to break the surface, is that we simultaneously generate ruptures to the west and to the east, i.e., both the normal and in both sides go with sub-shear speed,” he explains. “As the normal increases sub-slowly, the westward direction of slip is preferred. If the eastward direction, becomes super-shear. This super-shear rupture speed is very close to the wave speed of the slower of the two materials.”

To complicate matters even further, the results show that, when the experiment is done at forces below those required for super-shear, the directionality of the rupture is unpredictable. Both waves are at sub-shear speed, but waves in either direction can be produced.

This, in effect, explains why the Parkfield earthquake last year ruptured in the direction opposite to that of past events. The experiment also strongly suggests that this earthquake had been sufficiently large, the super-shear wavefront then propagated northwest, even though the prefered direction was southeast. But the difference was whether super-shear is necessarily a bad thing, Kanamori says. “It’s a scientific result, but I can’t say what the exact implications are. It’s at least important to point out these things.”

“Also, it could only mean that earthquake ruptures are less predictable than ever,” he adds.
Caltech Beats MIT in Internet Chess Match

By NIKITA PANASENKO

On April 24, 2005, the Caltech Chess Team defeated MIT in an 8-board chess match played on the Internet Chess Club. The match was the second of two between Caltech and MIT. In 2003, Caltech beat MIT 5-3 in a match of the same format of this year’s contest.

In Sunday’s match, MIT jumped off to an early lead by scoring two quick wins. But Caltech kept the pressure on in the six remaining games, earning four wins and two draws, and winning the match 5-3 once again.

The Caltech team consisted of players Patrick Hummel ’06, Eugene Yanayt ’06, Karl Yee (staff), Howard Lin ’06, Joshua Gutman ’06, Edward Perepelinsky ’07, Phillip Perepelinsky ’07, and Zeb Rocklin ’08. The MIT team they defeated is one of the toughest college teams in the country.

The Caltech Chess Team is composed of members of the Caltech Chess Club.

Further information, including games from the Caltech-MIT match, can be found on http://www.it.caltech.edu/~citchess/