In the COE blogosphere

The promise of synthetic biology: The quest of two research teams. The tension of international competition.

It’s all there in the college’s first blog, penned by members of this year’s Berkeley iGEM team who wrote about preparing their research for the International Genetically Engineered Machine (iGEM) competition, held at MIT in November. The interdisciplinary team included BioE students Madhvi Venkatesh, Nade Sritanyaratana, Anu Lau, Jin Huh, Christie Brown and Molly Allen. Read about their adventures and successes at http://blogs.coe.berkeley.edu.

The college is looking for new bloggers. Are you interested in sharing your engineering experiences with others? E-mail Susanna Spiro at susanna@coe.berkeley.edu.


technoFile: T-Mobile G1

ECE sophomore reviews Google’s push into smart phones

In September, Google entered the mobile market, debuting its new, Linux-based operating system, Android, for phones. The T-Mobile G1, the first handset to support this technology, fires a shot across the bow at Apple’s iPhone, which has dominated the mobile market for more than a year. Does the G1 measure up? Available at T-Mobile locations for $179 with service contract.

On day one, I bought the G1 to see what it could offer this techie, and it has been more than a satisfying purchase. The handset, built by HTC, is a solid system. With a slide-out QWERTY keyboard, a BlackBerry-style trackball, dedicated camera and phone buttons, not to mention its top-notch 480 x 320-pixel touchscreen, it’s a benchmark by which all smartphones should be built. The built-in GPS and accelerometer aid location services and viewing, and the 3.2-megapixel camera is a welcome addition in these days of shoddy “camera” phones.

Furthermore, having 3G data support and Wi-Fi means you’re always connected, whether for news, friends or maps. My one hardware complaint is poor battery life; as a heavy Web user, I barely make it through a 14-hour day on a single charge.

Most notable, however, is what’s inside—Android. Built on Linux, the entire system is open source and built for developer modifications and improvements, a polar opposite to Apple’s offerings. For the user, this means that there will be more programs and faster improvements, and there’s no bulky “charge.

Unfortunately, like most Google products, Android is still in heavy development. Though I personally find it usable, it is not as responsive as the iPhone nor as supportive of many capabilities. For example, there exists no universally supported foreign text input or ability to read PDF documents. It will be only a matter of time until these temporary problems are solved by developers.

Android scores points for supporting applications that Apple doesn’t. The iPhone blocks the ability to run daemons, back-

Real-life lessons in native design

What started as a six-week project for fresh-

men engineering students may create culturally sensitive and energy efficient housing for a small tribe of California Indians.

A roundhouse-style design conceived in last spring’s E10 Engineering Design and Analysis course has been embraced by members of the Pinoleville Pomo Nation. The tribe plans to submit the UC Berkeley concept when it applies for federal funding to build up to 25 new homes in the community of Ukiah.

“There’s an acute need for housing here,” says David Edmunds, environmental director for the tribe, which has about 500 members scattered throughout Northern California. “This is considered a linchpin for a lot of things the tribe wants to accomplish.”

The concept, still a balsa wood model, is the product of ongoing discussions between the stu-

Continued on page 2
Real-life lessons

Continued from page 1

dents and tribal representatives. It features a rounded structure containing a large communal kitchen and living room to accommodate extended families and tribal gatherings. Five small attached units can be used for bedrooms and storage. The dwelling has a living roof and plenty of natural lighting.

The collaboration got its start earlier this year when Edmunds and tribal representa- tive Linda Noel approached a Native Amer- ican student group at UC Berkeley for help in developing new homes. Their request found its way to ME professor Alice Agogino, who teaches an E10 module on human-centered design. E10 students, supervised by Agogino and graduate student instructor Ryan Shelby, eagerly accepted the challenge. In April, they made the 200-mile trip to Ukiah to meet with the Pinoleville Pomo group. During a daylong workshop with 20 tribe members, the students asked about the community’s needs and solicited input on concepts. Several tribal representatives later vis- ited Berkeley to help evaluate the resulting student designs.

“It resembles our traditional roundhouse,” says tribe vice chair Angela James, adding that she and others appreciate the students’ collaborative and green approach. The tribe wants to build centralized housing in hopes of uniting the Pinoleville Pomo and letting members take advantage of job training and other services. “It would strengthen our community, not only economically, but tra-ditionally,” James says.

Seven UC Berkeley undergraduate and graduate students continue to work on the project. Sponsoring the overall effort is a student-run community outreach program called CARES (Community Assessment of Renewable Energy and Sustainability).

“It’s a real-world project the students can actually own,” says Shelby, an ME Ph.D. student and co-founder of CARES. “This is going to directly impact the lives of people.” Shelby is also incorporating the project into his doctoral research on sustainability and native cultures.

