

The Future of Health Research in Canada

JUNE 5, 2019



Calling for Recognition, Better Funding and Career Training: The Canadian Doctoral and Post-Doctoral Experience *Panel Presentation Proceedings*

Wednesday, June 5, 2019
10:00 a.m. – 11:50 a.m.
Sir John A. Macdonald Building
Ottawa, Ontario

- Chair:** **Dr. Ryan Wiley**
Policy Advisor and Past Chair, Research Canada
President, Shift Health
- Panelists:** **Dr. Tina Grusso**
Scientist Translational Research, Forbuis
President, Science & Policy Exchange
- Dr. Joseph Sparling**
Executive Director and Interim Past Chair,
Canadian Association of Postdoctoral Scholars (CAPS/ACSP)
- Dr. Jennifer Polk**
Co-Founder, Beyond the Professoriate

Post-docs are at a stage in life when settling, down, buying houses, starting families and saving for retirement is the norm; however, the current situation for post-docs makes this extremely difficult. How do we rectify this situation for our post-doc scholars?

The Canadian Association of Post-Doctoral Scholars (CAPS) conducts regular national surveys to monitor Canada's doctoral and post-doctoral system. These surveys offer valuable insights into the current state of this system and what can be done to address its challenges. According to the most recent survey in 2016, the average post-doc working in Canada today is 34 years old, married and has a median gross income of \$42,500, which is half that of their average PhD peer who entered the workforce. Additionally, graduate students are taking increasingly more time to complete their PhDs, meaning that post-docs are older when they start their careers, and the average post-doc never recuperates financially. These national surveys consistently find that Canada's doctoral and post-doctoral system is very disjointed, causing disparity between post-



docs and PhD graduates, but also between post-docs who receive direct funding and those who do not.

One possible step toward rectifying this situation is to ensure all post-docs have access to workplace benefits and employment insurance. Although post-docs in Ontario and Québec have begun unionizing to ensure access to these benefits, disparity in employment status means that post-docs across Canada are frequently unable to access the workplace benefits typically available to their working PhD graduate counterparts. Trainees who are funded internally by their institutions are considered employees and therefore able to access workplace benefits and employment insurance, whereas those who are funded externally through direct project funding are not afforded employee status. Granting all post-docs employee status and collective bargaining rights, as well as encouraging funding agencies to endorse minimum standards for funded post-docs is essential to addressing this challenge.

It is also necessary to address the academic community's definition of research excellence and broaden post-docs' understanding of the career paths available to them. The academic community, including post-docs, typically define success as achieving an academic tenure track career above other career paths, but this fails to see the bigger picture of science in society. However, the vast majority of post-docs do not actually achieve tenure and as a result, they are often left feeling like failures. To help shift this limited view of the career paths available to graduates, we need to broaden the spectrum of skills developed through these programs. Career counselling and the development of networking skills are also crucially important. All sectors benefit from the pool of highly qualified persons developed by PhD and post-doc programs, and networking in a broad sense is a crucial skill for building successful careers, especially outside of academia.

The Government of Canada's investments in fellowships and scholarships in Budget 2019 was welcome, but at the same time these investments are not keeping up with the rise in graduate and student enrolment over the last decade. What are the major findings of Science & Policy Exchange's recent survey of graduates on the current tri-agency awards system, and what is the impact on Indigenous, female and minority group scholars, in particular?

The Science & Policy Exchange recently conducted a survey of 1,100 current and recent graduates from over 50 universities and institutes, both across Canada and internationally to poll their perspectives on the current tri-agency awards system. This survey found that Canadian graduates particularly value the scholarships and fellowships programs offered through the granting councils. In particular, nearly all respondents (98%) saw value in obtaining direct federal awards over receiving indirect support via their supervisor's research grants, and, 63% believe that the elite Vanier Scholarship and Banting Fellowships should be reduced or abolished in favour of other direct awards.

However, despite the value of these awards for Canada's graduate students and post-doctoral fellows, the current federal award system still fails to offer sufficient support, with 91% of respondents who believe that an increase in the number and value of federal awards is necessary.



While Budget 2019 did include some increased funding for fellowships and scholarships, the value was insufficient for the system's needs and it failed to include post-docs as the beneficiaries of this investment. Moreover, of those who were able to obtain federal funding, 66% required additional funds to cover their expenses over the course of their program. In part, these challenges stem from a lack of clarity regarding the purpose of the federal funding. Fellowships, for example, are generally seen as a full ride by the universities, while the granting councils see this as assistance *in addition* to support provided by the institution. Minimum standards set or endorsed by the granting councils would help in addressing this discrepancy.

