



Biophysicist Daniel Kiehart's lab is in limbo until he hears about a grant renewal.

## POLICY

# Science agencies prepare for cuts

*Scientists already feeling the bite of US budget sequester.*

BY MEREDITH WADMAN

Daniel Kiehart, a biophysicist at Duke University in Durham, North Carolina, has put off the US\$8,000 recharge of the gas laser he uses to probe a key motor protein in *Drosophila* embryos. In December, he bought his own airline ticket to a meeting in San Francisco, California. And two weeks ago, when his senior postdoc handed in her notice, he did not move to replace her. "I just can't do that right now," says Kiehart.

In normal times, the US National Institutes of Health (NIH) in Bethesda, Maryland, would have already renewed a grant that Kiehart has held since 1984; his proposal was rated between "excellent" and "outstanding" last summer. Yet these are anything but normal times, and Kiehart is still awaiting a decision.

On 1 March, agencies such as the NIH and the National Science Foundation (NSF), based in Arlington, Virginia, face an abrupt 5.1% cut in this year's spending under the 'sequester' — a cut that will be all the more painful because it must be done before the US fiscal year ends on 30 September (see 'US budget woes'). Although Congress might reach a last-minute deal to delay or avoid some of the reductions, agencies are wary of committing themselves to grants that they might not be able to afford, and scientists are starting to feel the sting.

The agencies are "making very conservative decisions because nobody wants to overspend and be caught", says Howard Garrison, deputy executive director for policy at the Federation of American Societies for Experimental Biology in Bethesda, Maryland.

The agencies will have some flexibility in apportioning the cuts, which amount to \$1.57 billion at the NIH and \$288 million at the NSF. At the NIH, the 5.1% reduction would be applied to each of the 27 institutes and centres — with some protection for its Clinical Center, the research hospital in Bethesda where cuts could put patients' lives at stake. Institute directors could cut some programmes more heavily than others, as long as the total reduction equals 5.1% (see 'Wiggle room').

At the NSF, it is expected that the cuts will be applied to each major funding account. One of these, the research account, includes scientific directorates from geosciences and mathematics to engineering and biological sciences, and comprises \$5.7 billion of the agency's \$7-billion budget. Like the NIH institute directors, departing NSF director Subra Suresh or his successor would be able to protect some research programmes from the brunt of the cuts. Since 2010, NSF research budgets have favoured computing and engineering. "I suspect he is going to try to protect his priorities as much as possible," says Joel Widder, a former NSF deputy director

who is now a partner at the Oldaker Group in Washington DC, a lobbying group for universities and research organizations.

Senior officials at the science agencies, under orders from the White House Office of Management and Budget (OMB), will not discuss their plans for the possible cuts. But an OMB memo last month directed each agency to minimize impacts on its core mission, and to anticipate challenges that could raise concerns over life, safety or health. Although some of these are obvious — scientists at the isolated stations of the NSF-funded Antarctic research programme need to be equipped for the winter, for instance — others are less so. "People have not been given sufficient time to do anything but take a meat axe to the portfolio," notes Garrison.

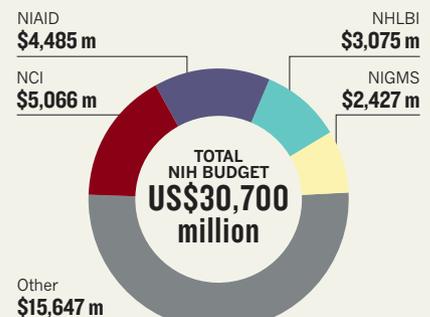
At the NIH, some of the vulnerabilities are already clear. For example, the agency's \$3.4-billion intramural research programme will be squeezed. Because much of that budget is tied up in the salaries of its more than 18,000 employees (whose jobs are expected to remain secure), other spending, from mouse cages to pipette orders, would have to absorb the losses.

There is another pressure point: some \$16 billion of the agency's \$30.7-billion total budget is tied up in multi-year grant commitments. Without significant cuts to these, the rest of the NIH budget would have to be slashed further. Already, the agency is paying instalments on previously awarded grants at only 90% of what was promised — a typical strategy when Congress has not agreed on final budget numbers. But grant recipients normally get the remaining money, or most of it, late in the fiscal year. In the event of a sequester, grant recipients would be highly unlikely to see more than half of the remaining 10% delivered. That could leave principal investigators deliberating between buying lab animals or firing postdocs.

For those seeking new funding or grant renewals, the choices may be even more grim. In a normal February, Ellen Ketterson, an evolutionary ecologist and long-time NSF grant recipient at Indiana University in

## WIGGLE ROOM

The National Institutes of Health would apply 5.1% cuts at the level of its 27 institutes and centres — giving directors the flexibility to pick favourites within those institutes.



NIAID, National Institute of Allergy and Infectious Diseases; NHLBI, National Heart, Lung and Blood Institute; NCI, National Cancer Institute; NIGMS, National Institute of General Medical Sciences.

