

Pre-Budget Brief  
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## **Executive Summary**

Postdoctoral fellows are significant contributors to the Canadian economy. Data obtained from the Canadian Association of Postdoctoral Scholars (CAPS)- l'Association Canadienne des Stagiaires Postdoctoraux (ACSP) from national surveys conducted in 2009, 2013 and 2016 reports that the population of postdoctoral fellows is changing. For example, postdoctoral fellows are older and fellows working in Canada have the lowest salaries when compared to countries like the US and UK. Additionally, the number of international postdocs working in Canada have decreased since 2009. Postdoctoral fellows need to be supported and given the resources so that they continue their training in Canada.

## **Introduction**

A postdoctoral fellow is defined as “an individual holding a recently completed research doctoral degree (or medical professional equivalent) in a temporary period of mentored research or scholarly training” (Mitchell et al., 2013). A key goal of postdoctoral work is to acquire competencies for undertaking intensive independent research. Postdoctoral fellows are major contributors and important component to research, innovation, arts, culture, and policymaking in Canada and throughout the world (Edge and Munro, 2015; Igami et al., 2015). They contribute disproportionately to research productivity (Vogel, 1999; Black and Stephan, 2010; L’Acfas, 2014). They are often the individuals providing day-to-day supervision and mentorship of undergraduate and graduate students. Because postdoctoral scholarship is typically a highly mobile period, postdocs are a key vector in knowledge transmission and the establishment of collaborative research networks (Black and Stephan, 2010). Most importantly, postdoctoral appointments are the platform from which new researchers embark on independent careers (Davis, 2009).

Traditionally, postdoctoral appointments have been viewed as short-term positions intended to bridge the gap between completion of a PhD and employment as a university professor. This perception is no longer accurate. The gap between completing graduate school to obtaining employment as a university professor has lengthened (Jadavji et al., 2016; Mitchell et al., 2013; Stanford et al., 2009). As the production of new doctoral graduates has far outpaced universities' needs for new faculty, it is estimated that only 20% of doctoral graduates will obtain a faculty position (Fuhrmann et al., 2011; Maldonado et al., 2013; McKenzie, 2007; Powell, 2012). The demographic make-up of postdoc populations has also changed (Jadavji et al., 2016; Mitchell et al., 2013; Offord, 2017; Stanford et al., 2009). For these reasons, it is essential that institutions develop guidelines for postdoc administration and training. However, there is minimal information on the postdoc population as historically this was a very short training period (1-2 years). Therefore, in 2009, 2013 and 2016 CAPS-ACSP conducted national surveys of postdoctoral fellows working in Canada to define the population. The changes in Canada parallel the changes observed worldwide. The aim of this paper is to outline the changes in the postdoc population working in Canada from 2009 to 2016 using the data collected from the 2009, 2013 and 2016 CAPS-ACSP national postdoc surveys.

## **Survey Methodology**

CAPS-ACSP recruited postdoctoral fellows working in Canada to complete the 2009, 2013 and 2016 national survey's. The population of survey respondents included Canadian citizens, permanent residents, and international postdoctoral fellows all working in Canada. Canadian citizens working outside of Canada were also permitted to participate in the national survey's.

### *Age Trend of Postdocs in Canada*

The percentage of postdoctoral fellows in the two youngest categories age 25 to 29 and age 30 to 34 years has decreased since 2009 (Figure 1). Meanwhile, 31% of current postdoctoral fellows are 35+ years old, and the proportion of postdoctoral fellows in this age group increased 8 percentage points when compared to the 2009 survey results. The results from 2009, 2013, and 2016 suggest a stable shift in the age distribution of Canadian postdoctoral fellows. A salient feature in the trend towards a maturing cohort of postdoctoral fellows is the dwindling size of the youngest age category.

Canadian postdoctoral fellows appear to experience the typical life events and concerns of any group in their mid to late thirties in Canada. It is likely that some begin their postdoctoral position with children and spouses, while others get married and have children during their appointment(s). As shown in Figure 2, fewer postdocs in 2016 are single or have never been married. The number of married postdocs in 2016 has increased from 2009, but the figure remains similar to that of 2013. The divorce/separated/widowed rate shows an increase from 2013 to 2016.

As shown in Figure 3, there are fewer postdoctoral fellows without children in 2016 as compared to 2009. The average age for the birth of a first child in Canada is about 28 years old (Canada, 2015). However, at 28 years of age, most respondents would have been completing their graduate studies, and may have postponed starting a family until an age somewhat older than the average Canadian. Therefore, for Canadian postdoctoral fellows, the co-occurrence of shifts in the distribution of postdoc age and more respondents with children is a logical phenomenon. The percentage of past postdoctoral fellows with dependents (47%), as compared to current postdocs in 2016 (31%; data not shown), shows that postdoctoral fellows are clearly interested in starting families but are waiting until later in their 30s.

