

Research

British scientists face a 'huge hit' if the US cuts climate change research

Academics fear Donald Trump's environmental policy may put an end to key data from US agencies

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Joanna Haigh, co-director of the Grantham Institute, Imperial College London, uses US satellite data to study how the sun influences the Earth's climate. Photograph: Linda Nylind for the Guardian

UK scientists are warning they may be unable to carry out crucial research on climate change if Donald Trump cuts climate science funding in the US.

Trump tweeted in 2014 that research on global warming is “very expensive bullshit” that “has to stop”. Scientists are braced to find out whether his administration will put these words into practice. The early signs are not good. Last month Scott Pruitt, one of the US Environmental Protection Agency's fiercest critics, was named as its new head. There are rumours that the budget of its office for research could be cut by more than 40% as part of extensive overall cuts.

Meanwhile there are reports that the National Oceanic and Atmospheric Administration (NOAA), one of America's leading climate science agencies, could have its budget cut by nearly 20%. The agency's satellite division, a vital source of data for climate research, is expected to bear the brunt of cuts.



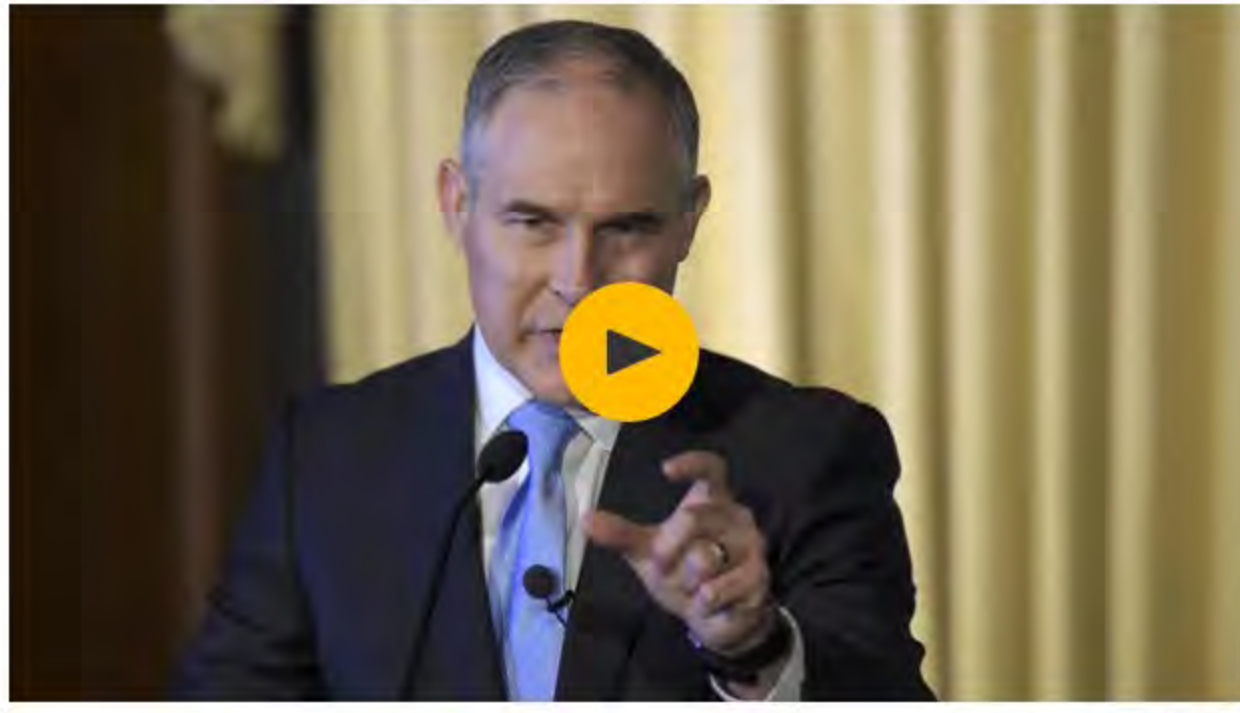
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British scientists say moves to squeeze funding of climate-related research in the US - and of facilities at government laboratories in particular - could be disastrous for work in the UK. And they say Trump's travel ban is already harming their collaboration with scientists in America, with some researchers pulling out of commitments in the UK because of fears they may not make it back through US visa controls.