SOURCE: NIH

## US BUDGET WOES

*Spending battles loom in coming weeks*

The trap that the US Congress devised two years ago to force cuts in the federal deficit is about to spring. Steep budget cuts, known as sequestration, are scheduled to hit on 1 March. In January, a deadlocked Congress delayed the cuts at the last minute (see *Nature* **493**, 13; 2013), but this time, many Capitol Hill observers say that there is little appetite for compromise. “I have every reason to believe that sequestration is going to go into effect,” says Chris Hellman of the National Priorities Project, an organization in Northampton, Massachusetts, that promotes budget transparency.

Scientists are already feeling the effects of the impending cuts (see main story),

expected to amount to 5.1% at the National Science Foundation and the National Institutes of Health. But because all of the cuts for 2012 must be squeezed into the 7 months before the fiscal year ends on 30 September, they “will feel like closer to 10%”, says Barry Toiv, a spokesman for the Association of American Universities in Washington DC.

The delayed 2013 budget appropriations are unlikely to alleviate the pain. On 27 March, the stop-gap spending bill that has sustained government agencies at 2012 levels will expire. If cuts come on 1 March, science advocates may not have time to fight to restore funding in any 2013 budget agreement. “I just don’t see us being able to

get that back,” says Jennifer Zeitzer, director of legislative affairs for the Federation of American Societies for Experimental Biology in Bethesda, Maryland. “That just means we’ll be asking for more in 2014.”

The budgetary logjam has also delayed President Barack Obama’s budget request for 2014. The proposal was due in early February, but is now expected to debut in March. Experts say that it is difficult to predict what the president will propose for science agencies, or whether Congress will be receptive. “It’s going to be a big fight,” says Michael Lubell, director of public affairs for the American Physical Society in Washington DC. **Helen Shen**

Bloomington, would be hiring three field assistants and ordering mist nets, traps and colour bands for a census of dark-eyed junco songbirds that she has conducted in Virginia each spring since 1985. Ketterson says that continuity is crucial to understanding how long the

birds live, when they migrate and how their breeding dates are affected by climate change.

She applied for an NSF grant last August, and expected to learn of her award in November. But her programme officer told her that the application is on hold, with no chance of

funding before the NSF learns what its budget will be. She is approaching former field staff to see whether they can donate their time, and she is applying for emergency bridge funding from the university. “There are others, also waiting,” she says. “Delay has consequences.” ■

## FUNDING

# Europe scales back research plans

*Leaders propose 13% cut to commission’s proposals.*

BY ALISON ABBOTT

The ambitious vision for Europe’s next research programme dimmed last week when heads of the 27 member states of the European Union (EU) agreed to slash the overall budget for 2014–20, at the end of a long and acrimonious meeting. The deal scales back the budget proposed by the European Commission in November 2011 for its Horizon 2020 research programme by about 13%, to €69.24 billion (US\$108 billion), and means that the first year of the new programme will have a smaller budget than the last year of the previous one.

“The way it looks now, with all the arguments that were on the table in favour of promoting research in Europe, that decision is disappointing,” says Helga Nowotny, president of the European Research Council (ERC).

Europe’s leaders also reduced funding for specific scientific projects, including Galileo,

Europe’s satellite-navigation system, but they urged poor regions and countries to use more of their EU subsidies to pay for science.

A spokesman for the commission points out that even the reduced budget for Horizon 2020 marks a significant rise in research funding compared with the €55 billion for research during 2007–13.

The highly regarded ERC had been counting on a larger increase. Founded in 2007, it awards large grants on the basis of research excellence, and had hoped for a €13-billion slice of Horizon 2020 to help boost the current 12% success rate of proposals. The council did not detail how the cuts should be distributed among Horizon 2020’s research programmes.

The European Parliament has yet to endorse the council’s decision; politicians there will cast their votes some time in the next three months. Parliament had called for a mighty €100-billion budget for Horizon 2020 (see *Nature* **489**, 188–189; 2012).

Some prominent parliamentarians, including Christian Ehler, rapporteur for Horizon 2020, have vowed to fight for more. But observers say that behind-the-scenes negotiations between the commission, council and parliament over the past months suggest that the parliament is unlikely to get its own way.

The council’s proposal that more EU cohesion funds — historically used to promote the competitiveness of poor regions by improving infrastructure such as transport links — be used for research has precedent. Last year, Greece awarded €3.7 million in cohesion funds to molecular biologist George Kollias from the Biomedical Sciences Research Centre ‘Alexander Fleming’ near Athens. He will use them to equip and operate a Greek node of the Infrafrontier project, which aims to systematically phenotype, or characterize, mutant mice. “It’ll give all Greek scientists easier access to high-tech genetic tools,” he says.

The council specified exact budgets for three large scientific infrastructure programmes outside Horizon 2020. Its recommendations cut the commission’s budget for Galileo by 10% and for GMES, a system of Earth-observation satellites, by roughly one-third. The council did, however, allocate €2.7 billion to the experimental nuclear fusion reactor ITER, which the commission had proposed not funding.

“But discussions are not yet over,” cautions Nowotny. “We all have to wait to see the final figures and agreement.” ■ **SEE EDITORIAL P.147**