

How Canada can attract international talent and improve knowledge exchange

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A long-term commitment to sustaining a highly diverse talent pool is the cornerstone of robust economic and social policies.

By CATARINA FERREIRA & CORNELYA KLÜTSCH | JUL 16 2018

The “[talent economy](#),” consisting of highly skilled personnel from the science, technology, engineering and mathematics (STEM) fields, is the linchpin of a productive society and economy. Maintaining knowledge-sharing in these fields relies on training, retaining and attracting global talent. It also requires encouraging international and inter-sectorial experiences (i.e., within academia, governments, industry and NGOs) for domestic and foreign researchers –otherwise known as “[brain circulation](#)” [PDF]. Indeed, international and inter-sectorial mobility should be a part of career development for scientists to become leaders in increasingly multi- and interdisciplinary professional environments.

Canada faces multiple challenges to sustain a well-rounded talent pool due partially to a strong financial disinvestment in science over the last decade and to an aging population. While Canada trains a large number of international STEM students, there is still a general reluctance of domestic Canadian university students to study abroad and experience international settings, with [sobering implications](#) for Canada’s international reputation and national economy. For example, about 53 percent of biotechnology companies in Canada have reported [skill shortages](#) among R&D workers, of which interpersonal skills are ranked at the top, followed by business development and management/leadership skills.

To harness effectively recent federal financial investments in science that could increase brain circulation, it is important to understand key motivations and barriers for domestic scientists who are considering spending a part of their career abroad, or for international scientists coming to Canada to gain experience in different sectors. Finances, bureaucracy and family commitments are major barriers for researchers to gain international or inter-sectorial experience, as are career stage and gender (see [here](#), [here](#) and [here](#)). Overcoming these barriers will lead to a stronger, more diverse and inclusive talent pool better equipped to tackle global challenges, thereby ensuring Canada’s future economic and societal prosperity. Here, we present some strategic initiatives Canada should implement to support mobility of researchers between sectors and countries and nurture knowledge exchange.

Create opportunities for an inclusive and diverse talent pool

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- **Flexibility in recruitment at different career stages:** Recruitment of experienced researchers brings knowledge and leadership, while that of early-career researchers adds highly-driven innovative personnel. Despite being designed to target different career stages, the Canada Research Chair program typically attracts higher-level researchers. Moreover, minority and early-career researchers face specific challenges because of intersectionality and short-term appointments that challenge their long-term prospects in science and opportunities for inter-sectorial experiences. Scandinavia and the post-Brexit U.K. have commissioned studies to characterize their research communities and understand the motivations and barriers for individual mobility. To the best of our knowledge, such a study is not available for Canada, which hampers the design of tailored policy initiatives that ensure adequate investments are made for each career stage.
 - **Family matters:** For researchers with families, major considerations that underpin their decision to leave their country of origin are the provision of spousal support or of salaries compatible with supporting a family, and concerns of how mobility will affect the partner's career. Regarding international mobility, moving costs or expenses associated with maintaining two households in case the family stays in the country of origin are important factors. Some funding agencies, for example in Sweden, offer researchers spousal support and moving-cost allowances. In other countries, negotiating positions for the partner as part of the recruitment package is becoming standard. These incentives need to be systematically built into Canadian funding schemes to convince top talent to move to Canada.
 - **Virtual mobility to increase minorities' international mobility:** Some researchers do not have the opportunity or financial means to go abroad. Sweden's Global Links for Strong Research and Innovation Milieus and Finland's MOTIVE program with China have pioneered the introduction of pilot programs that are entirely based in the virtual world to aid in connecting scientists globally. These programs favour minority groups in particular, making them critical in promoting diversity and providing exemplary frameworks that could be easily implemented by the Canadian government and funding agencies.
 - **Inter-sectorial mobility to support interdisciplinary expertise:** Programs that support cross-sectorial experiences at any career stage will expose scientists to diverse and global situations, thereby promoting their leadership, creativity and adaptability skills which are crucial to drive research and innovation. Canada's Industrial Research Chair Program is a good first step in this direction, although it excludes explicitly early-career scientists. Thus, programs encouraging work across sectors are highly warranted.

Break institutional barriers and bureaucracy

- **Bureaucracy related to immigration procedures:** While acknowledging Canada's Herculean efforts to expedite immigration procedures, we as highly skilled immigrant workers have personally experienced repeated delays and changes within these processes that often made us question our decision to stay in Canada. International

researchers are clearly disadvantaged by these procedures, which are incredibly time-consuming, bureaucratic and expensive, with the aggravating circumstance that many positions (e.g., for the provincial and federal governments) prioritize Canadian citizens and permanent-resident holders. Therefore, promoting brain circulation will require the relaxation of some eligibility criteria, which will increase transparency so that international researchers can make informed decisions about their real career prospects in Canada.

- **Institutional support for international and inter-sectorial mobility and knowledge exchange:** Most universities lack adequate knowledge, resources and infrastructure to support foreign postgraduates or scientists with the sorts of transitions that promote knowledge exchange and transfer. By providing training to research offices at universities or appointing liaison staff who specialize in dealing with the idiosyncrasies of integrating foreign researchers (similar to the support given to undergraduate and graduate students), Canadian universities can be conduits for developing relevant skill sets and serve as networking hubs connecting different sectors for resident and foreign researchers. Scientific diasporas can provide additional opportunities for networking and mentoring, but to our knowledge there is not an organized network of scientific diasporas in STEM fields in Canada. Furthermore, academic researchers who have ventured into other sectors may face opposition to returning to the university system, due to a halted publication record and an underappreciation for these inter-sectorial experiences. This is ill-fated because STEM fields usually benefit from collaboration with other sectors to develop start-ups (e.g., in biotechnology and medicine). Therefore, institutions responsible for knowledge production need to be more flexible to accommodate inter-sectorial and international experiences and value them in their evaluation processes for career advancement.

A long-term commitment to sustaining a highly diverse talent pool is the cornerstone of robust economic and social policies, thus inclusion of diverse talent must become a strategic priority in Canada. In a world that is increasingly interrelated and competes for the same global talent pool, this is the only way forward for Canada to support its competitiveness in a global market.

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