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## Berkeley in the News

A daily selection of stories about UC Berkeley and higher education that have appeared in the local and national media.

Tuesday, 22 July 2008

### 1. **Observatory: Enough Atoms for a Cannonball? Or Just a Small Splash?**

[New York Times](#) (\*requires registration)

By Henry Fountain

July 22, 2008

Say you've got a few atoms of gold or another element and you want to weigh them (or, as a scientist would put it, determine their mass). There's no scale in the world sensitive enough to do the job, but you could use a mass spectrometer. That involves stripping electrons off the atoms and sending the resulting ions through a magnetic field.

PHYSICISTS AT THE UNIVERSITY OF CALIFORNIA, BERKELEY, have come up with what may well be a better way. They have developed a nanomechanical sensor — a cantilevered carbon nanotube that sways like a diving board. And just as a diving board is affected by the weight of the diver, the nanotube's vibrations change when gold or other atoms are stuck to it. By measuring the changes, researchers can calculate the mass of a single atom.

The key to the sensor's sensitivity is its extremely small size, said KENNY JENSEN, A DOCTORAL STUDENT who describes the device in a paper in *Nature Nanotechnology*. (His co-authors are ALEX ZETTL, DIRECTOR OF THE UNIVERSITY'S CENTER OF INTEGRATED NANOMECHANICAL SYSTEMS, and [GRADUATE STUDENT] KWANPYO KIM.) The nanotube is only about a billionth of a meter in diameter and 200 billionths of a meter long. "It's the ideal material," Mr. Jensen said...

Dr. Zettl said sensors like this had been the subject of much research. "The holy grail has been can you get down to the molecular or even atomic level, and, in your wildest dreams, can you do it at room temperature," he said. His lab's device accomplishes this and, once it is fully developed, may be particularly useful for measuring large molecules like proteins, which don't fare well in mass spectrometry.

[Another story on this topic appeared in [Chemistry World](#)]

[Full Story](#)

### 2. **Native Carnivores Being Scared Away From Parks**

[Red Orbit](#)

July 22, 2008

Even a quiet stroll in the park can dramatically change natural ecosystems,

according to a new study by CONSERVATION BIOLOGISTS FROM THE UNIVERSITY OF CALIFORNIA, BERKELEY. These findings could have important implications for land management policies.

The study compared parks in the San Francisco Bay Area that allow only quiet recreation such as hiking or dog walking with nearby nature reserves that allow no public access. Evidence of some native carnivore populations - coyote and bobcat - was more than five times lower in parks that allow public access than in neighboring reserves where humans don't tread, the researchers report....

"Carnivores are sensitive indicators of human disturbance," said SARAH REED, POSTDOCTORAL SCHOLAR IN UC BERKELEY'S DEPARTMENT OF ENVIRONMENTAL SCIENCE, POLICY AND MANAGEMENT and the study's lead author. "Their presence or absence can be a good, early clue to how the ecosystem is doing."...

ADINA MERENLENDER, COOPERATIVE EXTENSION SPECIALIST IN THE DEPARTMENT OF ENVIRONMENTAL SCIENCE, POLICY AND MANAGEMENT and senior author on the study, said the findings "are probably the most surprising results that have come out of my lab to date."...

[Full Story](#)

### 3. Where Research and Tourism Collide

[New York Times](#) (\*requires registration)

By Michelle Nijhuis

July 22, 2008

Gothic, Colo. — When Michael Soulé researched butterflies in this mountain valley in the early 1960s, the nearby town of Crested Butte was little more than a busted coal-mining settlement. "You couldn't even buy a mug or a T-shirt," said Dr. Soulé, now a conservation biologist.

Crested Butte, reborn as a skiing and mountain-biking mecca, today has rows of boutique shops and easy mountain access. At the Rocky Mountain Biological Laboratory, where Dr. Soulé and generations of other researchers have studied remote alpine habitats, growth is changing both the landscape and the data they collect. The lab, like many other long-running ecological research sites, is trying to decide whether to study such changes or fight them....

Laboratory researchers, for the most part, are loath to become students of disturbance. "We could document the destruction of this valley, but for scientists, that's kind of a trivial, boring problem," said JOHN HARTE OF THE UNIVERSITY OF CALIFORNIA, BERKELEY, who has studied the ecological effects of warming temperatures near the laboratory for the past 18 years. "What's good science is to be able to study the behavior of plants and animals, and their interactions with the climate and everything else, over a long period of time."...

[Full Story](#)

### 4. Students invent affordable water heater

[KGO TV](#)

By Terry McSweeney

July 22, 2008

A group of UC BERKELEY STUDENTS will be competing in a national

inventor's competition this fall with their ultra-affordable solar water heater - even if they lose, they may have already won. Their invention may end up improving the lives of millions of people all over the third world.

