Hajimiri’s Radar Chip Leads To 2004 Top 100 Innovators Honor

By CHRISTINE CHANG

“Technology Review” honored associate professor of Electrical Engineering Ali Hajimiri by placing him on their 2004 edition of the world’s 100 Top Young Innovators for the development of a radar system on a silicon chip. Appearing like tiny squares and rectangles of silicon, each of the chips which Hajimiri and his group created contains an entire radar system on a chip. These chips contain a phase array system which emits a laser beam and steers electronically. Made out of silicon, which is cheaper than many other materials, this chip can be programmed with a computer and has widespread implications in high speed and wireless communications, among multiple other functions. Each design phase of each chip utilized about 5,000 man-hours by six or seven graduate students. Hajimiri and his group had been working on the project for four years, even though they had approached it in a very focused way for the last two years, said Hajimiri.

When first embarking upon this project, Hajimiri and his group focused on determining how to use silicon technology at high frequencies and high power. “We looked at the hardest part first, finding answers to the unknown, Pandora-Box things,” said Hajimiri. Some of the difficulties they studied first were reduction of the noise of the system, generation of power, and understanding the signal and limitations at high frequencies.

Studying the issues on a theoretical level allowed them to anticipate later challenges and to determine parts of the system: “This was a good bar to set,” said Hajimiri. Once the theoretical basis was set, Hajimiri and his team commenced with the design of the chip. “It was very important to have an open mind and not be bound by preconceived methods and the right way of doing it,” Hajimiri said. The group studied the communications aspect of the radar system, observing the limitations.

Record 3-Win Season Goal for Soccer Team

By BRIAN ZHOU

Two spectacular shutout wins against Bethany College and Whitier College early in the season gave the Caltech campus hope of a breakout season for the men’s soccer team. While the adrenaline from these victories could not propel the team to greater triumphs, positive karma still thrives. The players, who show no signs of letdown, swell as both of its wins this season extended to an incredible three wins in its past seven games. Rushton rates the team’s goal differential as a wonderful 22.

Next Wednesday, October 20 at 4:00 P.M., the team anticipates a competitive rematch against Whitier College. Unbelievably, Caltech may go into the game as the favorites; the team’s shutdown defense suffocated the Whitier team in a 1-0 victory last match.

As both of its wins this season have been on the road, the team hopes to one-up their win column total to an incredible three wins in front of the home crowd. Senior Evan Rushton stopped short of guaranteeing victory, conservatively judging, “I’d say we have 2 to 1 odds... I expect a win.” Indeed, after playing ten of its first eleven games on the road, the players are delighted to be back home and expect maximum support and showing from the fans in arguably the biggest game of the year.

The process of building a reputable soccer team is long and arduous, but the seeds for a stronger future seem to have been sown in this year’s team. Rushton rates the freshman class as “pretty solid” and is confident in their ability to carry this team to a breakout season.

PUBLIC ART PROGRAM KICKS OFF

TENDER LANDS COMES TO CIT

Artist In Residence Produces Sculpture Of Laboratory

By DAVID CHEN

“Dude, there’s this towable trailer that’s been parked here for the past week. I wonder why security hasn’t moved it yet.”

Such may be the thoughts of students as they walk past the end of the Olive Walk to the Coy Pond and observe a small, portable room that seems to have been abandoned. In reality, that object is an art exhibit titled Dr. Crump’s Inductive Geo-Imaging Field Laboratory. In fact, this month heralds the start of two art events, The Tender Land and the Artist in Residence program.

Dr. Crump’s Geo-Imaging Field Laboratory, by Michael C. McMullen, is part of Caltech’s Artist in Residence program. The month of October is the traditional time for the Laboratory, by Michael C. McMullen, to launch into a half-hour discussion of the history to science as we all so fondly remember. Goodstein explains why he thinks civilization as we know it will come to an end someday. The loss of oil as an energy resource will throw the planet into turmoil.

By JON MALMAUD

Last Wednesday, everyone’s favorite Physics 1 professor gave a lecture at Beckman Auditorium about his new book, “Out of Gas: The End of the Age of Oil.” In attendance were people of all ages and nations interested in hearing what Dr. Goodstein had to say about the world’s current oil crisis.

The professor started off the evening with his usual charming wit. His first point of the night was to refute the argument that conservation of resources will solve our energy problems alone, noting that “energy is conserved no matter what we do.”

Having the audience’s undivided attention, he launched into a half-hour discussion of the history to science as we all so fondly remember. Goodstein explains why he thinks civilization as we know it will come to an end someday. The loss of oil as an energy resource will throw the planet into turmoil.

