

The Mitacs logo is displayed in a bold, white, sans-serif font. The letter 'i' in 'Mitacs' has a small white dot above it. The logo is positioned in the upper left corner of a blue header area that features abstract, overlapping light blue geometric shapes.

*Inspiring innovation  
Inspirer l'innovation*

## Mitacs Elevate Outcomes: Fellows Survey

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**Mitacs Evaluation**

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## Acknowledgements

This evaluation report is the result of voluntary feedback from a sample of Mitacs' past Elevate fellows. Mitacs is grateful to all of the study participants. The perspective of our postdoctoral fellows is invaluable to understanding how postdoctoral training programs like Mitacs Elevate help shape the future of Canada's talent and economy.



## Executive Summary

### Report Objectives

The goal of this report is to summarize and present findings from a recent longitudinal survey of past Mitacs Elevate fellows. This survey allows Mitacs to capture intermediate and long-term outcomes and impacts of its Elevate program.

Mitacs is proud to share these results as they demonstrate the significant and tangible impact that Elevate is having on the training and employment of highly skilled postdoctoral fellows.

### Key Results

#### Research and Innovation (R&D):

- 93% of Elevate fellows said the program was beneficial to their research
- 26% of fellows reported that their Elevate research resulted in the development of a new or enhanced process
- 13% reported their research lead to patent applications

#### Networks, Collaboration and R&D Training:

- 89% of Elevate fellows said the program expanded their networks, with 59% reporting new connections with industrial researchers, and 58% of fellows reporting new connections with companies
- 86% of respondents are making use of the R&D management skills acquired during their Elevate fellowship
- Over 60% of fellows working in non-academic sectors said that the R&D management training received during their Elevate fellowship was an important factor in helping them obtain their current career

#### Careers:

- 27% of Elevate fellows employed outside academia were hired by their partner organization
- 66% of respondents now employed outside academia believe Elevate has made them more employable

### Conclusion

With Elevate, Mitacs has prepared PhDs for more than one career trajectory. They are trained with the skills and attributes that can be adapted to myriad jobs, and they are inspired to collaborate – whether they are working in industry and are collaborating with academia, or they are in academia and are collaborating with industry. Mitacs has helped to smooth the transition from PhD to career, and made it easier for postdocs to see how they can apply their specific knowledge and use it to benefit society as a whole.



## Table of Contents

Executive Summary .....	2
Table of Contents .....	3
Introduction.....	4
Context .....	4
Objectives .....	4
Report Format.....	4
Methodology.....	4
Design.....	4
Distribution.....	5
Response Rate .....	5
Results .....	6
Demographics.....	6
Outcomes .....	8
Research and Innovation .....	8
Networks & Collaborations.....	10
R&D Training .....	12
Careers .....	14
Career Goals.....	14
Academia .....	17
Non-Academia .....	18
Conclusion.....	20



## Introduction

### Context

For today's postdocs in Canada, the path to a rewarding career is winding. Although our academic system still largely focuses on preparing PhD graduates for careers as full-time faculty members, fewer than one in five Canadian PhDs will obtain positions as tenure-track university professors<sup>1</sup>. Many newly-minted PhD graduates obtain positions as postdoctoral fellows - but these positions, too, are generally aimed at developing teaching, researching university professors.

To be successful in today's globalized, knowledge-driven economy, there is growing recognition that Canada's PhD graduates and postdocs need to be provided with skills training and applied opportunities to supplement their research skills.

Elevate is designed to provide postdoctoral fellows with management and leadership training to prepare them for a career as R&D managers and innovation leaders. Elevate fellowships combine professional skills training with direct experience working with an industry partner on a research project of shared interest. Whether Elevate postdocs go on to pursue a job in academia or not, Elevate boosts PhDs' management skills and industry-linked research experience, allowing them to see and be ready for the many ways in which top PhD talent can contribute to Canadian productivity.

### Objectives

The goal of this report is to summarize and present findings from a recent longitudinal survey of past Mitacs Elevate fellows. This survey allows Mitacs to capture intermediate and long-term outcomes and impacts of its Elevate program. The results supplement the data that is collected through participant exit surveys, which are limited to immediate program satisfaction, outputs, and short-term participant outcomes.