A mechanical engineering dream team came up with this third world wonder - in response from a challenge from their PROFESSOR; ASHOK GADGIL said build an advanced, affordable solar water heater.

"We need a design that's appropriate for their climate and their economic conditions and the amount of hot water they use, which is much less than the amount of hot water we use," said Gadgil...

"A lot of people who were interested in this product were interested primarily in the fact that it helped the environment," said ADAM LANGTON, GOLDMAN SCHOOL OF PUBLIC POLICY....

"How are we going to retain that heat overnight given the variability of the weather of the rainy season versus the dry season," said SARA BEAINI, PH.D. STUDENT, ENGINEERING.

The students have also located groups interested in mass producing the water heaters locally, meaning much needed jobs. Who knows where this might be headed.

"We might migrate to other countries and open up - so it's very interesting," said Merwan BENHABIB, PH.D. STUDENT, ENGINEERING....

"Working with so many different people we've been able to be exposed to so many things, that we otherwise would not have been able to be exposed to like if we were in other settings," said KENNETH ARMIJO, PH.D. STUDENT, ENGINEERING....

[Link to video]

[Full Story](#)

##### **5. Member Exchange: NASA center in Ohio eyes moon**

[Columbus Dispatch](#)

By Kevin Mayhood, The Columbus Dispatch

July 22, 2008

Before NASA astronauts rocket to Mars, they're supposed to return to the moon in a sweet new ride to test-drive everything from high-tech maps and buggies to new spacesuits and next-generation power sources.

"We're going to use the moon as a proving ground to go on to Mars and other destinations," said Stephen N. Simons, associate director of Lunar Systems at NASA Glenn Research Center, which is working on a host of projects with scientists from universities in Ohio and across the country....

Rongxing Li, who runs the Mapping and GIS Lab at Ohio State University and is plotting the routes the twin Mars rovers travel, will integrate the pictures and topography to create 3-D maps that NASA will use to choose landing and exploration sites.

Li also is working with a team from Glenn, Massachusetts Institute of Technology and the UNIVERSITY OF CALIFORNIA AT BERKELEY on developing positioning and mapping technology to help astronauts avoid getting disoriented....

[Full Story](#)

## 6. Holy man, secular plan: clean up the River Ganges

**Veer Bhadra Mishra, a Hindu priest and former professor of hydraulics, has gained government approval for a pilot program.**

[Christian Science Monitor](#)

By Mian Ridge, Correspondent of The Christian Science Monitor

July 22, 2008

Varanasi, India - Most mornings, as the sun steals over the Ganges, Veer Bhadra Mishra takes a dip in India's holiest river....

Mr. Mishra has used both in a 20-year river cleanup campaign now coming to fruition. With his spiritual clout in a country that's more than 80 percent Hindu and his scientific expertise, Mishra has won government approval for a pilot sewage-treatment program....

More than a decade ago, with SCIENTISTS FROM THE UNIVERSITY OF CALIFORNIA IN BERKELEY, Mishra developed what many environmental experts attest is a cheap, sustainable system for diverting the city's sewage away from the river, and cleaning it....

India's government, however, has been aware of the problem for some time. Twenty years ago, it launched the Ganga Action Plan (GAP), a multimillion-dollar scheme intended to clean up the river by means of wastewater treatment plants....

Most seriously, the GAP system is designed to remove solid waste but not microorganisms. Mishra's scheme is different. His adaptation of an "advanced integrated wastewater pond system" (AIWPS) developed by PROF. WILLIAM OSWALD AT BERKELEY and in operation in parts of California, is, experts say, suitable for a tropical climate like India's....

An independent assessment found the plan was cheaper and more effective than the existing scheme. He hopes that his pilot project may one day become a model for other Indian towns and cities. But his inspiration remains the Ganges....

[Full Story](#)

## 7. STM spectroscopy of graphene flakes yields new surprises

[Small Times](#)

July 22, 2008

Scientists at the U.S. Department of Energy's Lawrence Berkeley National Laboratory and the UNIVERSITY OF CALIFORNIA AT BERKELEY have performed the first scanning tunneling spectroscopy of graphene flakes equipped with a "gate" electrode. The result is the latest in a series of surprising insights into the electronic behavior of this unique, two-dimensional crystal form of carbon: an unexpected gap-like feature in the energy spectrum of electrons tunneling into graphene's single layer of atoms.

