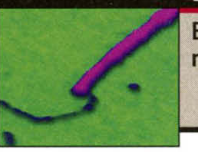

CALIFORNIA BUDGET

Latest Cuts Send Universities Reeling

A rapidly ballooning budget deficit is forcing California to make substantial cuts in state-funded science programs. The reductions affect facilities used by a global community of researchers, from astronomical observatories to oceanographic collections. And the bad news is expected to get worse: Next month, Governor Gray Davis will propose chopping at least $29 million, roughly 10%, from the state's next research budget in response to a $21 billion deficit.

California's woes are a result of a nationwide economic downturn, declining tax revenues, and an increased need for social services across the country. State officials who only a few years ago were debating how to spend surpluses are now putting the squeeze on universities and research institutes. "There's not much joy in finding misery elsewhere, but this problem is no longer unique to California," says Joseph Miller, director of the Lick Observatory at the University of California (UC), Santa Cruz. "It's a precarious situation," adds Nils Hasselmo, president of the Washington, D.C.–based Association of American Universities.

Earlier this year, the California legislature imposed a $32 million cut on state-supported science at the nine-school UC system as part of a 10% spending rollback for the fiscal year that began 1 July. Last week, the governor proposed taking another $18 million bite out of research as part of an extraordinary set of midyear cuts to higher education. And in January, Davis will propose another round of cuts of at least 10%, according to UC spokesperson Brad Hayward. "These [new] budget cuts will be painful because we have already absorbed major cuts," says UC president Richard Atkinson. The details of the 2002–03 cuts will be fleshed out this week at a meeting of the university system's Board of Regents, which is also reviewing a hike in student fees.

For the Scripps Institution of Oceanography at UC San Diego, the belt tightening means reducing by half the $300,000 budget for its oceanographic collections. Among the most extensive in the world, they include marine vertebrates and invertebrates as well as sediment cores and dredged rocks. If the state subsidy is eliminated in 2004–05, as expected, the collections would need to find alternative funding to remain open, says Scripps Director Charles Kennel. He says commitments to staff salaries and collaborative ventures come first, leaving him with little choice.

Sinking fast. Scripps's famed marine collections face closure unless researchers can find alternatives to state funding.

CREDIT: SCRIPPS INSTITUTION OF OCEANOGRAPHY

Kennel hopes that by sounding the alarm, curators will be able to generate enough non-state funding to keep the collections intact and operating. "Our folks aren't going to go quietly into the night; they will fight like hell," says Kennel. But Scripps's Mark Ohman, curator of the pelagic invertebrate collection, says it will be difficult to find alternate sources. "Scientists who run the collections think that it is unrealistic to expect to raise a permanent endowment of $5 million to $10 million in 9 months," he says.

The next round of cuts may also leave Scripps with nothing for its portion of the California Cooperative Oceanic Fisheries Investigation, a 50-year effort with the National Oceanic and Atmospheric Administration (NOAA) and California's Fish and Game Department to monitor the ocean ecosystem. Kennel says that NOAA is setting up a committee to examine the problem.

At Lick Observatory, Miller is coping with a $500,000 cut to his $5 million budget by laying off a handful of technicians. "This is hitting us at our heart," he says. The cuts are also expected to delay several projects, including work on advanced coatings for telescopes and planning for the $600 million, 30-meter California Extremely Large Telescope project. "Research at UC has been a driver for the economy," Miller adds. "Such cuts are so shortsighted."

Agricultural research is taking it on the chin, too. The renowned agricultural and environmental sciences department at UC Davis will be losing 25 research positions through attrition, says its dean, Neal Van Alfen, who notes that the department has not yet recovered from the last recession in the early 1990s. But until the U.S. economy bounces back, he and other research managers can expect more hard times.

–ANDREW LAWLER

SCIENCE AND SECURITY

Academy Asks to Ease Visas for Scholars

University of Utah physicist Xiaomei Jiang rushed home to China this fall after her parents died in a car crash. But new security reviews adopted after the 11 September terrorist attacks have so far blocked the fifth-year doctoral student from rejoining her lab in Salt Lake City. Jiang, unfortunately, has plenty of company as she waits for a new visa. Security reviews are causing delays that threaten the health of U.S. science, say the leaders of the National Academies, which last week called on the government to fast-track foreign researchers seeking to enter the country.

The academies issued a 3-page warning after hearing "numerous" reports of immigration problems from academic researchers and seeing the impact on several of its own meetings, says Bruce Alberts, president of the National Academy of Sciences. The restrictions, enacted "in the name of national security, are having serious, unintended consequences for American science, engineering, and medicine," says the 13 December statement, which was also signed by William Wulf, president of the National Academy of Engineering, and Harvey Fineberg, president of the Institute of Medicine. To prevent future disruptions, they ask the Department of State to reinstate a "precleared" status for foreign scientists who travel frequently to the United States,

Happier times. Physicist Xiaomei Jiang, second from left, with her parents before their deaths took her back to China.

create a special visa for researchers with solid credentials and invitations from U.S. scientists, and consult with U.S. scientists on which fields should raise red flags.