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Dr. Crump’s Inductive Geo-Imaging Field Laboratory, a sculpture by Michael McMullen, is part of a Pasadena Public Art program.

Goodstein Proposes Ending of Civilization

Dr. Ali Hajimiri shows off one of the machines used to produce his revolutionary radar chip.
**History, Science, Politics, Oil Crisis Outlined During Lecture**

by sanguinely observing that “you don’t glow in the dark because you’re just too cool.” And it seemed Goodstein was too cool indeed as waves of smiles dotted the faces of many to whom this was new material.

After some more images of beams of light from the sun baking plants to oil, he proceeded to move on to El Nino and the “thermohaline” flow. Right when it seemed the gas crisis may have been forgotten about, Goodstein returned in full force with a lovely description of the Greenhouse effect. Professor that he is, he claimed that global warming is an experiment with the only planet we have. If it goes awry, the result could be a Venus-like planet where temperatures are greater than that of molten iron.

How to prevent the Greenhouse effect? One solution to build a parasol looming across the sky, akin to Mr. Burns’ sun-blocking device. Not very viable. The other, less exotic solution of dumping waste carbon dioxide in the ocean isn’t so hot either as oceanic ecology would be thrown into disarray.

He was forced to dip once more into history when discussing the now-famous Shell geologist Mar­ ion Hubbert. Half a century ago Hubbert predicted that the United States’ oil production would peak in 1970 and after that, America would cease to be a major world exporter. Scorned at the time, Hubbert’s prediction proved remarkably accurate.

In 1971 the Texas Railroad Commission, equivalent to today’s OPEC, lifted all quotas and went to maximum production as new American oil sources failed to be discovered. The important point is that the world won’t have an oil crisis when every drop of oil is drilled but instead when more oil is being delivered than is being discovered. The price of the now limited source of oil will be bid up and no longer be economically viable. This time when this happens is now called Hubbert’s Peak.

The doctor is quick to note, however, that the current jump in oil price doesn’t necessarily mean that the world Hubbert’s peak has occurred yet-oil is still half the price of bottled water and is one of the cheapest liquids available in America.

Nevertheless, the crisis is immi­ nent. Goodstein, backed up by the majority of the world’s experts, asserts that the global Hubbert’s peak will occur sometime in this decade even in the most optimis­tic forecasts. The evidence? First, Saudi officials have said that Saudi oil fields are starting to run dry and that the world must look elsewhere to quench her energy thirst.

Second, Iraq and Iran have lied about their oil production pow­ers for decades. The amount of oil they claim they have access to has remained constant for twenty years even though they continue to drain their fields without dis­covering new sources.

If the Middle East runs out of oil, the world runs out of oil—65% of all oil reserves are in the Mid­dle East, ten times that of Russia in second. Third, the world just spent $10 million to find $5 mil­lion in oil. Supply is starting to tap out.

Don’t alternate energy sources come to the rescue? Not the current ones, says Goodstein. Like buzzing freshmen, he swaps each away with a casual flick of the wrist. What about natural gas? No luck there either. Coal is dirty, poisonous and a far worse green­house polluter than oil. From the economic standpoint, liquid coal is five times less efficient than oil. Mining this much coal would deplete world reserves within a century and would at best buy us some time.

Even the renewable alter­native sources provide small solace. Hydroelectric power is currently responsible for 25% of the energy. But that isn’t any better. Every economically feasible river is already damned.

Wind power is only economic with large subsidies and requires huge farms even to produce inter­mediate electricity.

There is the possibility of utilizing concentrated solar power. But Goodstein remarks that this biofuel is really not going anywhere. The process is actually energy negative. Geothermal sites dry up to quickly. Fusion plants could replace oil but would consume uranium reserves in a decade or two.

There are always reasonable pho­tovoltaic cells, those large solar panels. But at current efficiencies of around 10%, half of California’s summer’s output can be killed by coverings with half-­sized skylights, may initially appear non­viable.

Do Korta, the undergradu­ate representative to the Arts Com­mittee, explains, “I hope that students will eventually understand that the exhibits, Korta hopes that the exhibits “become a topic of inter­est and conversation on campus.”

Lita Albuquerque is an artist known for her innovative installa­tions and sculptures. Many of Albuquerque’s works deal with the subject of the environment and the cos­mos. Albuquerque was born in Santa Monica and while many of her pieces are in California, she has won numerous international grants and art awards.

