



As a meteorologist, Kelvin Droegemeier specialized in the study of extreme weather events.

Q&A Kelvin Droegemeier

Science in the Trump White House

The US government's top scientist on research ethics, immigration and presidential tweets.

BY SARA REARDON

STEPHEN VOSS

When meteorologist Kelvin Droegemeier was sworn in as director of the White House Office of Science and Technology Policy (OSTP) in February, he inherited an office that had been without a leader for two years — and became President Donald Trump's top science adviser.

Trump's push to cut government spending on research, and his policies on issues such as immigration, have caused controversy in science. *Nature* spoke to Droegemeier in mid-April — two months into his tenure — about these policies, his plans and what it's like to work with the president.

The number of OSTP staff dropped precipitously during Trump's first two years in office. What is the situation now?

The lights were definitely on, and there was a lot of work actually getting done. We have people cycle through. Some of them are on detail for a year, so there's kind of a constant refresh. I have brought additional people on board in

some of the areas that I'm going to be working on a little bit more.

I'll be bringing somebody on in a position I'm calling assistant director for academic engagement. And there have been some other folks that have been brought in, in space weather as an example. At last count, we had about 68 people overall, which is roughly the average for OSTP over the years. It's not at all the case that, with me coming, we somehow staffed up.

What issues will the academic-engagement position address?

One piece is the research administrative burden. The word 'burden' is a little bit of a misnomer. Some of these things, like human-subjects-research protections and animal research, are very important and necessary. Nobody argues that point.

There are other compliance activities, though, that have been shown to have very little impact. For example, the lack of harmonization in things like the forms that faculty fill out when they apply for grants, or the curriculum vitae information they submit.

The fact that there are different forms and structures across agencies means that they spend a lot of time reformatting something.

What other topics is your office working on?

One is what I call safe and productive research environments. A dimension of that is sexual harassment, but that's one of many. If we're going to improve and enhance diversity, we have to have research environments that are welcoming and accommodating to everyone. We want to make sure that those environments do not disadvantage particular people, keep them out, or cause them to leave once they're there.

Another one is integrity in research and trustworthiness — it's very, very important. One of the things I like to tout about our research enterprise is that it's underpinned by American values. We want to make sure that all the research is being conducted with integrity, and that we're training students and faculty and making sure that they behave ethically.

We've also talked a lot about what I would call research security: balancing openness of our research environment with the very real threat that exists, in some cases, of theft of intellectual property, espionage and things like that.

I've seen a great change in universities in the last couple of years, where I think researchers realize this is real. But we can't overreact.

Has the president called on your expertise as science adviser, or included the OSTP in policy discussions?

I'm still pretty new here. I think people are still getting to know me, but certainly I'm available to the president. I have had lots of conversations with folks, and I have met with the president and also with the vice-president. I accompanied him to the space-council meeting in Huntsville [Alabama] a few weeks ago.

We make sure that, for anything that has science as a dimension in policy, science is at the table. I frankly haven't seen any situation where science can't contribute or where we have been left out. We're always brought to the table as a partner.

For three years in a row, the president has proposed massive cuts to many science agencies' budgets. How does that square with your belief that the White House wants to promote science?

When I came in, the 2020 budget was already done. But I think that we have to prioritize and we also have to partner. If you look only at the federal budget, you're missing the bigger picture of the private sector and the research that they do — where a very substantial amount of it is basic research — and the private foundations that do a great deal of research, and then our own universities that fund 25% of all the research that they do.

Are you concerned that Trump's strict immigration policies could discourage



► **foreign students and scientists from coming to the United States?**

Certainly, to have a robust and successful scientific enterprise you need students — you need good students, you need lots of students, you need students from diverse backgrounds, diverse points of view and so on.

I've not talked to one individual who says, "You know, I want an illegal immigrant in my laboratory." We want people who are here legally. Research is about complying.

I think it's very, very important that we are open and welcoming to individuals who share

our values, who come from other countries. At the same time, we want to make sure that we're bringing in a lot of Americans.

But even if students are exempted from policies such as the travel ban against citizens of several majority-Muslim countries, these moves are still spreading fear and uncertainty. There are perceptions out there of certain things and then there are realities. The reality is the president reversed the H-1B visa process where we could get many, many more people coming into the MS and

PhD fields. I thought that was fantastic.

Does it make your job as science adviser harder when Trump tweets and talks about things such as windmill noise causing cancer?

I think the president tweets what he tweets, and as president that's his thing. I think sometimes, you know, he does things in a way that he's joking around and people don't maybe realize that. I don't know. ■

This interview has been edited for length and clarity.

IMMUNOTHERAPY

Chinese hospitals set to sell experimental cell therapies

But some scientists are concerned that the draft regulation will endanger patients.

BY DAVID CYRANOSKI

Select elite hospitals in China could soon be able to sell experimental therapies that engineer a person's own cells to treat diseases such as cancer — without approval from the nation's drug regulator. The proposal comes three years after the government shut down the sale of unapproved cell therapies following the death of a student who had received such a treatment.

The draft policy has prompted mixed responses. Some scientists say that it would give people with terminal illnesses faster access to potentially effective treatments, and that the measures would protect patients from dangerous therapies. But others question whether the regulations do enough to ensure that the treatments are safe and effective before they are sold.

In many countries, the use of cell therapies — treatments made from human cells, often from the immune system — requires approval from drug regulators, which means rigorous, costly and time-consuming clinical trials to show that they are safe and effective. Some countries have policies, such as Australia's Special Access Scheme, that allow doctors to administer unapproved cell therapies under special conditions — for example, if a patient is terminally ill.

But those are rarely used and are offered at no cost to the patient, says Rajiv Khanna, a cancer immunologist at QIMR Berghofer Medical Research Institute in Brisbane, Australia. "I am not aware of any regulatory system where top hospitals can offer cellular therapies for commercial gain on their own discretion," he says.

Under China's draft policy, which the health

ministry released in March, select hospitals would be allowed to sell these therapies without testing them in large numbers of people. The proposal is expected to come into effect within the next few months.

"The regulation will promote innovation and industry in cell therapy, which will eventually benefit patients," says cancer immunologist Ma Jie, director of the bio-therapy centre at Beijing Hospital.

Bruce Levine, a cancer researcher at the

University of Pennsylvania in Philadelphia, says the proposed regulations are a step in the right direction, but he questions whether these select hospitals are prepared for the potential dangers of cell therapies.

One type of cell therapy that has drawn a lot of attention lately is immunotherapy, in which immune cells are engineered, often to target cancerous cells that otherwise evade the body's defence system. These have helped some people to make surprising recoveries.

LOU LINWEI/ALAMY



Access to cell therapies in China has been restricted since 2016.