Prof Joanna Haigh, co-director of the Grantham Institute at Imperial College London, says: “Everything we do is international, and we particularly rely on American satellite data. Perhaps we could manage if other areas were cut - perhaps the Chinese or the Indians might even step in to fill the gaps - but we would definitely miss the satellite data from the US.”

Haigh uses satellite data to study how the sun influences the Earth's climate. She is helping to disentangle the effect of natural fluctuations in solar energy from those of manmade greenhouse gases - and she is clear that global warming cannot be attributed to the sun or other natural processes.



Head of EPA denies carbon dioxide causes global warming

“At Imperial we use NOAA satellite data for many important climate studies. For example, it can tell us how much of the sun's energy the Earth absorbs, how much heat energy it emits and how these values depend on other factors, particularly cloud cover.”

She says cutting the NOAA's budget would be a “huge hit” not only for science, but also for our understanding of the weather. “They are trying to get rid of everything that could be badged as climate change. But to understand the climate you need to measure the weather. You can't separate the two. Whether you are on a climate change ‘bandwagon’ is irrelevant.”

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Prof Piers Forster, director of the Priestley International Centre for Climate at Leeds University, says: “If organisations like Nasa and the NOAA are prohibited from putting up new satellites, that could be really detrimental for the entire international science community. We urgently need these data sets to be able to monitor and understand climate change.”

Like many scientists Forster fears a cull across a number of US government laboratories concerned with climate change. “Our one biggest concern is the loss of raw talent,” he says. “The loss of people we collaborate with and the people producing this data that we rely on.”

He says the Trump administration is already making scientific collaboration across the Atlantic more difficult. “Quite a lot of the academics we work with in America are immigrants and some of them are concerned about leaving the country in case they don't get back in. We've certainly seen instances where people have pulled out of coming to scientific conferences. Four or five people I know of, speakers and so forth, have pulled out of their commitments to come here.”

In a recent example a key scientist from Princeton University pulled out of a climate change workshop that Forster co-organised at Imperial College London.

American research fellow Dr Sarah Batterman moved to Leeds University to work on tropical forests and climate change a year ago after doing postdoctoral research at Princeton. She is in regular contact with colleagues in the US and says: “The situation for people doing climate-related science in the US is really scary. There is so much uncertainty. I think people are trying to keep their heads down and keep their research going as much as they can until they see what is going to happen.”



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Batterman works closely with scientists at the Smithsonian Tropical Research Institute, a US government laboratory in Panama, and is concerned about whether its funding will continue. “My research wouldn't be possible without the Smithsonian facilities. So for me this isn't just something that is happening at a distance,” she explains.

For Prof Rosalind Cornforth, director of the Walker Institute at Reading University, the anxiety about the US pulling the plug on climate science is somewhat different. Her institute works with governments and scientists in some of the world's most fragile, conflict-affected countries, applying climate science to solve real-world problems.

“So many of our fellow climate scientists from developing countries rely on access to climate data sets available in the US,” she says. “If these become restricted in the future, there would be repercussions on vital capacity development for places like Africa.”

There is one potential silver lining for UK universities in this cloud of uncertainty. Vice-chancellors at some leading universities said last week they hoped to be able to woo some big-name climate scientists from across the Atlantic.

Forster, whose institute is only a year old and is recruiting staff, says: “I have just got back from a trip to America to talk to people. Many scientists think it is too early to leave. They don't know quite what Trump will do, and there is even some optimism that perhaps he won't survive a four-year term. But they are definitely interested in talking to us about possibilities.”

Prof Paul Ekins, director of University College London's Institute for Sustainable Resources, says many climate scientists may feel forced to leave the US if conditions worsen. “If you are in a science field that depends on expensive equipment, like climate science research from space, and you can't get that kit because the funding dries up, you can't do anything. This is applied, practical work trying to understand what is happening to the climate. US scientists may well hope that things will change with the future administration, but they may not want to write off four to eight years of their productive lives.”

However, some climate scientists point out that with Brexit looming Britain may struggle to present itself as a place of calm and stability from which to escape Trump. Batterman says: “I think early career researchers who are looking for jobs may be considering options abroad. But there is also a lot of uncertainty in the UK too, because we don't know what is going to happen with funding after the UK leaves the EU.”



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