The artist in Residence program also begins this month. Catherine Jurca, Master’s of Fine Arts student, is organizing an opening recep­tion on October 19. Jurca notes, “I liked the idea of hosting the reception to make it possible not only for students to meet Michael McMillen and learn more about his work, but also for students who are interested in art to meet one another.”

Students will be invited to McMillen’s workshop, located in the sub­basement of Moore Hall. Last year’s workshops were full and many students are looking forward to this year’s events.

McMillen was chosen for the program by the Arts Committee. “We were contacted by Mr. McMillen and the Arts Committee was interested in the program of art education,” Jurca said.

The Arts Committee is responsible for organizing the program with help from McMillen and his assistants. The program will take place in the basement of Moore Hall and will include a reception for all McMillen’s artwork. The project will be open to all students and will take place over the course of weeks.

There will be a web­site with more information soon. Michael McMillen was chosen for the program by the Arts Committee. “We were contacted by Mr. McMillen and the Arts Committee was interested in the program of art education,” Jurca said.

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Sports: Volleyball Wins A SCIAC Game, Soccer Loses Close Match

By MIKE RUPP

The 5-8 Freshman from Houston, Texas had two tremendous performances for Caltech this past week, anchoring an improved Caltech defense. Pallett had an astonishing thirty-one saves in two matches, for an absurd 15.5 saves/match for the week.

 against Occidental College that held the Tigers to just two goals. Against Pomona-Pitzer, Pallett had 15 saves, holding the Sagehens to just two first half goals. For the season, Pallett has 66 saves in just 11 matches. He's already led Caltech to two victories this season, doubling the team's total winnings from last year.

For the season, Pallett has 86 saves in 11 matches.

Women's Volleyball wins first SCIAC game of the season; R. Streit leads offense

Caltech's Women's Volleyball team picked up its first win in a SCIAC game of the season this past Saturday, winning the second game of their match against the University of Redlands, 30-25, before losing the match, three games to one.

Sophomore Outside Hitter Rebecca Streit led the team with 10 kills and 10 digs. Freshman Setter Sarah Studham had 26 assists. It is the first win in a SCIAC game since the team took a point in the first set.

Earlier in the week, the team suffered sweeps at the hands of Whittier College of the SCIAC and visiting Benedictine University from Illinois.

For the week, Streit led the team in kills and in kill-percentage. She was second on the team in blocks and service aces, and third in digs. Senior Outside Hitter Kristen Zortman and Senior Middle Blocker Delia Davies were tied for second on the team in kills and first in blocks. Streit's twin sister, Outside Hitter Elizabeth Streit, led the team in service aces.

The team takes a break from its SCIAC Conference schedule this week, and will play Life Pacific College Tuesday night at the Braun Gym. The match begins at 7:30 PM.

Men's Soccer loses close match to Occidental; Pallett dominates

The Men's Soccer narrowly lost 2-0 to Occidental College on Wednesday, losing 2-0 despite some brilliant goalkeeping by Freshman Elliott Pallett, who had 17 saves against just those two goals.

Against Pomona-Pitzer, the team struggled. After holding the Sagehens to two goals in the first half, Pomona-Pitzer came roaring back in the second half with seven goals, leading to a 9-0 Caltech defeat. Pallett was again a bright spot for Caltech, however, with an amazing 15-saves performance. That kept the game close until midway through the second half.

The team's next match comes this Wednesday at home against La Verne.

Soft and Cuddly: The Way the Frosh Like It

The Freshman Rant

Athlete of the Week: Men's Soccer's Elliott Pallett

The 5-8 Freshman from Houston, Texas had two tremendous performances for Caltech this past week, anchoring an improved Caltech defense. Pallett had an astonishing thirty-one saves in two matches, for an absurd 15.5 saves/match for the week.

Some like it rough. Some choose to abstain. But most freshmen at Caltech like it soft and cuddly. Stuffed animals play a role in over 75 percent of these first-years' lives, and they're not ashamed of it.

"Stuffed animals are incredibly important to me and have been for all my life. When I was five, my parents stood in line for about six hours to give me a teddy bear when we barely even had enough food," explained a particular buddy.

When I was coming to Caltech, I accidently left two of my stuffed animals on the airplane. Luckily, my parents were able to pick them up at the airport when the plane returned to Chicago. "Although this particular frosh seemed to have a stronger attachment to his plush friends than Caltech students, his sentiments were echoed throughout the freshmen class; the stuffed animals provide a happy, familiar face in an otherwise strange world.

Still others wish to get more or larger stuffed animals to continue habits originally started at home. "I have a stuffed animal here, but I am thinking of getting a larger one. It's not quite large enough to sleep with," commented a Caltech girl. "I thought of trying to find a Caltech guy, but this way I don't have to deal with him or clean up after him.

