

'Dark Ages' ahead for US scientists?

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There is growing concern among scientists in the United States that dark days lie ahead. The country's new government, led by President Donald Trump, has already issued gag orders on scientists, restricted access to scientific conferences and censored the websites and social media accounts of some government agencies. There are fears that cuts to research budgets won't be far behind. Some US advocates for science have wasted no time on making a stand, recently holding a ["Stand up for Science" protest rally](#) in Boston.

"Science and scientists are under attack from the Trump administration and its allies in Congress," said Amanda Mourant, campaign manager for Climate-Truth.org, an advocacy organization that helped organize the protest in Boston.

The areas of science most at risk, according to Mourant, are those that protect the health of communities, ensure the safety of families and safeguard the envi-

ronment. The future of several programs and agencies are in question, which could have effects on the monitoring of climate change and on air and water pollution. "The administration has put a climate denier with close ties to the fossil fuel industry in charge of the US Environmental Protection Agency, muzzled scientists and government agencies, and begun to roll back environmental protections that protect the health and safety of the American people," said Mourant.

The problems facing US scientists probably sound familiar to many scientists employed by the federal government in Canada. Under the previous Conservative federal government, scientists faced similar restrictions and cutbacks, which eventually led to protests and mock funerals that lamented the "Death of Evidence" in Canada.

"The new US government levied gag restrictions on US government scientists much faster than did former Canadian

Prime Minister Stephen Harper, with his slower, more insidious approach," said Steven Campana, a biologist in Iceland who used to work for Fisheries and Oceans Canada. "This has me quite concerned for the scientific well-being of my American colleagues, who may be headed for a mini 'Dark Ages'."

In Canada, under the Harper government, there was a steady erosion of scientific integrity, according to Debi Daviau, president of Professional Institute of the Public Service of Canada, a federal union with more than 57 000 members, including scientists. There were funding cuts to research projects, particularly in the areas of climate change and environmental sciences. Science libraries were closed, focus shifted from fundamental science to market-oriented research, communication of federal research was restricted and the office of the chief scientific officer was closed, he explained.

"We learned an important lesson that you need to raise public awareness early on," said Daviau. "These activities began slowly, and while our scientists were raising the red flag early on, it took the public a while to realize what was really at stake. Given all the controversial policies that the Trump administration is implementing, the public might become desensitized and attacks on scientific integrity can go under the radar. That's why it's so important that American scientists are organizing marches and communicating their concerns in these early days."

The challenges in the US should be cause for concern for scientists everywhere, according to Wendy Palen, chair of the board of directors for Evidence for Democracy, a nonpartisan organization promoting the use of evidence by Canadian governments. Science is an international endeavor, said Palen. Scientists collaborate with their peers in other



There is growing concern about the integrity of science in a US under Trump.

countries, review each other's research and build upon advances already made around the world.

"That dependency and diversity is also a key part of our strength, and in the face of censorship or political meddling, we each have an important role to play for our colleagues and our community," said Palen, an associate professor of biology at Simon Fraser University in British Columbia.

Scientists outside the US can help their American colleagues in several ways, said Palen. They can provide repositories for data, for example, or petition scientific societies to play leadership roles in cataloguing cases of scientists who are forbidden from speaking with the media or attending conferences.

"And lastly, I'd say that what's happening in the US is an important reminder

to those of us in Canada to not become complacent," said Palen. "We need to speak up and advocate for better policies that will protect scientific integrity here at home, regardless of who is in power. The Canadian federal government has made many advances during the previous year, but we have a long way to go."

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