MICHAEL CROMMIE, a faculty scientist in Berkeley Lab's Materials Sciences Division and a PROFESSOR IN THE DEPARTMENT OF PHYSICS AT UC BERKELEY, explains that this peculiar feature of the electronic structure of graphene arises from the interaction of the tunneling electrons with phonons, the quantized vibrations of the 2-D graphene crystal, and may lead to novel applications for future graphene nanodevices. team led by YUANBO ZHANG, A POSTDOCTORAL FELLOW in Crommie's research group,

discovered graphene's mysterious energy gap; the research appears in advanced online publication on the Nature Physics website.

..."Graphene's interesting electronic effects opens a new realm of basic science. It's an entirely new material, with new physics that could lead to new practical devices and applications. In that respect it's as promising as carbon nanotubes -- but graphene's planar geometry is potentially even more versatile." ...

[Full Story](#)

## 8. Voyages Through the Heliosphere

[Nature Online](#)

July 3, 2008

[This story about the Voyager Mission's explorations of space includes interviews with RESEARCHERS JANET LUHMANN and LINGHUA LANG OF UC BERKELEY'S SPACE SCIENCES LABORATORY. Link to video]

[Full Story](#)

## 9. Maxi-Joker 2 Camcopter

[Engineering TV](#)

June 25, 2008

BERKELEY AEROBOT TEAM's Ursa Electra UAV series is, as the name implies, based on an electrically powered radio-control helicopter, Maxi-Joker. It was originally designed to serve as the vehicle platform for a DARPA Perch-n-Move project. The helicopter is capable of fully autonomous takeoff and landing without any external support, unlike its gas-powered siblings need for engine start. To facilitate the autonomous flight, each UAV is equipped with small-size strapdown inertial navigation system, high-accuracy DGPS, flight computer based on industrial PC-104, and several other sensors for the specific needs to support various research programs. Laser range finders, firewire cameras, ultrasonic sensor arrays are such examples. Ursa Electra helicopters are powered by extremely high capacity Lithium-Polymer batteries, which provides the enormous amount of electric charge to enable the vehicle to fly around 20 minutes, which is longer than the flight time of similar sized craft with fuel tanks of standard capacity. The vehicle's operation is quiet, clean, and requires much lower maintenance. All it takes to start is just a flick of a switch on the transmitter and the vehicle is in the air.

[This story features an interview with RESEARCHER TRAVIS PYNN OF THE BERKELEY AEROBOT TEAM. Link to video. Another interview with Pynn appeared on [Engineering TV](#)]

[Full Story](#)

## 10. What Does Silence Really Sound Like?

[AlterNet](#)

By Marisa Taylor, Ode

Marisa Taylor is a freelance journalist who lives in San Francisco.

July 22, 2008

The sky is bright and cloudless: another perfect day in the San Francisco Bay Area. But I'm about to spend part of it inside a windowless, soundless room called an anechoic chamber in an attempt to experience what silence is really like -- and to find out whether it even exists at all...

I've heard from others who've spent time in anechoic chambers that it's creepy. It can make you kind of crazy.

So it's with a sense of apprehension as well as excitement that I journey across the Bay Bridge from San Francisco to visit the laboratory of retired UNIVERSITY OF CALIFORNIA, BERKELEY PSYCHOLOGY PROFESSOR ERVIN HAFTER to see the anechoic chamber his team uses for research.

...Since 1966, Hafter has studied auditory perception, spatial hearing and the effects of reverberant environments on users of hearing aids and cochlear implants. The anechoic chamber, along with a highly complicated set-up of computer programs and speakers, is required to test human subjects in his laboratory.

"There is no such thing as zero when it comes to sound," he explains as he leads me to the chamber. While zero decibels is technically demarcated as the threshold for the human ability to hear sound, some people can decipher sounds in the negative decibel range. The lack of echo in the anechoic chamber won't change that. The shaggy-haired RESEARCH ASSISTANT, SWAPAN GANDHI, a musician, tells me he likes being in the chamber because "you hear things that you don't normally pay attention to," like the sound of your own pulse....

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#### **11. Day to Day: Fighting Wildfires: Who Should Pay?**

[NPR](#)

by Amy Standen

July 21, 2008

California is in the midst of a long, hot summer of wildfires. Nationally, costs to fight wildfires now take nearly half of the U.S. Forest Service budget. That's up from just 13 percent in 1991. The ever-rising costs have spurred a debate in California over who should pay: all new home buyers or only those who choose to build and live in fire-prone areas?

[This story includes an interview with UC BERKELEY FIRE RESEARCHER MAX MORITZ. Link to audio.]

[Full Story](#)

#### **12. Weekend Edition: Your Money**

**Minimum Wage Hike And A Tight Economy**

[NPR](#)

July 20, 2008

Minimum wage workers are set to get a pay bump later this week: Thursday, the federal minimum wage will go from \$5.85 to \$6.55. Small business owners say they fear higher wages may just force them to raise prices.