Mitacs is proud to share these results as they demonstrate the significant and tangible impact that Elevate is having on the training and employment of highly trained PhD graduates. These results will also be used internally to inform program improvements and identify new or changing client needs.

### Report Format

Survey results are presented based on the current status of respondents. After presenting respondent demographics, the report highlights overall program satisfaction, as well as the tangible outcomes of the program related to both research and commercialization. Next, we examine the extent to which new research networks and collaborations were formed and existing ones strengthened as a result of the Elevate program. The report then explores the specific impacts of the R&D management training component of the program, and the extent to which certain skills and attributes have been acquired and are being used by Elevate fellows. Finally, the report looks at the specific career trajectories of past Elevate fellows; how the program influenced their career choices and helped them obtain their current employment.

## Methodology

### Design

The survey instrument was designed by the Mitacs Policy Team and reviewed by representatives from multiple Mitacs departments. Several questions in the survey were aligned with those from a previous survey of postdocs entitled *The*

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<sup>1</sup> The Conference Board of Canada (2015), *Inside and Outside the Academy: Valuing and Preparing PHDs for Careers*. Available at: [https://uwaterloo.ca/arts-graduate-careers/sites/ca.arts-graduate-careers/files/uploads/files/7564\\_inside20and20outside20the20academy\\_rpt.pdf](https://uwaterloo.ca/arts-graduate-careers/sites/ca.arts-graduate-careers/files/uploads/files/7564_inside20and20outside20the20academy_rpt.pdf)



*2013 Canadian Postdoc Survey*<sup>2</sup>, in which Mitacs partnered with the Canadian Association of Postdoctoral Scholars. Where applicable, data from the Mitacs Elevate fellows survey is compared with data from *The 2013 Canadian Postdoc Survey*.

The survey was created, managed and distributed using FluidSurveys, an online tool with which program participants and Mitacs staff are familiar. Upon completion, the survey instrument was programmed online and underwent internal testing.

## Distribution

The list of survey participants was created using the Elevate program database. All Elevate fellows who participated in the program between 2010 and 2015 were targeted. A total of 240 Elevate fellows were reached.

The survey was active between November 19<sup>th</sup> and December 11<sup>th</sup>, 2015. A first reminder targeting all Elevate fellows who had not completed the survey was sent on December 3<sup>rd</sup> and a final reminder was sent on December 10<sup>th</sup>. The original email invitation and subsequent email reminders outlined the goals of the survey, as well as survey procedures.

## Response Rate

A total of 92 Elevate fellows responded to at least one question of the survey, with 83 respondents completing the questionnaire. This resulted in an overall response rate of 38% of all past Elevate fellows.

Table 1 provides a detailed breakdown of survey respondents.

**Table 1: Response rates of Elevate fellows survey**

	Total	Overall number of surveys filled	Complete surveys only	Response Rate Overall	Response Rate Complete Only
Reachable Fellows	240	92	83	38%	36%

<sup>2</sup> Canadian Association of Postdoctoral Scholars and Mitacs (2013), *The 2013 Canadian Postdoc Survey: Painting a Picture of Canadian Postdoctoral Scholars*. Available at: [https://www.mitacs.ca/sites/default/files/caps-mitacs\\_postdoc\\_report-full\\_oct22013-final.pdf](https://www.mitacs.ca/sites/default/files/caps-mitacs_postdoc_report-full_oct22013-final.pdf)



## Results

### Demographics

The Elevate fellows we surveyed participated in the program between 2010 and 2015. As seen in Figure 1, a high number of respondents indicated they completed their fellowship in the province of Ontario. This was to be expected, as initially, the program was only funded in Ontario. This also explains the large number of respondents from Ontario universities (Figure 2).

