on the panel's policy subcommittee. To emphasize this need, the panel included five moderate-sized space initiatives in its report. Whether they will all fit in NASA's limited budget is another matter: Although NGST and the Terrestrial Planet Finder are included in the agency's long-term budget as well as the strategic plan, several others are in the plan but not the budget.

Not everyone is happy with the NRC study. Jon Morse, an astronomer at the University of Colorado, Boulder, complains that the committee excluded the Space Ultraviolet Observatory because it favored a larger and more complex spacecraft, making it too ambitious for this decade. But Morse hasn't given up: This week he's meeting with NASA engineers and scientists to improve the observatory's chances of making the cut in the next decadal report. **–ANDREW LAWLER**

CALIFORNIA

## UC Teaching Assistants Win First Union Contract

The University of California (UC) system has agreed to a union contract covering some 8000 teaching assistants (TAs), capping a 16-year fight by graduate students for a labor agreement with their employer. The contract, between UC and the United Auto Workers (UAW), includes an immediate 1.5% pay raise and creates a mechanism for overtime pay as well as limits on the workweek. However, it exempts academic matters from the collective bargaining process, removing a major sticking point among faculty during the yearlong negotiations that ended last week. The pact must still be ratified by each of the system's eight general campuses.

"TAs are choosing unions," exults Christian Sweeney, a union spokesperson and a graduate student in history at UC Berkeley, about similar efforts by graduate students at the University of Washington and the University of Illinois, Urbana-Champaign, that so far have come up short. The UC agreement covers a small minority of UC's 39,000 graduate students and excludes some 8000 research assistants, most of whom are paid through research grants. University officials don't anticipate a major disruption of academic life. "It's unlikely to have a significant impact" on graduate education in science at UC Los Angeles, says psychiatrist Robin Fisher, associate dean of the graduate school.

The key issue in the lengthy California battle has been whether teaching assistants are primarily students or employees. The university argued that they were not employees and could not form a union. But in December 1998, the state Public Employee Relations Board ordered the university to allow a vote on unionization among TAs as well as undergraduate tutors and readers. After a systemwide strike (*Science*, 11 December 1998, p. 1983), the students voted to join the UAW-affiliated Association of Graduate Student Employees.

**Work in progress.** Union pact tackles conditions for grad students at Berkeley and other UC schools.

The new contract gives the university "sole authority on all decisions involving academic matters" and exempts "workload" disputes from arbitration while limiting how often the usual workload of 20 hours per week can be exceeded. It also establishes arbitration for settling nonacademic complaints about health and safety, discrimination, and sexual harassment, and provides for the eventual full remission of tuition fees. Most TAs now earn about $13,500 a year, and UC spokesperson Mark Westlye says he doesn't know where in the budget the extra money for the raises and tuition will come from.

Peter Miller, a union organizer at the University of Illinois, says the impetus for unionization has come from arts and humanities grad students, who get less money from research grants and spend more years teaching than do science majors. One UC scientist who requested anonymity calls the agreement "a reasonably good compromise," although he thinks everyone would be better off without it: "The TA-faculty relationship has been good; there wasn't much of anything that really needed to be fixed."

With UC grad students now in the UAW fold, Sweeney says, the number of unionized grad students in the country has doubled to about 20,000. Although the University of Wisconsin and several other public universities have had graduate student unions for some time, most administrations still oppose unionization. Illinois graduate students voted 3 years ago for a union that the university refuses to recognize, and the University of Washington has rebuffed student attempts to unionize on the grounds that state law does not allow it. "Our TAs are students first; they are only employed as a result of their continuation of successful educational pursuits," says Steven Olswang, vice provost of the University of Washington. New York University is appealing an April ruling by a regional office of the National Labor Relations Board that graduate students can be regarded as employees.

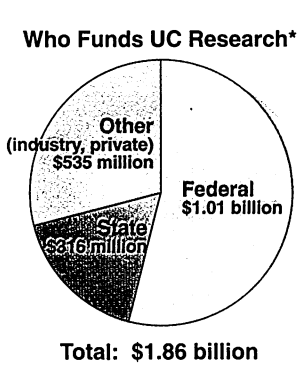
Although Olswang argues that union membership undermines the collegial relationship and tips it toward the adversarial, UC has apparently decided to make the best of the situation. Says Westlye, "Now that we have unionization, we will proceed in as copacetic a fashion as we can." **–CONSTANCE HOLDEN**

CALIFORNIA

## State Ready to Create 3 Research Institutes

Lured by $300 million in state money, California university officials are scrambling to compete for three planned interdisciplinary research institutes that would be set up under a bill speeding through the state legislature. The legislation—introduced this winter as a way to enhance the state's already strong science and technology base—has won bipartisan support and could be approved as early as next week.

Even before the bill is approved, researchers are putting




CREDIT: (TOP) R. HOLMES/CORBIS; (BOTTOM) SOURCE: UNIVERSITY OF CALIFORNIA

together proposals. The prize will be $25 million a year over 4 years for each institute, and the winners must raise twice that amount from outside sources. Only the 10 University of California (UC) campuses, including the new Merced site, are eligible to host the new institutes, but collaborators can come from any university in the state.

"The bill promotes technological and scientific research and training to maintain California's leadership," says Antonio Villaraigosa, former speaker of the California assembly, who introduced the bill at the request of Governor Gray Davis. "These institutes will concentrate resources and mobilize the state's best scientists and engineers in medicine, biotechnology, telecommunications, energy, space, and agriculture."