Some economists, however, say that low-wage workers really need the pay bump to keep up with the rising cost of living.

Host Liane Hansen talks to SYLVIA ALLEGRETTO, AN ECONOMIST WITH THE INSTITUTE FOR RESEARCH ON LABOR AND EMPLOYMENT AT THE UNIVERSITY OF CALIFORNIA, BERKELEY. They discuss what the coming minimum wage increase means for workers and employers at a time when

the economy is struggling....

[Link to audio]

[Full Story](#)

### 13. Haas dean returns to his roots

[Financial Times \[UK\]](#)

By Della Bradshaw

July 21 2008

It is something of a homecoming for RICHARD LYONS, WHO WAS APPOINTED DEAN OF THE HAAS SCHOOL OF BUSINESS AT UC BERKELEY, in California, late last week.

As well as having a Californian upbringing and a BERKELEY UNDERGRADUATE DEGREE, Prof Lyons became an academic at the Haas school in 1993 and was acting dean for a year when the departing boss, TOM CAMPBELL, was seconded to Arnold Schwarzenegger's department of finance....

Having just spent two years in charge of leadership development at Goldman Sachs, he believes he has insight into what makes Haas special. First are the students who, he says, are known for being independently minded without the "attitude" that can pervade programmes.

Second is the Bay Area location. "It's such a vanguard sort of a place." And third is the strength of the University of Berkeley brand and academic reputation. One of Prof Lyons' priorities will be to continue to build links with the other university departments, such as engineering, to develop joint programmes. Already, he says, the Haas school has been able to win corporate education bids because of these inter-department links....

[Full Story](#)

### 14. First Pete Wilson Scholarship awarded

[KGO TV](#)

July 21, 2008

A UNIVERSITY OF CALIFORNIA, BERKELEY GRADUATE STUDENT has been chosen to receive the first Pete Wilson Journalism Scholarship.

Wilson anchored the news for ABC7 for many years. He died one year ago yesterday of a heart attack while undergoing hip surgery.

MOLLY SNYDER-FINK is the first scholarship recipient. She is working as a summer intern, helping with documentary production, at Al-Jazeera in Washington D.C.

"I just thought seeing a news program that had a different perspective than an American perspective would be quite interesting and that to do that in America would be even more interesting," Snyder-Fink said....

[Link to video]

[Full Story](#)

### 15. All the perfumes of Arabia?

**Will western academics be lured to one of the world's richest universities despite its strict conservatism?**

[The Guardian \[UK\]](#)

David Cohen The Guardian

July 22, 2008

With a year still to go before their new institution opens its doors for business, education planners in Saudi Arabia already have reason to offer a non-alcoholic toast to their success in laying the foundations for what is destined to be among the world's richest universities.

A number of groundbreaking agreements with world-class universities has seen what is to be called the King Abdullah University of Science and Technology, or Kaust, make an impressive start in matching its bedazzling economic bounty with the intellectual wealth its supporters hope will eventually propel the new institution into the ranks of the great....

...Kaust has already finalised a number of \$20m agreements, including one signed in March with Imperial College, London, along with the UNIVERSITIES OF CALIFORNIA AT BERKELEY and of Texas at Austin, and - especially notable because of its existing international standing as a leading research institution - Stanford University.

Like the others, Stanford will have a role in faculty selection and curriculum development, with the Californian university hosting a number of Kaust scholars as visiting fellows. Under the agreement, up to a dozen Stanford educators will also be available to teach short courses and hold seminars in Saudi Arabia, helping as they would to academically audit Kaust's applied mathematics and computational science programmes....

[Full Story](#)

#### **16. Tree protesters keep cause in the limelight**

[Oakland Tribune](#)

By Kristin Bender and Doug Oakley, Bay Area News Group-East Bay

July 22, 2008

Berkeley — As both sides wait for a judge to hand down a final ruling that will decide the fate of a grove of trees and the future of UC BERKELEY's sports training center, there are still plenty of things going on around Berkeley to keep the long-standing protest on the radar.

On Monday, AArrow Advertising, which has offices nationwide, sent a group of its professional "sign spinners" — athletic types who usually stand in front of a business twirling advertising signs for money — to the university to protest UC Berkeley's plan to build its new \$140 million sports training center where 44 trees are planted.

They usually charge for services, but Monday the spinners came out for free with signs that read "Save the Oaks" on one side and "Y 3 Gyms?" on the other....

The sign spinning fun followed an unsuccessful attempt Sunday to plant an oak seedling in front of CHANCELLOR ROBERT BIRGENEAU's on-campus home. About 30 people walked from the grove to Birgeneau's home about 4 p.m. Sunday to speak to him and give him a seedling, police said. He was not home....

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