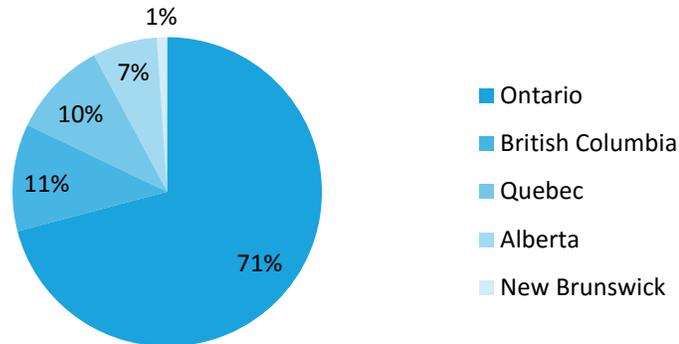


Figure 1: Province in which fellowship was completed

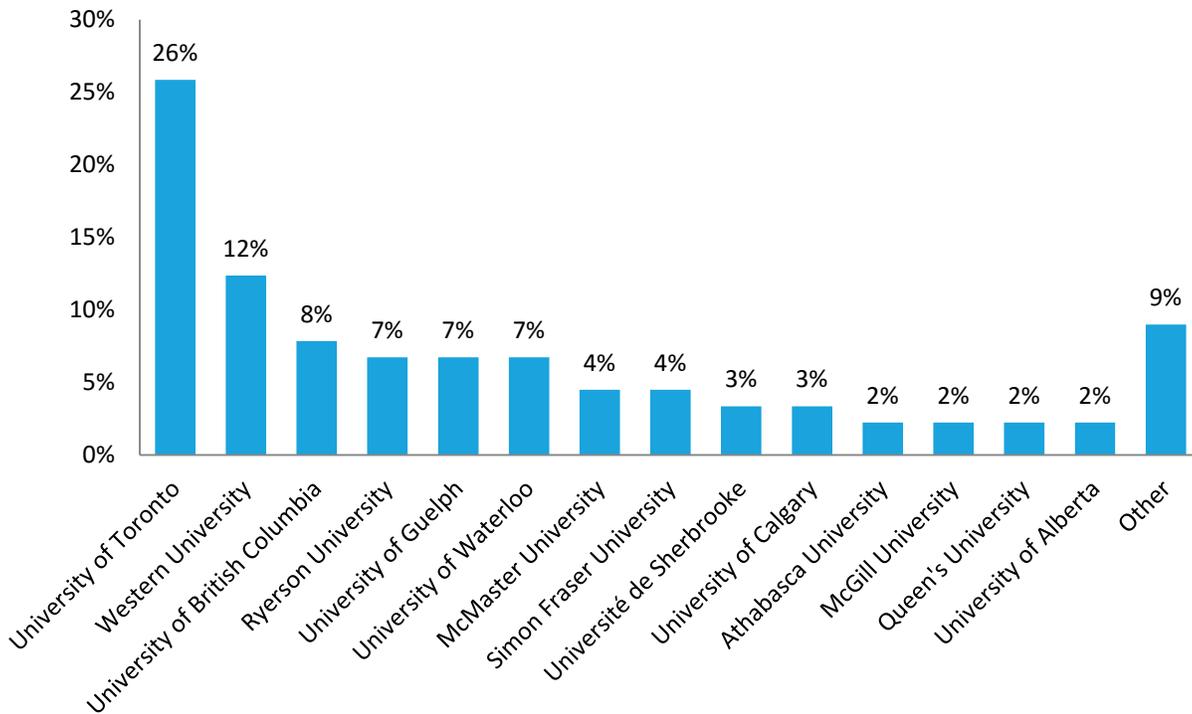


Figure 2: Canadian university affiliated with at time of fellowship



Almost half of respondents indicated their discipline at the time of their fellowship to be engineering (Figure 3), followed by over a quarter whose discipline was life sciences. Other identified disciplines included computer sciences (9%), social sciences (5%), physical sciences (3%), and earth sciences (3%).