The idea for the California Institutes for Science and Innovation grows out of the state's economic boom and a rare political alignment in which Democrats control the governor's mansion and both legislative houses. It's a departure from most other state science and technology investments, which tend to focus on short-term economic development rather than basic research. It also differs from the typical state investment in university buildings, made without regard to the potential commercial value of the research going on inside. "States spend billions of dollars on university infrastructure, but most of it is not targeted for an economic payoff," says Dan Berglund, executive director of the State Science and Technology Institute in Columbus, Ohio. Adds Robert Conn, dean of the Jacobs School of Engineering at UC San Diego (UCSD), "The commitment of the state to provide this infrastructure is extraordinary. It's bold thinking."

Conn is part of a team at UCSD and UC Irvine drafting a proposal for an institute in telecommunications and information technologies that would build on existing research efforts and local expertise. Officials have already made progress in lining up outside donations, Conn says, including a $15 million pledge from QualComm, the wireless communications giant headquartered in San Diego. In a similar vein, UC Davis, the state's agricultural campus, is proposing an institute on environmental informatics and technology to develop new production methods in agriculture and other sectors. "We want to improve the economy without damaging the environment," says Kevin Smith, Davis's vice chancellor for research.

The Los Angeles and Santa Barbara campuses are jointly proposing a nanosystems institute that would also have a heavy emphasis on developing a cadre of researchers for this emerging area. "The institute would provide core facilities that otherwise would be difficult to build or to use because we wouldn't have a critical mass of investigators," says Roberto Peccei, dean of physical sciences and interim vice chancellor for research at UCLA. "One of the products of this institute will be grad students and undergrads who will have some real understanding of cross-disciplinary fields. You can get a lot of people to work together who otherwise wouldn't."

Although the bill has yet to be approved, the UC system has asked campuses to submit their ideas by the end of this month. Experts in the relevant fields will review them for scientific and educational merit, along with the importance of the work to the state's economy, says UC official Susanne Huttner, and from that pile will come a final round of submissions in September. Any California campus, public or private, can collaborate on a proposal, and a single campus can submit more than one idea. But no university can land more than one institute.

Although the state money is intended for bricks and mortar, state officials say that the outside funding—from federal agencies, foundations, and industry—may be used for research activities and operating costs. And while three new institutes pale in comparison to the number of existing centers on California campuses, they would represent a significant part of the state's investment in basic research (see pie chart). In addition, the absolute amount is nothing to sneeze it, says Berglund: "$300 million over 4 years is a big number." –EVELYN STRAUSS

TOXICOLOGY

## Dioxin Draft Sparks Controversy

Even before it is released, the U.S. Environmental Protection Agency's (EPA's) new report on dioxin is creating a furor. A draft, leaked to *The Washington Post* last week, concludes that dioxin is 10 times more likely to cause cancer than previously believed, posing a risk as high as 1 in 100 among the most exposed individuals. Some scientists immediately blasted the findings as "unbelievable," while acknowledging that they had not seen the report. Even before the leak, concern from other federal agencies about public anxiety prompted the White House to organize an interagency review of the draft, which has yet to undergo review by EPA's Science Advisory Board.

Five years ago, that same board kicked an earlier version of the dioxin reassessment back to EPA for revision, calling it scientifically flawed (*Science*, 26 May 1995, p. 1124). The 1994 assessment concluded that low levels of dioxin could be causing significant reproductive, immune, and developmental effects and retained dioxin's label as a "probable" carcinogen. After analyzing the

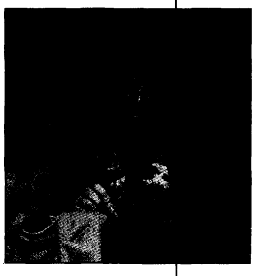
## ScienceScope

**Late Hit** Representative James Sensenbrenner (R–WI), chair of the House Science Committee, reduced a senior National Science Foundation (NSF) official to tears last week when he banned her from testifying about science education. "Your conduct is insulting to this committee," he bellowed at a mortified Judith Sunley, NSF's chief education officer. "I'm giving you an F and excusing you for the day."

Sensenbrenner's gag order was triggered by NSF's failure to heed a committee policy requiring witnesses to submit testimony at least 24 hours in advance. The purpose, says committee spokesperson Jeff Lungren, is to give staff and members time to prepare questions. Instead, a copy of Sunley's two-page statement arrived a few minutes before the start of the 17 May hearing on H.R. 4271, a bill that would expand NSF's role in precollege science and math education (*Science*, 21 April, p. 419).

That statement, the product of negotiations between NSF and the White House, expressed support for the bill's intent but offered caveats. "Ironically, [the White House] thought our original draft was too supportive," says one NSF official. Even without NSF's verbal endorsement, the committee is expected to approve the legislation. But its chances of going any further this year are slim.

**Elusive Goal** A heavily touted promise to eradicate polio by the end of this year won't be met, world health officials admitted last week. Speaking at the World Health Assembly in Geneva, World Health Organization (WHO) Director-General Gro Harlem Brundtland (right) said that obstacles ranging from armed conflict to a temporary vaccine shortage will foil the organization's best efforts in sub-Saharan Africa and the Indian subcontinent, regions where the disease is still active.



Noting a current $300 million shortfall in the campaign's budget, Brundtland also urged leaders in high-risk countries to remain committed to an effort that has made considerable progress. Some 190 countries are now free of the disease, and even the Indian subcontinent reports that the number of cases plummeted from 25,711 in 1988 to 1866 last year. But Uton Muchtar Rafei, WHO regional director for Southeast Asia, warns that up to 10% of the target population remains out of reach because of a growing birthrate, a transient population, and insufficient supplies of the oral vaccine.

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