All in all, 52 percent of all freshmen responded that they had stuffed animals and were content with their cuddly friends. 24 percent missed the stuffed animals they left home or definitely wanted more stuffed animals. The remaining 24 percent replied that they neither had nor wanted plush friends. One such student responded, "I left my stuffed animals at home, and I don't miss them. I still respect people who do have stuffed animals; they're just not for me."

The question of why young Techers need these animals is not new, but still very probably something to do with vanity and security. My new neighbors here at Tech find themselves in a world distinct from any they have seen before.

Having a semblance of home at Tech can also operate as a link to sanity and emotional stability. In a few cases, however, the motives behind the stuffed animals were slightly more sketchy. "Why do I have stuffed animals? To get girls of course!" grinned an apparently lonely frosh.

Whatever their reasons for having stuffed animals, just over 75 percent of freshmen either have or desire a stuffed animal. From every house the message is the same: soft and plushy is how the freshmen like it!
MAKING OUR CAMPUS DISEASE FREE: DISINFECTING THE NEW FRESH CLASS

BY TONY FALK

When you think of fresh, what is the first thing that comes to mind? Small! Annoying? People whose spirit has not yet been crushed by the great evil that is Tech? I've heard both. I think the one that doesn't come to mind is something that should: Disease-bearing germs. So I blame Tech. When I move into my freshman dorm, what was already being touted as an excellent animal for research by Caltech scientists, Ed Lewis performed experiments on Drosophila while I was a freshman in high school, and after taking a bachelor's degree in 1939 at the University of Minnesota, continued on to Caltech and then remained at the Institute for the rest of his life, save for four years in the U.S. Army during World War II, when he worked as a meteorologist. Lewis published several research papers while still a college student, and soon after the war was a recognized expert in the field of fly genetics. Returning to Caltech in 1946 as an instructor, he was named an assistant professor in 1948, earned tenure the following year, and became a professor of biology in 1956. He was the Thomas Hunt Morgan Professor of Biology in 1960 and retained the chair until his retirement from active faculty duties in 1988.

In a campus article appearing in 1957, Lewis described his success in causing the flies to mutate with four wings (they normally have two). “We now have a working model for understanding the control of development,” he said. His prognostication was indeed correct, and nearly four decades later the Nobel Committee, in awarding Lewis the Nobel Prize in physiology or medicine, cited his triumph in identifying and classifying “a small number of genes that are of key importance in determining the body plan and regulating body segments.” The Nobel Committee also lauded Lewis for his discovery of “how genes were arranged in the same order on chromosomes in the body segments they controlled.”

In the same article, Lewis discussed the gene's role in becoming an active geneticist at a revolution­ary time in biology. After the war, the gene was still treated as an abstract entity because the techniques needed to ascertain its molecular nature were yet to be developed, he explained. “You could begin to see how a gene is constructed, even though DNA hadn’t yet been determined to be the hereditary material. The laws of genetics had never depended upon knowing what the genes chemically were and would hold true even if they were made of green cheese.”

Although the modern techniques of molecular biology were yet to be developed, Lewis was never reticent about using novel methods to better understand the genetic mechanisms. He created his four-winged mutants by bombarding the flies with X-rays, and his work in discovering and explaining the role of homologous genes—that is, genes that are present in two copies—translated genes in a fertilized embryo separated by a head and a tail end, and how the eyes, legs, antennae, and other organs all form in their correct positions. These genes were “highly conserved,” as geneti­cists say, because the genes are similar in all organisms and play a role in the development of all animals, from fruit flies to mice to human beings. “Ed was the bridge between the Drosophila work—Morgan, and Sturtevant—to modern developmental biology,” said David Baltimore, president of Caltech and also a Nobel Prize-winning biologist. “Ed saw that even a lowly fruit fly could be a key understanding of the mysterious process of how a fertilized egg turns into a fully de­veloped organism.”

The problem, of course, is that Tech is one of the few places on earth where you have germs. Unfortunately this plan may not happen, as the school seems to be doing a great job of getting chopped up in the whirling blades of death (the Millikan pond is kind of a major source). I mean, I haven’t got sick from classes last year, and neither have any of my classmates, and I haven’t got sick from classes this year, and neither have any of my classmates. So get out and let’s make our campus disease-free. In particular, they want a confirmed commitment from the students for the campaign. This means everyone needs to take the bath between the houses of the South House renovations.