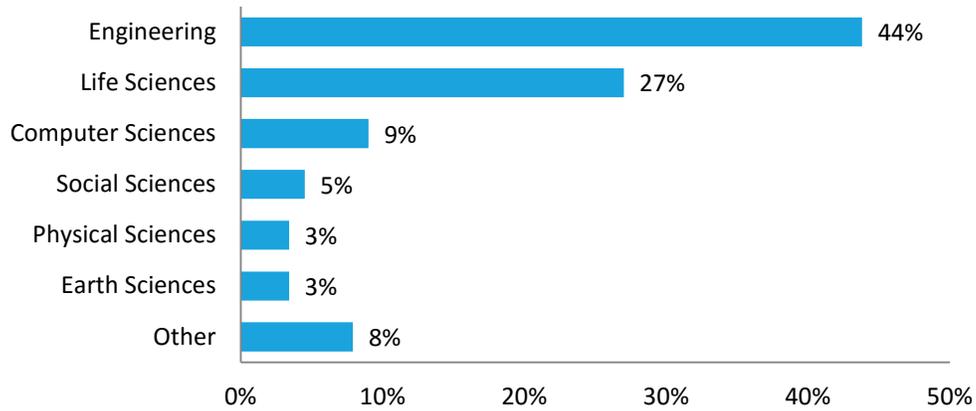


Figure 3: Academic discipline

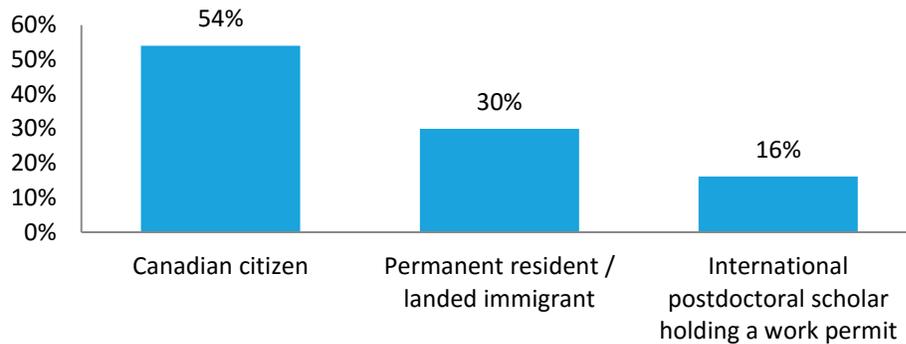


Figure 4: Citizenship status at the time of Elevate fellowship

Lastly, just over half of respondents were Canadian citizens at the time of their fellowship, and a third were permanent residents or landed immigrants (Figure 4). Regardless of citizenship, over 75% of past Elevate fellows are currently residing in Canada (Figure 5).

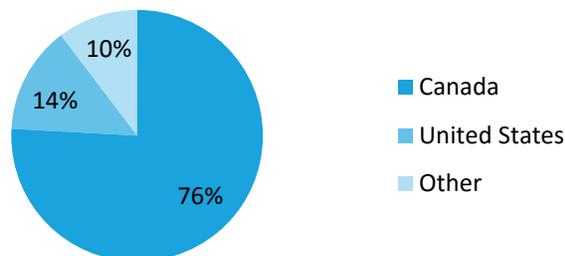
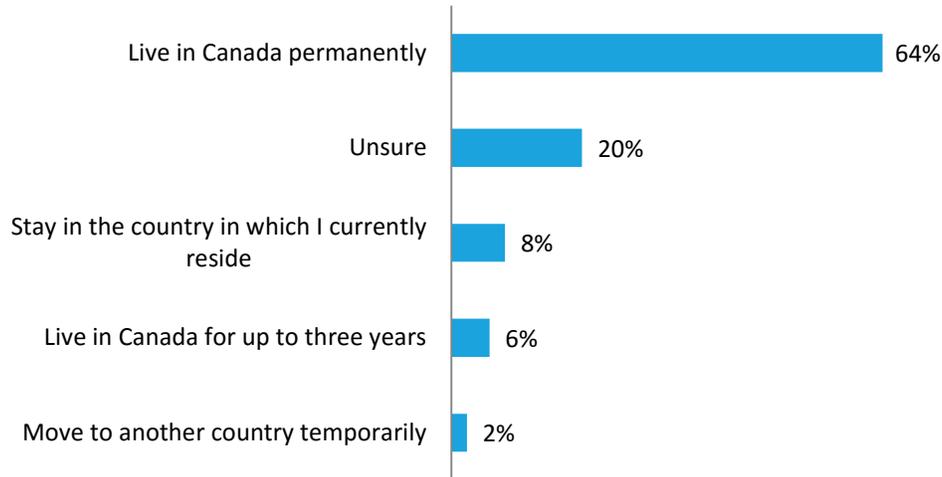


Figure 5: Country in which fellow is currently residing



When asked about their future plans, 64% of respondents indicated that they plan to live in Canada permanently (Figure 6).

