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Kirsty Duncan was first elected to Canada's Parliament in 2008.

POLITICS

# Canada's top scientist faces tough challenge

*Researchers have big hopes for Kirsty Duncan, the country's newly appointed scientist-turned-science minister.*

BY NICOLA JONES

Kirsty Duncan, the medical geographer who last month became Canada's first Minister of Science, has a big mandate: to ensure that scientific considerations again figure into public-policy decisions.

Duncan, appointed by newly elected Prime Minister Justin Trudeau, inherits a research community bruised by years of cuts to science programmes and research jobs under former prime minister Stephen Harper. Harper's government also famously muzzled government researchers. But change is in the air.

On 5 November, Trudeau's government reinstated the mandatory long-form census, to cheers from social scientists, and on 6 November, it decreed that federal scientists could again speak freely to the media and to the public.

Yet these splashy announcements came not from Duncan, but from Navdeep Bains, the Minister of Innovation, Science and Economic Development. Duncan has harder tasks ahead, says Paul Dufour, a science-policy analyst at the University of Ottawa. She has been asked to shoulder the burden of shoring up Canada's science enterprise; this includes steps such as reforming the country's weakened environmental-assessment process and making basic research a higher funding priority.

But it is not clear whether she will have the power to make such changes. Canada's science ministers have historically operated with minimal budgets, and sometimes as junior ministers. Duncan's clout will not be put to the test until Trudeau releases his first federal budget in February. "She's a great person for the job, but is it window dressing?" says Kennedy Stewart, who tracks science issues for the New Democratic Party, the left-wing opposition to Duncan and Trudeau's middle-left Liberal party. "The budget will tell."

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In Canada, where ministers are chosen from among elected members of parliament, it is rare to see higher degrees in fields other than law or medicine. Trudeau's cabinet is a notable exception: Duncan, who earned a PhD in geography in 1992 at the University of Edinburgh, UK, is one of a small group of ministers with doctoral degrees in economics, sociology or engineering.

Duncan is perhaps best known for leading an expedition to Norway in 1998, prompted by her interest in pandemics. Then at Canada's University of Windsor, she suspected that traces of the deadly 1918 Spanish flu virus might be preserved in the bodies of victims who were buried in permafrost.

Although the expedition did not yield any flu samples, team member Robert Webster, a pandemic virologist at St Jude Children's Research Hospital in Memphis, Tennessee, remains impressed by Duncan's organizational acumen. "She was smart enough to contact the leaders in the field," he says. "She got the heavies. She raised the funds."

Economist Paul Kovacs, who worked with Duncan on a chapter of the Intergovernmental Panel on Climate Change's 2001 report, makes a similar assessment. Kovacs, executive director of the Institute for Catastrophic Loss Reduction at the University of Western Ontario in London, Canada, describes her as dedicated, determined and skilled at probing the scientific literature to work out "what was really new and what you could do about it".

## TRIAL TRIBULATIONS

But Duncan's political career, which began in 2008, has not been without controversy. Between 2012 and 2014 she introduced seven pieces of legislation, all related to neurological health. Two bills called for clinical trials of controversial treatments for multiple sclerosis; these were based on the work of Paolo Zamboni, an Italian physician who suggested that a circulatory condition called chronic cerebrospinal venous insufficiency was linked to the neurological disorder. Duncan's bills came after several studies failed to find evidence for Zamboni's claims, and concluded that the therapy was too expensive and risky for further trials.

But Duncan defends the legislation, saying that she wanted to encourage research on the brain. "In science we ask the questions. I asked a question: would the government look at the science?" she says.

In the long term, Duncan will work to improve Canada's science capacity — in part by establishing high-profile professorships in sustainable technologies. According to the United Nations, the country is one of only a few advanced economies whose total spending on research and development has declined relative to its gross domestic product.

Observers are keen to see what Duncan can achieve. "She's certainly got her hands full with limited resources," Dufour says.

For now, Duncan is focused on establishing the post of chief science officer, to replace the national science adviser role that Harper eliminated in 2008. Physicist Ted Hsu, the Liberal party's former science spokesperson, says that this will take some thought. "She needs to set up something that's so good, it will survive a change of government in future."

Duncan is happy to go slowly to work out the best system. "We want to get this right," she says. ■