11. Kim also notes that the students from the South Houses will, in turn, be vectored into modular units during the renovations. 20 modular units will be ordered, including two for RAs and two for lounges. These modular units will be placed on the field north of Avery, where the northeast of Avery, and the areas will be fenced in with card swipe access. Students will also be added to current housing in, De, Mar, and Braun.


14. The ASCIT officers are linking test clubs are out! You should email Kelly Lin at kelly4720@caltech.edu with the name of your club, and mail­box code in order to receive your club’s check.

Meeting adjourned 1:05 PM.

ASCIT Minutes: Budget Surplus, Modular Housing

BY CORINNA ZYGOURAKIS

Budget

The ASCIT will be held at 2 p.m. on Monday, October 4th, in order to honor the California Institute of Technology biologist Edward Lewis, winner of the 2007 Nobel Prize in Physiology or Medicine, for his work on how genes regulate the development of specific regions of the body. Lewis, 86, died July 21 after a long battle with cancer.

A member of the Caltech fac­ulty from 1946 until his death, Lewis spent his life working on the genetics of the fruit fly, with special attention to the fundamen­tal ways in which the genes relate to embryonic development. The work had profound implications for a basic understanding of the genetic regulation of development in humans.

In a book published on Lewis earlier this year, his long­time collaborator Howard Lipshitz wrote that Lewis’s scientific reputation rests on his pioneering experimental genetics as conduct­ed in the first half of the 20th cen­tury. Such genetics approaches revolu­tionized human genetics, and the genes that were discovered in those early studies are still relevant today.

Lewis spent his life working on the field of fly genetics. Returning to Caltech in 1946 as an instructor, he was named an assistant professor in 1948, earned tenure the following year, and became a professor of biology in 1956. He was the Thomas Hunt Morgan Professor of Biology in 1960 and retained the chair until his retirement from active faculty duties in 1988.

In a campus article appearing in 1957, Lewis described his success in causing the flies to mutate with four wings (they normally have two). “We now have a working model for understanding the control of development,” he said. His prognostication was indeed correct, and nearly four decades later the Nobel Committee, in awarding Lewis the Nobel Prize in physiology or medicine, cited his triumph in identifying and classifying “a small number of genes that are of key importance in determining the body plan and regulating body segments.” The Nobel Committee also lauded Lewis for his discovery of “how
Exaggerated Threats of Disenfranchisement

By SIMON QUE

In recent months, groups and leaders within the Democratic Party have been active in preparations for the upcoming election. Their fear is that African American voters will be unable to vote or that their votes will not be counted, and are taking steps to avoid further incidents of “disenfranchisement.” While their efforts to ensure a properly conducted election are certainly commendable, their focus is fundamentally flawed.

According to the news source Agence France-Presse, Donna Brazile of the Democratic National Committee Voting Rights Institute has said, “We will protect voters and make sure they are not discouraged at the last minute or disenfranchised because they are not educated on their rights... We need to ensure every citizen he will be able to participate and ensure their ballots will be counted.”

Meanwhile, the website Moving Ideas (www.movingideas.org) has pointed out that many voters are ignorant of the rules surrounding the election, and that such ignorance would negatively impact the choices they make. The U.S. Commission on Civil Rights gives such examples in its report on the 2000 Florida election, which lists various voter mistakes such as selecting multiple candidates, marking wrong candidate on the confusing “butterfly ballots.”

In short, many of these concerns are around whether voters are familiar with how the system works. Yet the system is still not that complicated. How hard is it to follow that little arrow to the correct circle? All it takes for a voter to vote correctly is to be careful and to read up on the mechanisms of the election before going to the polls. That’s really not too much to expect, and far less than what could be considered actual “disenfranchise-ment.”

Other concerns surround intimidation and coercion. A manual published by the Democratic National Committee aims to help voters deal with such threats. DNC sources have reported said, “We all know the Republicans are going to try to steal the election by scaring people and confusing people.” The manual tells local Democrats to publish literature to denounce “tactics that discourage people from voting;” “place stories in which minority leaders express concern about the threat of intimidation tactics,” and “warn local newspapers not to accept advertising that...contains false warnings about voting requirements and/or about what happens at the polls.”

This advice in itself is reasonable and has the possibility of doing voters a favor. However, it is also highly condescending. It seems to imply that voters are helplessly manipulated by indiv­iduals and organizations with malicious intent, and are unable to defend themselves. Dis­couragement from voting? That’s not a sufficient criterion for disenfranchise-ment; a night of sleeplessness would do as much to discourage people from going to the polls. Voters are free to choose to fight against or ignore such obstacles.