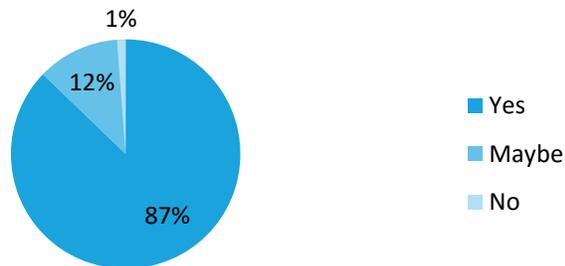


**Figure 6: Plans for the future, regardless of actual location and citizenship**

## Outcomes

### Research and Innovation

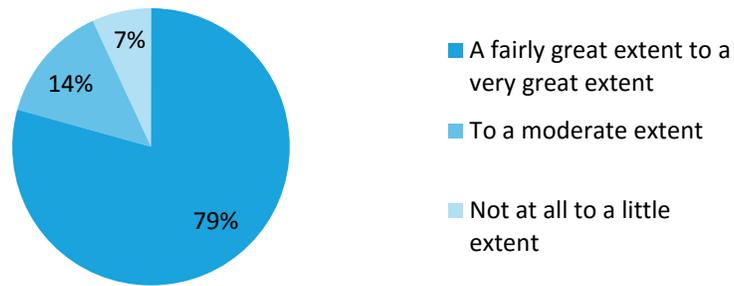
Before we asked Mitacs Elevate fellows about their specific experiences, we wanted to determine their overall level of satisfaction with the program; particularly, whether or not they would recommend the program to fellow postdocs. Results from the survey found that 87% of Elevate fellows would recommend the program to other postdocs (Figure 7).



**Figure 7: Proportion of fellows who would recommend Elevate to other postdocs**

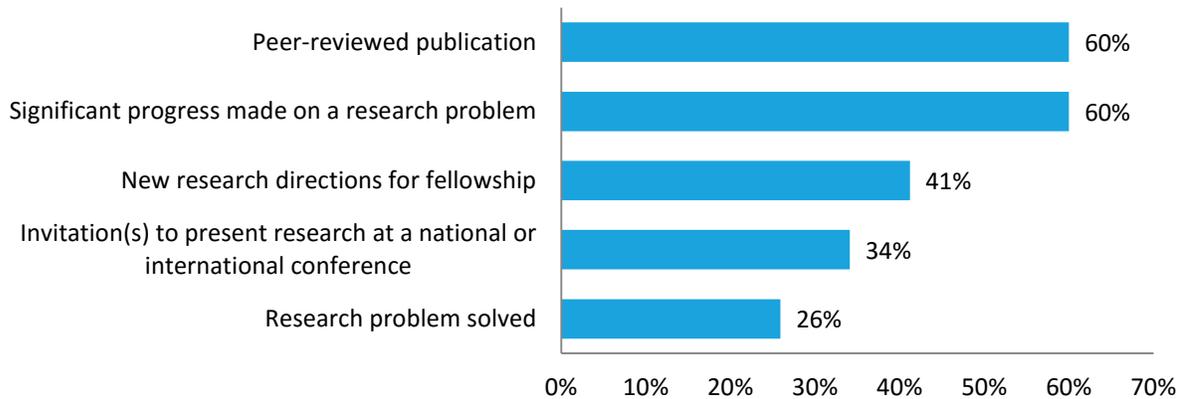
In order to explore the specific benefits of the Elevate program, we first asked survey respondents to what extent they found the program beneficial to their research. As seen in Figure 8, 93% of fellows said, from a moderate to very great extent, the Elevate program was beneficial to their research.





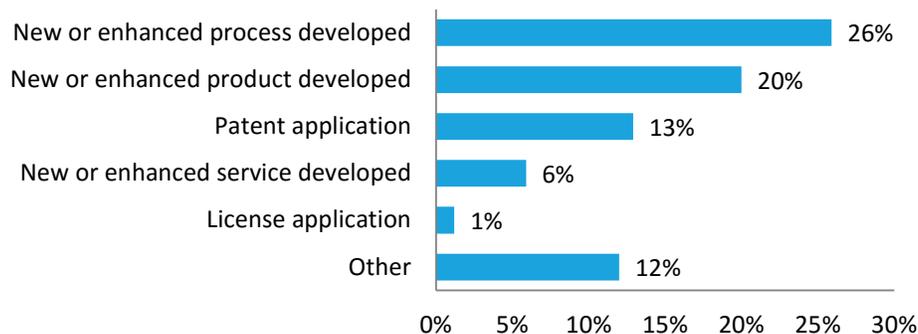
**Figure 8: Extent to which fellows believe that Elevate was beneficial to their research**

Specific outcomes identified by Elevate fellows are shown in Figure 9. These include 60% of fellows reporting peer-reviewed publications as a result of their fellowship, and 60% made significant progress on a research problem.