A comparison of desired benefits (among those not already available) from the 2013 and the 2016 surveys suggests a maturing cohort, with needs that reflect typical family-related concerns. For example, there is a significant increase in desire for paid parental leave. Interest in paid parental leave increased from 16% (2013) to 19% (2016). In contrast, the desire for housing subsidies, and family health and life insurance decreased from 2013 to 2016.

### *International postdoctoral fellows working in Canada*

Since 2009 there has been a decrease in the number of international postdoctoral fellows working in Canada from 39% to 29% (Figure 5). In comparison, 56% of postdocs are considered “international” in the United States (Davis, 2005). Other countries may host fewer international postdocs, as does Holland (35%) (van der Weijden et al., 2016), the United Kingdom (14%, (Vitae, 2013), and Germany (10%, (Fitzenberger and Schulze, 2014). The highest proportion of international postdocs working in Canada are from France (14%), India (11%), and China (10%). Over two-fifths (43%) of international postdocs had moved to Canada between 2014 and 2016, while equal proportions arriving between 2011-2013 or prior to 2011 (29% and 29%).

Several concerns facing international postdocs are similar to those experienced by any newcomer to Canada, such as transitioning to a new country and learning either English or French. The 2016 Survey results suggest that over time, these challenges associated with adapting to a new country diminish compared to 2013 (Figure 6). However, obtaining postdoctoral funding, and Visa or work permits are complex procedures that international postdocs report as challenges years into their postdoctoral appointment. There is a trend that Visa and work permit problems are impacting an increasingly large number of international postdocs in Canada from 2013 to 2016. The

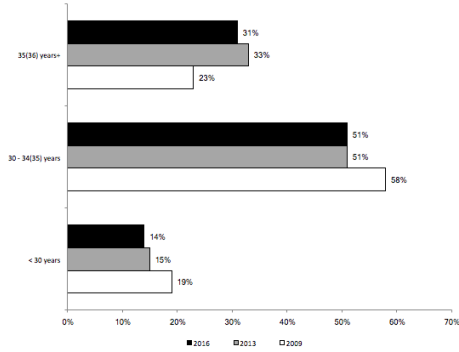
observation that international postdoctoral fellows from the 2016 Survey continue to experience problems in obtaining funding after three to five years in Canada may be reflective of the postdoc pile-up phenomenon where postdocs now routinely complete multiple postdocs before finding employment (Powell, 2014).

Despite Canada's well known cultural mosaic and anti-discrimination workplace policies, there are also a small number of open-ended comments by 2016 Survey respondents suggesting that unfair treatment of international postdoctoral fellows, based on race, may not be isolated incidents in the workplace. Cantwell and Lee (2010) explored the issue of neo racism and international postdoctoral fellows in the United States. They suggest that international postdoctoral fellows may be experiencing exploitation in the workplace because they are willing to work much longer hours and stay in lower paying jobs. The willingness to accept these working conditions may stem from high levels of gratitude for the opportunity to leave a home country for work in North America (Cantwell and Lee, 2010). Expressing concerns about working conditions can be difficult for postdoctoral fellows from Canada, who have a good command of the culture and language; therefore, speaking up about unfair workplace practices may be amplified for foreign postdoctoral fellows who are unfamiliar with Canadian workplace cultures and are without a full command of either official language.

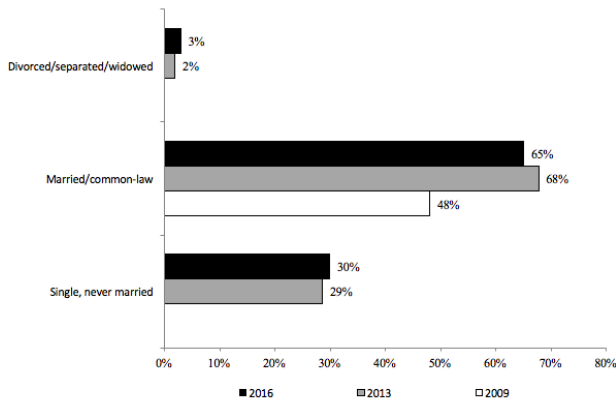
#### **Recommendations from data**

- Adopt a globally competitive postdoc salary scale comparable to those in the United Kingdom and the United States.
- Introduce a salary structure that includes yearly salary increases to accommodate inflation, and experience.
- Postdocs that have obtained external funding (e.g. fellowships from the Tri-Councils, provincial funding or Foundations/Societies) should not be excluded from employment status at Universities/Institutions.
- Increase Canada's competitiveness in the knowledge-based economy by focusing on retaining postdocs in Canada, through the creation of more and improved employment opportunities.
- Facilitate the rapid transition of postdocs to the Canadian labour force through government investment and incentives; incentivize the transition to non-academic sectors.