But while the manual tells local Democrats to do something for the people, it doesn’t seem to give actual advice to voters. Here’s some simple advice they could give: arm yourselves with the truth against lies and get some buddies to go with you. How hard is that?

While these organizers demand a better voting system, they fail to vocally address the issue of how the police harass registered voters. They have been busy, in the face of discouraging acts, focusing on discouraging circumstances, and how to increase efficiency in processing millions of registration forms and ballots and not of malicious intent, no more ill willed than a night of insomnia.

To be clear, there most likely have been many instances of actual intents to dis-qualify votes, such as an incident in Nevada in which hundreds of registration forms filled out by people belonging to registered Demo­crats were allegedly torn up and thrown away by frivolous voter registration company. In a high-stakes election like this one, it is almost guaran­teed that some will manipulate the system to exploit others for their own gain, such as by spreading lies and threats. So the Democrats are right in bringing this issue to attention.

However, they neglect bigger concerns. The alleged mischief is still the mischief of a private group that can only influence the election; the county commis­sioner in Nevada can always kick it out of the election business and take steps to set things straight again. But it is the government of­icials in power who actually control how elections are conducted. They are the ones who can abuse their power by toying with ballots and then covering up their acts of wrongdoing, such as by silencing witnesses through extortion.

They can send the police to harass voters under the pretense of in­vestigating voter fraud. They are also the ones who enact and enforce laws that restrict voters and candidates. People who are con­cerned about real voter disenfran­chisement should keep a closer eye on those in power rather than on discouraging circumstances, voter ignorance, or members of an opposing party.

DNC Chair Terry McAuliffe launched the party’s Vote First Initiative on May 1 in front of the U.S. Supreme Court.

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This Stinker Deserves to be Forgotten

By HARRISON STEIN

This, my friends, is a really bad movie. The surprise ending has become a staple in modern filmmaking as each year, a film such as The Usual Suspects, The Others or Identity breezes along and blows the audience away with an intelligent twist that enhances an otherwise decent movie. Unfortunately, society's obsession with these endings has led to a never-ending string of awful movies that try too hard to be clever, and September 2004 brought two such duds. Wick Park could have been a poignant psychological thriller, but in the end it was undone by endless plot twists. Meanwhile, desperate to become Sixth Sense, a film defined by its clever, challenging and groundbreaking surprise ending, The Forgotten falls flat on its face.

Like most modern movies, Joseph Ruben's The forgotten has an interesting premise and this should have yielded an interesting movie. Unfortunately, somewhere between point A and point B, the Julianne Moore vehicle falls off a cliff and makes no effort to climb back up. The first sixty minutes of exposition are rarely provocative, the deus ex machina ending is both pre­ sented unsatisfying. The deus ex machina whose daughter has become a staple in modern movies. The acting is hardly superb, but because there are no revealing plot twists, but because there are no revealing plot twists, that chill you for a split second, but leave no lasting impression. It's hard to discuss the story without revealing important plot points, but because there are no revealing plot twists, that chill you for a split second, but leave no lasting impression. It's hard to discuss the story without revealing important plot points, but because there are no revealing plot twists, but because there are no revealing plot twists, but because there are no revealing plot twists. Julianne Moore plays desolate, aged Telly whose nine-year-old son disappear, she begins to suspect that someone is trying to take great pleasure in teasing her. She is an interesting premise and this

Once photos and videos of her late son disappear, she begins to suspect that someone is trying to take great pleasure in teasing her. She is an interesting premise and this

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Once photos and videos of her late son disappear, she begins to suspect that someone is trying to take great pleasure in teasing her. She is an interesting premise and this
by kevin bartz

unpacking their differences on issues ranging from education to immigration policy, incumbent Democratic Assemblywoman Carol Liu squared off with Republican challenger Lynn Gabriel last Wednesday in a crowded lunchtime debate at Pasadena City College, headlining an Assembly race targeted by both parties as one of the state’s most competitive.

Though the debate had no structure, the candidates addressed issues, which came from a PCC faculty member, the school’s Democratic student organization and members of the audience, focused intensely on pitting performance and rising fees in the state’s community college system. Debate centered on Assemblywoman Liu as she seeks a third term.

the candidates also emphasized their differences on California’s well-known three-strikes law, a hot-button issue again raised to prominence by Prop. 66. As a November ballot initiative that would limit three-strikes sentences to offenders whose first strike comes from a list of “violent” crimes pre-scribed by the measure. Though she said she has not yet decided on Prop. 66, Liu cautioned against giving criminals life sentences for “stealing a slice of pizza.” Gabriel came out against a initiative, maintaining that she’s “not in favor of reducing the three-strikes law in any way, shape or form.”

responding to a question on the DREAM Act, pending Congressional bill that would allow qualified illegal immigrants to stay in the country and work here.