**Figure 9: Ways in which Elevate benefitted the fellow (research benefits, multiple responses permitted)**

In addition to the research benefits, the Elevate fellows identified other positive, tangible outcomes for the fellow and/or the industry partner. Specifically, 26% of fellows reported that their Elevate research project resulted in the development of a new or enhanced process, 20% reported new or enhanced products, and 13% of fellowships resulted in patent applications (Figure 10).



**Figure 10: Ways in which Elevate benefitted the fellow and/or industry partner (commercialization benefits)**



These outcomes demonstrate the impact that the Elevate program is having in promoting process and product innovations, with results that are more likely to have commercial value – an area identified as a significant weakness in Canada<sup>3</sup>.

*“One of the best fellowship programs I know in the country. It is designed in such a way that postdoctoral fellows learn the “missing piece” of soft skills (i.e., project management, networking, communication, etc.) in addition to providing the opportunity for PDFs to develop their scientific endeavors and work towards their career goals. I recommend Mitacs Elevate without any shadow of doubt.”*

– Elevate fellow

### Networks & Collaborations

In addition to research and innovation outcomes, one of the priorities of the Elevate program is to create lasting connections between academia and industry; to continue collaborations on research projects which apply the research expertise of PhDs to a company’s R&D problems. Respondents from the survey indicated that, following the completion of their Elevate fellowship, they established and expanded these networks of collaboration. As seen in Figure 11, 89% of Elevate fellows said the program expanded their networks, to a moderate extent or more; in fact, 58% of fellows made new connections with companies, 59% made new connections with industrial researchers, and 80% made new connections with academic researchers (Figure 12).

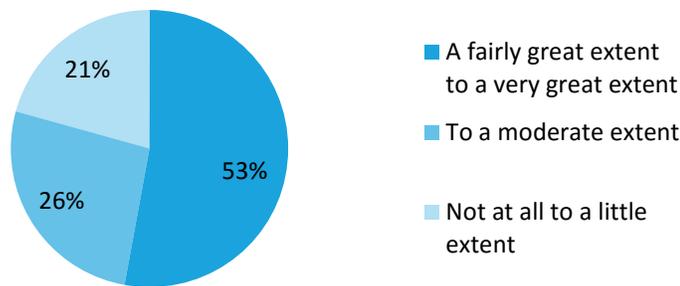
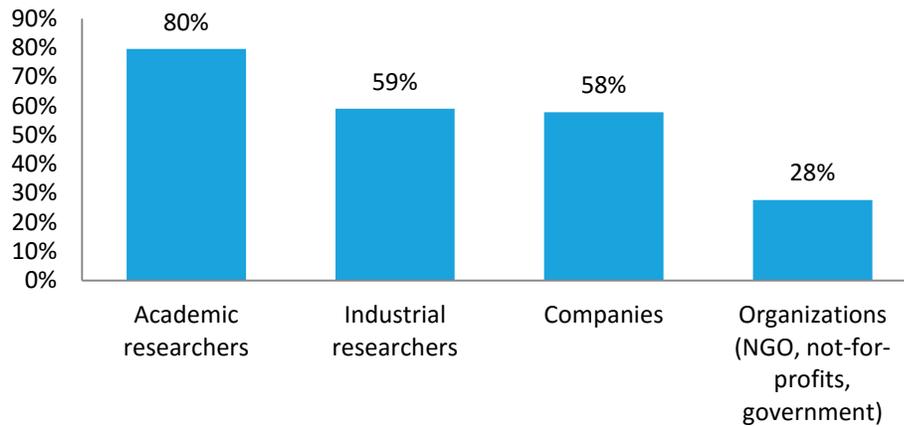