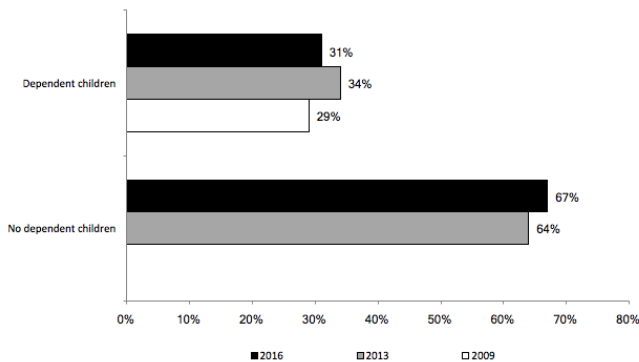
## Figures



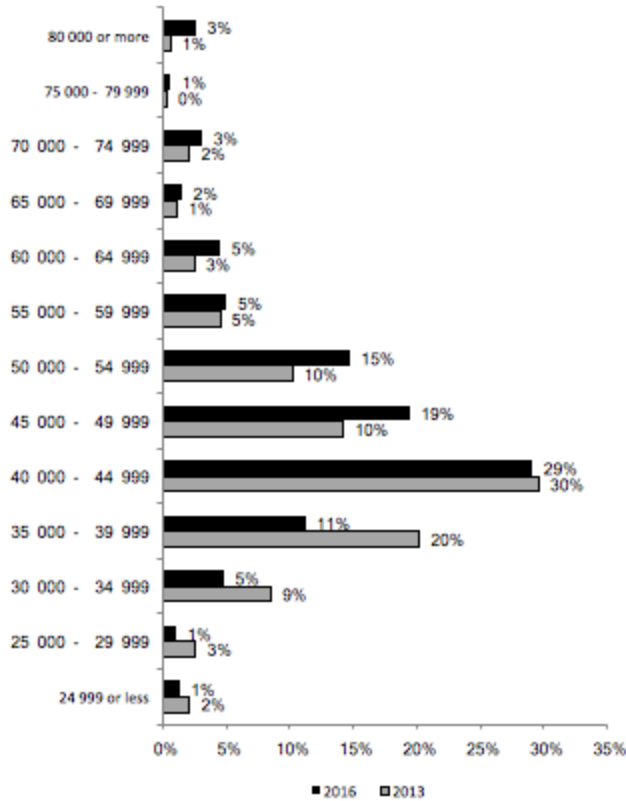
**Figure 1.** Age of postdoctoral fellows working in Canada in 2009, 2013 and 2016. Data collected from from 2009, 2013 and 2016 CAPS-ACSP Canadian National Postdoctoral Surveys.



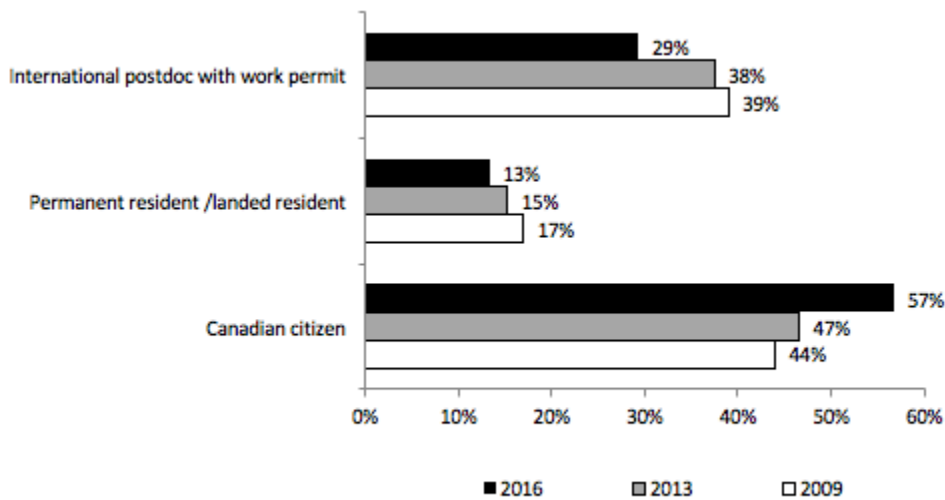
**Figure 2.** Marital status of postdoctoral fellows working in Canada in 2009, 2013, 2016. Data collected from from 2009, 2013 and 2016 CAPS-ACSP Canadian National Postdoctoral Surveys. In 2009, only data on married/common-law status was available.



**Figure 3.** The number of dependents postdoctoral fellows working in Canada have. Data collected from from 2009, 2013 and 2016 CAPS-ACSP Canadian National Postdoctoral Surveys. In the 2009 survey, only the number of dependent children data was collected.



**Figure 4.** Average yearly income of postdoctoral fellows while working in Canada. Data was only collected from 2013 and 2016 CAPS-ACSP Canadian National Postdoctoral Surveys.



**Figure 5.** Citizenship status of postdoctoral fellows while working in Canada. Data was collected from 2009, 2013, and 2016 Canadian National Postdoctoral Survey's.

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