Marginalized groups, including women, Indigenous and minority scholars, and international students, experience more intersectionalities than most groups that add to and further enhance the unique challenges already facing post-docs as a group. International students, for example, are often discouraged to apply for CIHR grants under the assumption that they will not be successful, even though CIHR has no policies in place that exclude international students from access to funding or that discourage international students to apply. Unsurprisingly then, 70% of international students surveyed reported that they found it difficult or very difficult to find funding in Canada. Additionally, although most post-docs do not end up in academic tenure careers, successfully transitioning to careers outside of academia is especially difficult for marginalized groups and only becomes increasingly difficult the longer they stay in academia. However, supporting doctoral students and post-doctoral scholars generally through increased financial support and other actions such as ensuring access to workplace benefits can help and is, indeed, essential to improving equity, diversity and inclusion. The Science & Policy Exchange, for example, found that women perceived a 5-10% greater benefit from direct funding than men across all questions. Marginalized and EDI-seeking groups are the ones who want more outreach support and value the societal impact of science. Therefore, they can effectively capitalize on these supports.

PhD programs and post-doctoral positions equip students with the skills to fill or create the jobs of tomorrow. At the same time, new policies in support of work-integrated learning are required to support these highly qualified young people, many of whom will find themselves in jobs outside of academe. What role does the Government of Canada, academe and our health and biosciences industries have to play to help the nation's most academically-gifted young people prepare for work inside or outside academe?

PhDs' career paths are connected to their schooling in various degrees, and most do not end up in careers that are directly connected to their training (i.e. academic tenure). As a result, we need diverse skills training for everyone. While it generally avoids the language of "skills," PhD and post-doc programs already include academic skills training such as research skills and lab administration but fail to include others, such as leadership and networking skills, that are often seen as "distractions" within the academic culture but are what ultimately get people hired. Addressing these challenges requires a cultural shift in mentality that sees the value in these skills and career paths outside of academia. Regarding post-docs specifically, we need to recognize the value of post-doctoral training *in addition to* PhD programs, which hones the skills developed



during the course of a PhD, but post-docs, as members of the academic culture, must also be able to change their own mindsets.

Canada's health and biosciences industries must also be willing to take a chance on people, understanding that while they may need some workplace guidance at the start, PhD graduates will advance quickly in their careers. At the same time, graduates must also recognize the value in starting in an entry-level position rather than jumping straight into a leadership role.

Since federal support for PhD students and post-docs is delivered through academia, the funding agencies must take strong action to ensure that any changes to the federal funding system have a lasting impact on Canadian students and post-docs. However, the government must also carefully consider the implications of its funding decisions, taking into consideration who federal awards benefit; how, if at all, grant recipients are monitored; and whether principle investigators' federal funding is judged on the career paths of their trainees. Should we rethink the term "trainee" altogether, which implies that they are training *for* something? Does funding simply extend the inevitable of reaching the end of their careers in academia?

If there is one thing we could do now to improve the situation for doctoral and post-doctoral trainees in Canada, what would it be?

Dr. Grusso: focus on showing the value of the next generation of researchers and innovators and the recognition that direct funding will offer them.

Dr. Sparling: develop a single, uniform policy that defines what a "post-doc" is and addresses the issues of minimum standards and employee vs. trainee status.

Dr. Polk: encourage trainees to get outside of their institutions to learn and know more about their own personal careers and skills.

Other Key Insights from Audience Questions:

- CIHR is aligned with the panelists' discussion, with trainees being a top priority for the funding agency. Current federal awards are focused on supporting interdisciplinary and intersectoral research, and CIHR is taking an EDI lens with all of their programs and policies. Other concerns, such as those regarding the Vanier and Banting awards, have been heard and are being considered by CIHR's leadership.
- Mitacs helps to build relationships that connect trainees with companies that help them gain work experience outside of academia, which in turn helps trainees to realize what skills they already have and how to apply them to non-academic pursuits. The demand for PhD graduates and post-docs is growing within industry, and increasingly, these Mitacs fellowships are sparking entrepreneurships as they move forward in their careers outside of academia.



- There are many ways that principle investigators can support post-docs beyond their academic mentorship. This includes bringing up the conversation about careers and network development, and encouraging time away from the lab to explore and develop these skills. These experiences are vital to helping post-docs understand how to use their skills outside of academia.
- Recognizing the post-doc's role in principle investigators' published research provides post-docs with exposure that will help them in their careers and provides them with a sense of pride in their work.
- Funding agencies need to be clearer about what the funding is meant to do – support the research or support the person?
- Scholars should be careful not to rely solely on publications to get their messages across. It is at Canada's advantage to focus on individuals and how science is integrated into society.

