



## Commentary

# A Unique Opportunity for Canadian Science Next to Trump's USA

Matthew Dankner<sup>1</sup>, Ariel Chackowicz<sup>1</sup>  
MJM 2017 15(9)

The election of Donald Trump as President of the United States on November 8 2016 triggered a feeling of panic across the scientific community given the newfound uncertainty surrounding the fate of the scientific profession in both the U.S. and abroad. On March 16 2017, these fears were further vindicated by the release of 'America First', the fiscal year (2018) budget blueprint, by the White House. As anticipated, the real losers of the newly proposed budget are the National Health Institute (NIH) and Environmental Protection Agency (EPA) whose funding would be cut by 18% and 31%, respectively (1). In effect, scientists in Canada, as well as worldwide, must brace themselves for the significant challenges that lie

ahead in the context of this shift in research priorities away from environmental and biomedical sciences.

While the U.S. government has framed issues of national and international security in terms of immigration and defense spending, they have omitted the imminent challenges posed by infectious disease, climate change and sustainable energy production (1). As scientific research is needed to address the latter, we believe that it is ever more critical for Canada to fill this void and step forward as a leader in international scientific initiatives with the U.S. abandoning its previous leadership position in scientific research.

---

<sup>1</sup>Faculty of Medicine, McGill University, Montréal, Canada.  
Corresponding Author: Matthew Dankner, email [matthew.dankner@mail.mcgill.ca](mailto:matthew.dankner@mail.mcgill.ca).

President Trump has claimed that climate change is a hoax, and has threatened to remove the United States from the newly developed Paris Agreement on carbon emissions (2). In addition, Mike Pence, the Vice President of the U.S., is a staunch creationist who opposes stem cell research. It is therefore plausible that the executive order put in place by President Obama in 2009 will be abolished, halting federal government funding for scientists creating new lines of embryonic stem cells (3), and thereby reverting stem cell research back into the 'taboo' state in which it was trapped during the George W. Bush administration.

The fate of the "Cancer Moonshot" initiative – a drive to conquer cancer championed by former Vice President Joe Biden – also becomes unclear in a Trump administration (4). While a Hillary Clinton presidency would surely have supported these efforts, the same may not be true in Trump's America, as the 'America First' budget blueprint raises doubts that these efforts will be supported. On one hand, Trump believes that the worldwide leadership funded by America could instead be taken on by other countries. While on the other hand, Trump's administration may choose to support Biden's initiative in an effort towards bipartisanship and common ground between the Democrats and the Republicans.

Trump's Presidency represents both a unique opportunity and an immense challenge for Canadian science. Canadian leadership tends to overwhelmingly disagree with Trump's rhetoric, as well as with many of his domestic and foreign policies. Given this stark shift in political climate, strong Canadian scientists who may have otherwise moved South to work in what has traditionally been a more favourable funding climate may now opt to stay in Canada. Similarly, Canadian scientists working in the United States may choose to return home, and American scientists may be tempted to flee Trump's America, in response to a new political reality that not only threatens the advancement of science, but also belittles its role in social progress. This will likely apply particularly to foreign scientists working in the United States or abroad who are concerned with Trump's views and policies on immigration from Mexico or the Middle East.

At first glance, a potential increase in the number of quality scientists working in Canada is alluring. However, such a situation may cause more harm than good given Canada's already stressed funding climate (5). The Canadian Institutes of Health Research

announced a success rate of thirteen percent in their most recent Foundation and Project Grant competition making it clear that there are already too few dollars to go around (6). An influx of new and stronger scientists would only make it more challenging for scientists already working in Canada to obtain the funding needed to support their work. In addition, such an influx may leave emerging researchers stranded in an already difficult job market. Should the impending American "brain drain" to Canada occur, an immediate influx of funding to support the growth of Canadian science would be required for our country to elevate its status as a world leader in science. For this reason, we call on the Canadian government to follow through on campaign promises made by Prime Minister Trudeau to restore funding cut by the Conservative government and to comply with scientists' requests for funding reforms. As of 2014, Canada has spent 1.6% of its gross domestic product on research, placing it as 23rd worldwide (7). This can certainly be improved upon, in the event of a potential influx of quality scientists to Canada and the need for a strong leader in climate change initiatives.

We believe that the fate of Canadian science stands at a historic crossroads. The integrity of science has been threatened, and the spectre of climate change looms more than ever. These challenges transcend borders, and are intrinsically tied to the future of our nation. Much like science has time and time again helped move our great nation forward, it is time for Canada to move science forward. Let us now put our money where our mouth is.

## References

1. Reardon S, Tollefson J, Witze A, Ross E. US science agencies face deep cuts in Trump budget. *Nature*. 2017;543(7646):471-2.
2. Tollefson J. Trump vs Clinton: worlds apart on science. *Nature*. 2016;535(7613):473-4.
3. Hayden EC. Obama overturns stem-cell ban. *Nature*. 2009;458(7235):130-1.
4. US Cancer Moonshot must strike a balance between research and prevention. *Nature*. 2016;539(7630):467.
5. Reardon S. Canadians balk at reforms to health-research agency. *Nature*. 2015;520(7547):272-3.
6. 2016 Foundation Grant and Project Grant results: CIHR; 2016 [Available from: <http://www.cihr-irsc.gc.ca/e/49855.html>].
7. Research and development expenditure (% of GDP) [Available from: <http://data.worldbank.org/indicator/GB.XPD.RSDV.GD.ZS>].