Consular officials have a strong incentive to err on the side of extreme caution, the statement notes, as they face criminal penalties for granting visas to terrorists. The academy presidents urge the State Department to create some type of counterweight that would also encourage the officials to smooth the way for "scholars who benefit our nation." A State Department official familiar with the problem says the suggestions are "helpful and on target; we're already working to make them happen." But he and White House officials warn that progress could be slow. Congressional action might be needed to address the consular liability issue, which is enshrined in law, or to carve out special visas for visiting scientists.

Recent enrollment statistics suggest that the delays are so far having a limited impact on U.S. academic life. The number of foreign students at 20 major research universities rose by 4% this fall, to 36,656, according to a survey released last month by the Association of American Universities. But there has been a 10% drop in the number of foreign faculty members and researchers on campus, the survey found, and more students and scholars reported visa delays or denials than in the previous year. Those numbers could climb in the short run, as the government struggles to beef up security reviews and begin monitoring foreign students studying in "sensitive" fields. On 12 December, the State Department unveiled one monitoring program, and more plans are expected shortly.

In the meantime, Jiang's colleagues say they miss her and her talent in running key experiments. They also worry that her visa troubles could sour the promising physicist, who co-authored a paper in *Science* on plastic lasers (4 February 2000, p. 839), on her long-term career prospects in a country that once welcomed her for training.

–DAVID MALAKOFF

STEM CELL MEDICINE

Stanford Gets Gift for New Institute

Stanford University last week announced the formation of a new, privately funded institute to marry research on stem cells and cancer in a search for new therapies. The announcement precipitated a brief media flurry over the issue of cloning, leaving university officials scrambling to beat down press accounts that suggested the school might become a baby factory.

A $12 million gift from an anonymous donor has kicked off the Institute for Cancer/Stem Cell Biology and Medicine, to be headed by hematopoietic stem cell researcher Irving Weissman. The university will build on existing faculty research but also hopes to recruit more scientists. Stanford medicine Nobelist Paul Berg says the goal is to raise $100 million to support research on genetically based treatments for cancer, Parkinson's disease, heart disease, and other illnesses.

Stanford got in hot water after the institute stated an intention to develop new human embryonic stem (ES) cell lines to study particular diseases. During an interview with the Associated Press (AP), Weissman acknowledged that scientists might someday try to create human stem cell lines for this type of research through nuclear transfer—otherwise known as therapeutic cloning. The resulting AP story, declaring that "Stanford University has announced its intention to clone human embryos," forced Stanford officials to hold a press conference immediately to deflate the brouhaha. They followed it with a statement emphasizing that "creating human stem cell

Stem cell flap. Press reports muddied the focus of Irving Weissman's new center at Stanford.

CREDITS: (TOP TO BOTTOM) CHEN-CHUN WU; L. A. CICERO

ScienceScope

Neutrinos, Take Two It's not wasted effort to build two different laboratories to look for neutrinos, a National Academy of Sciences panel concluded last week. The verdict is welcome news to proponents of converting South Dakota's Homestake gold mine into the world's deepest underground laboratory.

Earlier this year, a budget-conscious White House asked the academy to assess U.S. neutrino detectors, with an eye toward avoiding duplication (*Science*, 5 July, p. 31). The panel, chaired by physicist Barry Barish of the California Institute of Technology in Pasadena, focused on the Antarctic IceCube project and an underground lab, concluding that both projects are important. Whereas IceCube looks at astrophysical objects by using neutrinos, an underground lab would directly study the nearly massless particles, which are produced by the sun and other cosmic objects.

The report won't assure Homestake's creation, however. The mine's owners haven't resolved legal issues with the government, and the National Science Foundation hasn't said if it will seek an estimated $300 million in start-up funds. Congress, meanwhile, has started funding the $240 million IceCube project.

Journal Goes Public With a $9 million, 5-year grant from the Gordon and Betty Moore Foundation, Nobel laureate Harold Varmus and other biologists are setting out to publish a model "open-access journal" in biology. Varmus, president of the Memorial Sloan-Kettering Cancer Center in New York City, teamed up with Patrick Brown of Stanford University and Michael Eisen of Lawrence Berkeley National Laboratory in California to secure funds and staff for the venture, with Varmus serving as chair. Their aim is nothing less than to "create a new economic model in scientific publishing"—a low-cost operation that will not charge for articles but would pay its way with authors' fees (estimated at $1500 per article initially).

In 2000, these scientists organized a movement called the Public Library of Science (PLOS) to advance open-access publishing. Their international appeal garnered 30,000 pledges of support, including a threat to boycott journals that do not make their content available for free. That threat was not carried out because authors didn't have a good alternative journal to turn to. But now they do, Varmus says: *PLOS Biology*'s first issue will appear "in the latter part of 2003."