Campaigning in the heavily populated San Gabriel Valley, Liu emphasized her qualifications as a lawyer. Gabriel stressed her administrative skills.

Liu emphasized her accomplishments, while Gabriel challenged her commitment. “I come from a background of many skills,” held Liu. “I’ve learned education through many years at the grassroots level.” But Gabriel called Liu “out of step. She has demonstrated time and time again that she will vote with her friends instead of you.”

With both candidates speaking in a dry, rather formal style, the reaction was varied to Wednesday’s debate. Democratic Assemblywoman Cheryl Conlin called the debate “very infor-mative,” and said she thought Gabriel had emerged as the victor, though she will vote for Liu. But Eli Sizlewitz, the head of PCC’s Democratic student group, named Liu the victor. A two-term Assemblywoman and former chair of the campaign, Liu is up for her third Assembly term, while Gabriel is running for a first-time politician and 30-year Pasadena resident.

Pasadena is indeed the center of gravity in California’s 44th Assembly District, a roughly triangular region along the east side of the San Gabriel foothills, running from La Canada in the north to Eagle Rock in the west all the way to Arcadia and Duarte in the east.

Democratic support in the 44th lies historically in the working-class communities in La Canada-Flintridge and Altadena, while precincts in Pasadena and South Pasadena are more inclined to pull the lever for Republicans. That tendency was underscored in last March’s primary, when Gabriel, a Pasa-denca PCC professor, eked out a 1,900-vote win over Dave Wilcox, a Caltech-educated aero-nautical engineer doctorate turned business owner.

But at last Wednesday’s debate, both candidates vied for the title of hometown favor-ite. Gabriel is a PCC graduate, while Liu served as president of the PCC Foundation Board in 1984. “I have a real, very strong feeling for the importance of the community college system,” said Gabriel. “PCC prepared me to go to toe with my class-mates. I got a great education here.”

Liu too emphasized her connection with educators over her 20 years in La Canada Flintridge. “I come from a background of many skills,” said Liu. “I’ve learned education through many years at the grassroots level and I would bring that knowledge to another term in the Assembly.”

of the wireless network and setting the goal of breaking the gigabyte per second transmission rate. In order to accomplish this, they needed to transmit a more intense, focused signal.

“We needed a laser pointer, not a light bulb,” said Hajimiri, explaining that the radar system used at the moment transmits a signal in all directions, much like the light bulb. However, this is inefficient and a higher transmis-sion rate would require a more efficient signal.

The radar system which Hajimiri and his group integrated onto the silicon chip differs from the classical radar system in many ways. Hajimiri’s radar system is structured differently and is integrated onto a chip, while the classical radar system is not inte-grated. Furthermore, The new ra-dar system generates multiple local oscillator frequencies, which are stronger than the frequencies used by the classical system.

At this moment, Hajimiri is designing the next generation ra-dar chip. He intends to improve this new chip by including the functions of the PCC student group, having all the functions be integrated so the chip would operate closer to the funda-mental limit. The award has gained a prestigious reputation. The decision as to who would go to is decided by a panel of judges from various schools and industries.

In addition to being placed on the TR 100, Hajimiri was also of-fered a Fellowship of the Okawa Foundation.

However, he does not intend to commercialize it himself. “I wouldn’t be interested in quitting my job here and going to run a company,” said Hajimiri, though he did not reject the idea of hav-ing a remote role in the company. Hajimiri also did research on power amplifiers on silicon, which led to the founding of a new company called Axion Mi-croDevices. Headed by former students of Hajimiri and Electrical Engineering Professor Dave Rufledge, the technology is being used for wireless.

As for winning the award, Hajimiri acknowledges the effort of his team of graduate students. “I feel honored and I appreciate it very much. It is a very fulfilling experience. All my former and current graduate students share the award. This is like a point of culmination of all the effort of the past years,” said Hajimiri.

The TR 100 is printed in the “Technology Review,” which is Massachusetts Institute of Tech-nology’s magazine of innova-tions. In its fifth year now, the award has gained a prestigious reputation. The decision as to whom the award would go to is decided by a panel of judges from various schools and industries. In addition to being placed on the TR 100, Hajimiri was also of-fered a Fellowship of the Okawa Foundation.

