

# US government scientists head back to work

Overflowing in-boxes and confusion greet relieved researchers after 16-day shutdown.

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The shutdown may have long-term effects on US research programmes, including weather and climate studies in Antarctica.

As if emerging from a coma, the US government slowly came back to life today after politicians agreed on a deal to fund federal operations, thereby ending the [16-day shutdown](#) that had halted most government research.

Workers returning to the Environmental Protection Agency's Washington DC headquarters were greeted this morning by US vice-president Joseph Biden — bearing a few symbolic breakfast muffins — and a less-sweet memo that explained, among other things, that scheduled travel will not restart until 20 October.

At NASA, the shutdown [halted work on several missions in development](#), including the James Webb Space Telescope, which for some projects could lead to launch delays months or years from now. Agency chief Charles Bolden has already warned employees that it will take time for NASA to return to full strength. "We've been away for some time now, so please don't expect that we can return to normalcy in a day or two or even a week," he wrote in an e-mail message.

But it may take much longer for the full scientific impact of the shutdown to become apparent. At the National Institutes of Health (NIH) in Bethesda, Maryland, for example, 73% of the agency's 18,646 employees were ordered to remain at home during the shutdown. Now researchers returning to work have to figure out how to [restart experiments that had been abandoned](#) during the government closure, such as some that use specially bred mice and primates. Hundreds of programme officers at the agency are also beginning to process a backlog of grant applications that were due for consideration during the shutdown. The agency decided today to move all October grant-submission deadlines to November.

At the National Science Foundation (NSF) in Arlington, Virginia, where all but 30 of its roughly 2,000 employees were placed on leave during the shutdown, the agency's grant-making machinery restarted with some minor hiccups, such as expired e-mail passwords. One programme officer reported that he was still locked out of his in-box at midday. Another returned to find a backlog of panicked messages from researchers who feared that a grant cycle had been cancelled, because an NSF website automatically announced that a proposal deadline originally scheduled during the shutdown had been pushed to 2014.

One ongoing logistical headache for both the NSF and NIH will be rescheduling the panels that meet to evaluate grant proposals. At the NSF, reviewers normally travel to the agency headquarters, and meeting space must be reserved six months in advance. The shutdown may force more panels to convene by teleconference or in hotels, as the NSF works through a backlog of cancelled meetings.

"Everybody is dreading having to reschedule," says Henry Gholz, a programme director at the Division of Environmental Biology.

**"We're all holding our breath"**

Meanwhile, researchers who participate in the agency's Antarctic programme are waiting to see how much they can salvage of this year's fieldwork season — which normally runs from October to February. On 8 October, the agency [put its trio of Antarctic stations into 'caretaker status'](#) and started evacuating all but the most essential staff and halting research.

Staff lay-offs began at the largest Antarctic station, McMurdo, a few days ago, and some employees and researchers had already been flown back to Christchurch, New Zealand — where many remained, hoping that the shutdown would come to a quick end so that they could return to the ice. At Palmer Station, off the coast of the Antarctic Peninsula, scientists who had been set to leave by ship this morning were given a reprieve yesterday when it became clear that the government would reopen today.

The NSF says that it is still trying to determine how much of this year's planned research can take place before the austral summer ends — a challenge given the careful, expensive choreography of cargo planes, supply ships and helicopters normally required to support research in the harsh polar environment. At particular risk are studies that depend on seasonal events, such as the melting of Antarctic sea ice or animal-breeding seasons, and research at remote field sites that require extensive air support.

"I think we're all holding our breath," says Robin Bell, a glaciologist at Columbia University's Lamont-Doherty Earth Observatory in Palisades, New York. Bell is part of Operation IceBridge, an aerial NASA campaign to map ice sheets in remote parts of Antarctica, which was originally scheduled to begin this month. "It's a giant, beautiful logistical dance, and now NSF is trying to figure out how to do the dance with less time," he says.

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