“It’s a really fulfilling thing to do,” says ME sophomore Che (Tommy) Liu. “You feel like you’re helping people who need the help, deserve the help. I wanted to see it through.”

—Written by Abby Cohn and first featured in Innovations, the college’s online research jour- nal. http://innovations.coe.berkeley.edu/

THE COEFFICIENT: PEOPLE INSTRUMENTAL TO COLLEGE LIFE

Dennis K. Lieu

Title: Associate Dean of Student Affairs

Call him: Dean Lieu
His job: Responsible for the welfare of undergraduate students, from class- es and advising to living and health;

Oversees undergraduate recruiting and retention.

His goal: “I know students perceive our office as having a police func- tion, that we’re there to check up on them academically. I want to change that so students think of our office as student-friendly and look forward to coming here because we cater to their needs.”

San Francisco native: Lieu grew up in the Mission District and graduated from Lowell High School. His father owned a grocery store and his mother worked as a maid in a hotel.


What you might know: He holds a fourth-degree black belt in taekwondo (competitors nicknamed him “Doctor Doom”) and is faculty adviser for the Cal Archery Club.

What you didn’t know: He’s known to practice moonwalking in front of the mirror.

Favorite martial arts movie: “I don’t watch many because they’re so bad and unrealistic.”

Has a weakness for: Chocolate-covered donuts

Last word: “Grades are not everything. The knowledge that you acquire here is the thing that matters.”

Call for entrants

The Global Social Venture Competition seeks teams to enter its 2009 competition. Organizations are looking for entrants with a financially sustainable venture that addresses a social or environ- mental problem. Executive summaries are due JANUARY 21. For details, go to www.gsvc.org.

Introduction to Embedded Systems

EECS 149 Introduction to Embedded Systems is a new, project-based, capstone design course for advanced undergraduates that will be offered spring semester. Students will have the opportunity to hack robot platforms and devices such as the Nintendo Wii, inter- face sensors and actuators and extend systems for wireless control. Students will work in teams toward an innovative final project that satisfies the EECS design requirement. For details and prereq- usites, visit http://choo.eecs.berkeley.edu/ee cs149/sp09.

Career Center in your inbox

Sign up for Engineering CareerMail through Callisto and receive:

• Those clever EECS students have built some cool robots for EECS 149 Introduction to Robotics. See demos on THURSDAY, DECEMBER 11, from 2 to 4 p.m. in 290 Hearst Memorial Mining Building.

• Forage for free nourishment at the “Feed the Bears” study break, hosted by Berkeley Engineering Alumni Relations (IIE). Join them on TUESDAY, DECEMBER 9, from 3:30 to 7 p.m. in front of Kresge Library outside Bechtel Engineer Center for snacks and drinks.

• Be a polar bear for a day by watching “Twilight,” the new vampire romance movie. Consult Google Movies for this week’s locations and times.

• Take a walk to Live Oak Park for a respite along its creek. Head west on Hearst Avenue, turn north onto Walnut Street, the chain’s original store.

Need a study break? Here are a few ideas

• Watch a robot, built by an ME student team, solve a Rubik’s cube faster than the human recordholder. www.youtube.com/ watch?v=N7BksZZyAdc

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• Find fresh air and perspective at the top of the Campanile. The ride is free with your student ID. Open Monday through Friday from 10 a.m. to 4 p.m., Saturday 10 a.m. to 5 p.m. and Sunday 10 a.m. to 1:30 p.m. and 3 p.m. to 5 p.m.

• Satisfy your late night cravings with an order of cheese sticks from West Coast Pizza at 1706 University Avenue. They deliver until 2 a.m. on weekends. Phone 510.841.WEST.

Thanks for your input

We appreciate the efforts of everyone who shared their feedback with us this fall in the Engineering News Survey. We hope to imple- ment your ideas and suggestions in the coming months. We’ll announce the raffle winner of the $100 Best Buy Gift Card in an upcoming issue as this is the last fall issue. Engineering News will resume publication on January 13. Good luck on your finals and enjoy your Winter Break!

Answer to last issue’s sudoku

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Real-life lessons

Continued from page 1

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PHOTO COURTESY OF BERKELEY IGEM TEAM

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Unfortunately, like most Google products, Android is still in heavy development. Though I personally find it usable, it is not as responsive as the iPhone nor as supportive of many capabilities. For example, there exists no universally supported foreign text input or ability to ground programs that monitor the phone and react accordingly. One excellent example of such daemon usefulness is the app which, based on time or location of the phone, changes the call and networking settings, meaning a phone never goes off in class again.

BOTTOM LINE: G1 and Android compete well with the iPhone, and in this techie's eyes, win. Apple has kept the "cool" factor firmly in its control since release of the iPod. But if you want to see what happens when Google controls the cool, I recommend jumping on the T-Mobile G1 soon.

—Written by Daniel Duckworth

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