“Spending last summer at Infosys… put me at the center of the most significant paradigm shift in the world economy – true globalization. Working with the outsourcing industry’s pioneers, provided invaluable experience developing and honing business strategies in extremely complex environments. While some of my classmates spent their summer hypothesizing about globalization’s implications in conference rooms, I was helping actualize its full potential on the ground in Bangalore.”

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Infosys (NASDAQ: INFY) is a world leader in consulting and information technology services. Infosys offers complete end-to-end business solutions and strategic sourcing designed to increase its clients’ competitiveness.

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An evening of cuisine, comedy and culture greeted the Caltech community at the Moon Festival party in Winnett Lounge on Saturday, October 9. Planned and hosted by the Caltech Chinese Student Association, the evening featured the Caltech community's first ever CICF, a medical care program in partnership with St. Luke’s Hospital.

The event celebrated one of the most significant traditional Chinese holidays. Sometimes known as the Mid-Autumn Festival, the Moon Festival is on August 15 of the Chinese lunar calendar. According to graduate student and former CSCC member Changleang Pang, the moon is the round at this time of year and its shape symbolizes unity and family. For the Chinese community on campus, the Festival is a time for students to think of their families as well as friends and the Chinese community in general.

The party began with an ample Chinese buffet, complete with mooncakes, the essential ingredient of any Moon Festival celebration. A traditional Chinese dessert, the sweet and delicious mooncake, is shaped like the moon in shape and contain a sweet filling such as red bean or lotus seed paste. As a testament to their popularity and taste, the mooncakes soon disappeared from the buffet table.

After dinner, the entertainment commenced as MCS Fei Wang and Xiaoie Zheng announced each event and shared a dialogue. The hilarity continued as Changleang Pang and Mo Li performed a humorous skit, putting a new spin on an ancient Chinese lore. Mr. Pang, playing the legendary Lady From the Moon with enthusiasm, surprised Mr. Li’s character as he waited for the beautiful lady at the airport.

Although the dialogue was in Chinese, the strong visual cues, including a song and dance from Mr. Pang and dialogue with the lady, made sure that the laughs coming even from audience members who did not speak the language.

In addition to providing fun and games, the Caltech-C also invited students new to the Caltech Chinese community to introduce themselves to other students. With the encouragement and assurance of the audience, 22 new students joined in the dance. With the music starts playing, the students from China spoke about themselves and were welcomed to the community. A balloon-popping race and ice cream eating contest followed, with everyone being welcomed into the community. A balloon-popping race and ice cream eating contest followed, with everyone being welcomed into the community.

A variety of distinct performances followed, showcasing the talents of the actors and artists while providing something for every taste in the audience. In colorful costume, Yichun Sun from UC Irvine and Qian Wu from USC performed the dance “House of Flying Daggers.” Comedy was again the focus of a dialogue between Xiaoke Zheng and Ling Zheng, as they recounted an unusual game of “Mahjong” while exchanging allusions to Chinese literature, culture and occasionally Newton’s laws of motion.

A mellower mood descended as Caltech-C members performed “Moonlight Sonata” with Winnett Lounge with music. According to Dia Yuan, Yang Qian and Xiaoxiao, the selection of songs were traditional and romantic, meant to invoke familiarity.

Later, audience members joined in the fun as Miss-Shri Lint taught them the game “Catch me if you can.” In the game, each person chooses two or three fingers of the person seated next to him on Lin’s cue. The simple task proved more difficult than it looked, often with hilarious results.

Laughter was also the name of the game during the final skit, a parody of the Chinese blockbuster “House of Flying Daggers.” A large cast of students came together in the elaborate send-up of the film, which was later shown at Moore Hall. The farcical tale of the “danger” that followed was followed by two Chinese dams and the party finally concluded when Xiaoke Zheng was “thrown into jail” and his fellow MCS Fei Wang went off to “bail him out.”

Undergraduate Wei Li, who was among the new students welcomed at the party, played the narrator in the skit. While he rehearsed the act five times in the past two weeks, Li found it a fun experience. “It was not hard work because we enjoyed the work,” he said.

Fei Wang, also an actor in the skit, found her work rewarding as well. Every person involved in planning the party put in immense effort, he said and the script of the skit was changed and improved multiple times during rehearsal. The most valuable part of the experience, Wang said, was that several students became very good friends when they didn’t know each other before.

Audience members were also impressed with the sense of friendliness and community reflected at the party. “I’m surprised that there is such a huge community,” said undergraduate student John Shen. “There are families here, [undergraduate] students, grad students; everyone from Caltech is here. And the food is good too,” he added as he enjoyed a mooncake.