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## TALK OF THE GOWN

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## Science free for all

Wearing only a t-shirt, Michael Eisen chooses an outside table at the Free Speech Café and shrugs off the morning chill. "I'm used to Boston," says the Harvard-educated genomics enthusiast. More likely, it's his high-octane enthusiasm that chases the cold away--fuel that Eisen will need for what he has in mind. Together with two colleagues, Stanford's Pat Brown and former National Institutes of Health director Harold Varmus, he plans to overturn the way scientific information is shared and, by extension, how science itself is done.



The name of their revolution is inscribed on Eisen's sky-blue t-shirt: the Public Library of Science. The goal of PLoS is to make all scientific papers--and the data within them--available and searchable on the Internet for free. Currently, large publishers like Elsevier can charge as much as \$11,000 a year for obscure journals, which are nonetheless indispensable to the scientists who use them.

PLoS actually represents the trio's latest round in an ongoing battle with big publishers that began in the late 1990s. Varmus launched the first effort, PubMedCentral, while still at NIH. He expected journals would be willing to release their articles to PubMedCentral after six months. Very few did. Then the group organized a letter from scientists who pledged not to publish or review articles in

journals that refused to allow universal free access. Some 30,000 signed on, but the journals stood their ground, and the scientists--whose prestige and tenure may depend on publishing in certain journals--backed down.

The three men's latest tack is to become publishers themselves. They launched PLoS Biology (as a handsome print journal and at <http://www.plosbiology.org>) in October, with some attention-grabbing studies, a stellar editorial board, and former *Cell* editor Vivian Siegel at the helm. Journals in other disciplines are planned.

Their business model requires scientists to pay a flat \$1,500 for each article accepted (a bargain, says Eisen, since subscribers now collectively pay an average of \$10,000 per published article). Readers will have free, unlimited access. The model is sensible, but risky. Can a group of academics really challenge a multibillion-dollar industry? "Don't underestimate biologists' competitive instincts," says Eisen.

--Kerry Tremain



**Holding the Axe:** Cal's football team finished a roller-coaster year--which featured a huge, triple-overtime victory over USC and several games that slipped away--by winning six of its last nine games to finish 7-6 overall (5-3 in the Pac 10). This made the Bears eligible for a post-season bowl game for the first time since 1996. This season's up-and-down ride was reflected in the 106th Big Game, held in Palo Alto. Four Cal turnovers led to a 10-0 Stanford halftime lead. But the Golden Bears roared back in the second half, scoring 28 points behind quarterback Aaron Rodgers (who threw for 359 yards and three touchdowns) and wide receiver Geoff McCarthy, who set a Cal record with 16 catches for 245 yards and two touchdowns. The final score was 28 to 16. It was the second Big Game victory in a row for Tedford's team, meaning that the Axe remains where it belongs--in Berkeley.



Dennis Banks, Ojibwa co-founder of the American Indian Movement, at the First American Indian Treaty Conference, Mobridge, South Dakota, 1974.

Michelle Vignes's photography career began in the heady

postwar-Paris atmosphere of the newly-formed Magnum Photo Agency. Encouraged by such greats as Robert Capa and Henri Cartier-Bresson, whom she served as picture editor, Vignes soon took off on her own. She moved to San Francisco in 1966, just as the political and counter-cultural movements were heating up, and became one of their outstanding documentarians, particularly of the American Indian Movement. She followed with major bodies of work on the Bay Area blues scene and gospel churches. Vignes recently donated her entire archive to Berkeley's Bancroft Library; pictorial curator Jack von Euw calls it a significant addition to the Bancroft's core collection of Western Americana. Not that she's retired: Vignes is currently at work on a project photographing California eccentrics.

## Secrets of the cave

After digging a million years into the past, Berkeley paleobiologist Tony Barnosky can hazard some predictions about our future--and they're not good.

Barnosky's discoveries emerged from Porcupine Cave, high in the Colorado mountains, where he excavated tooth fossils of a small rodent called the sagebrush vole. Pack rats had dragged the teeth into the cave, where they were preserved in refrigerator-like conditions over a million-year period.

The study marks the first time that biologists have traced a living mammal species back that far and addresses a debate in evolutionary biology: Do large-scale climate changes cause new species to evolve? Some scientists hypothesize that past climate changes caused new species to form in relatively short time periods, whereas others think climate change has little effect.

Barnosky and his team excavated the teeth from sediment layers with telltale signs of climate shifts of the past, primarily glacial advances and retreats. The team supplemented the cave's fossil data with studies of bones from modern voles preserved by the human pack rats at Berkeley's Museum of Vertebrate Zoology and additional fossil data housed at Berkeley's Museum of Paleontology. The unique combination enabled researchers to study how species change with climate disruptions.

While Barnosky did find changes in characteristics of the vole populations over time--later voles have larger cutting surfaces on their teeth--the climate shifts did not stimulate new species to evolve. "Our study suggests that fast and dramatic changes in climate do not cause the origin of species."

From other studies, Barnosky and his colleagues have found that extinction of species is a more likely outcome.

Barnosky points out that "global warming is happening faster now than it has in the past 60 million years." Their prediction: a net loss of biodiversity if global warming continues at present rates.

Can't threatened animals just move to more hospitable areas, as they have in the past? "The landscape is now fragmented by human use," Barnosky says, "making it more difficult for species to relocate."

--K. T.

## Blues in the News



The American Association for the Advancement of Science named six 2003 fellows from Cal, all biologists: Thomas C. Alber, Douglas Clark, Thomas W. Cline, Paul W. Ludden, David H. Raulet, and Jasper Rine.

Cal tennis player **Raquel Kops-Jones** became the first African-American woman to win a NCAA Division I singles title at the ITA All-American tournament in October.



New Governor Arnold Schwarzenegger named **Margita Thompson '89** his press secretary in November.

Biophysicist Xiaowei Zhuang '96, conservation analyst **Peter Gleick '86**, and human rights investigator Corrine Dufka '84 won \$500,000 MacArthur "genius" grants in October.



Iran released Peace and Conflict Studies lecturer **Dariush Zahedi** on bail November 14. Zahedi was arrested in July on suspicion of espionage; colleagues working for his Berkeley return say he was merely in the wrong place at the wrong time.

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