Figure 11: Extent to which Elevate has expanded fellows’ networks

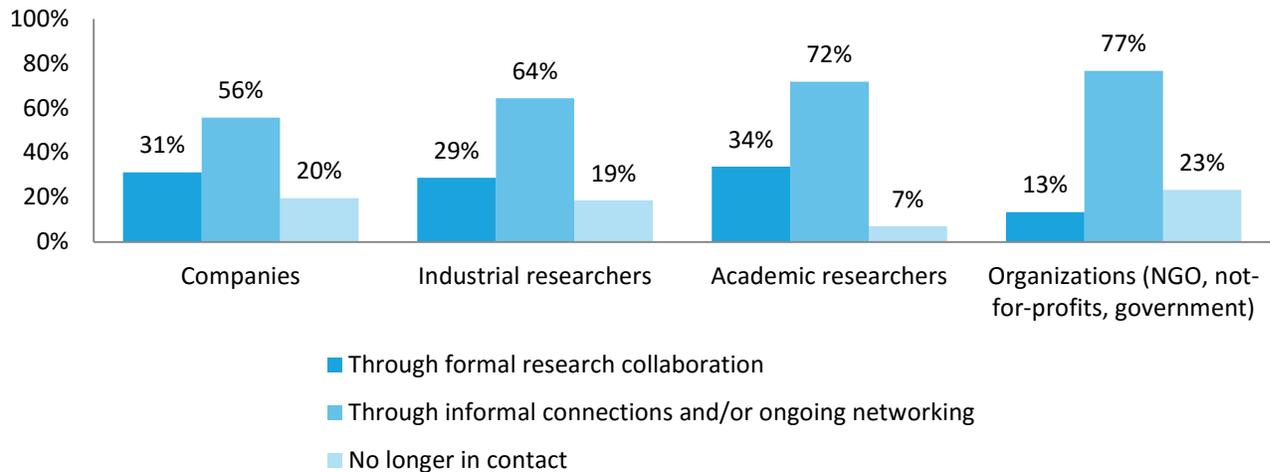
<sup>3</sup> Government of Canada (2011), *Innovation Canada: A Call to Action: Review of Federal Support to Research and Development – Expert Panel Report*. Available at: [http://rd-review.ca/eic/site/033.nsf/eng/h\\_00287.html](http://rd-review.ca/eic/site/033.nsf/eng/h_00287.html)





**Figure 12: New connections made as a result of participation in Elevate program**

Given that over half of fellows indicated the creation of new connections with companies as a result of their fellowship, we examined the nature of those new connections. We found that of those fellows who made new connections with companies, a third of them are still participating in formal research collaborations, and 29% of fellows who made new connections with industrial researchers are still conducting formal research together (Figure 13).



**Figure 13: Extent to which fellows are still in contact with those new connections (multiple responses permitted)**

These types of connections and collaborations are a key component to the success of a postdoc’s career, exposing them to broad networks in order to explore opportunities outside of academia. As stated in the Conference Board of Canada report, “While many PhDs have strong networks of contacts in academia, they often lack networks of professional contacts outside PSE, and many struggle to build such networks”<sup>4</sup>. Elevate gives PhDs the experience of working closely with non-academics for two years, effectively creating lasting research relationships for the benefit of both the postdoc and the partner.

<sup>4</sup> The Conference Board of Canada (2015), *Inside and Outside the Academy: Valuing and Preparing PHDs for Careers*. Available at: [https://uwaterloo.ca/arts-graduate-careers/sites/ca.arts-graduate-careers/files/uploads/files/7564\\_inside20and20outside20the20academy\\_rpt.pdf](https://uwaterloo.ca/arts-graduate-careers/sites/ca.arts-graduate-careers/files/uploads/files/7564_inside20and20outside20the20academy_rpt.pdf)



## R&D Training

*“Through Mitacs Elevate, I was trained in areas that were totally unfamiliar to me. And these critical skills I gained in those two years, turned out to be critical in achieving my career goals. I think Elevate is a very important part of me and I am very grateful that I was part of it.”*

– Elevate fellow

In addition to expanded networks and opportunities for collaboration, postdocs also need and want more and different types of training. The Mitacs-CAPS survey found that “...with respect to training, two key issues emerge. First, postdocs received insufficient training. Second, the training postdocs seek and receive is designed to prepare them for academic careers that few will obtain; postdoctoral training rarely includes the professional skills needed to succeed in non-academic settings”<sup>5</sup>.

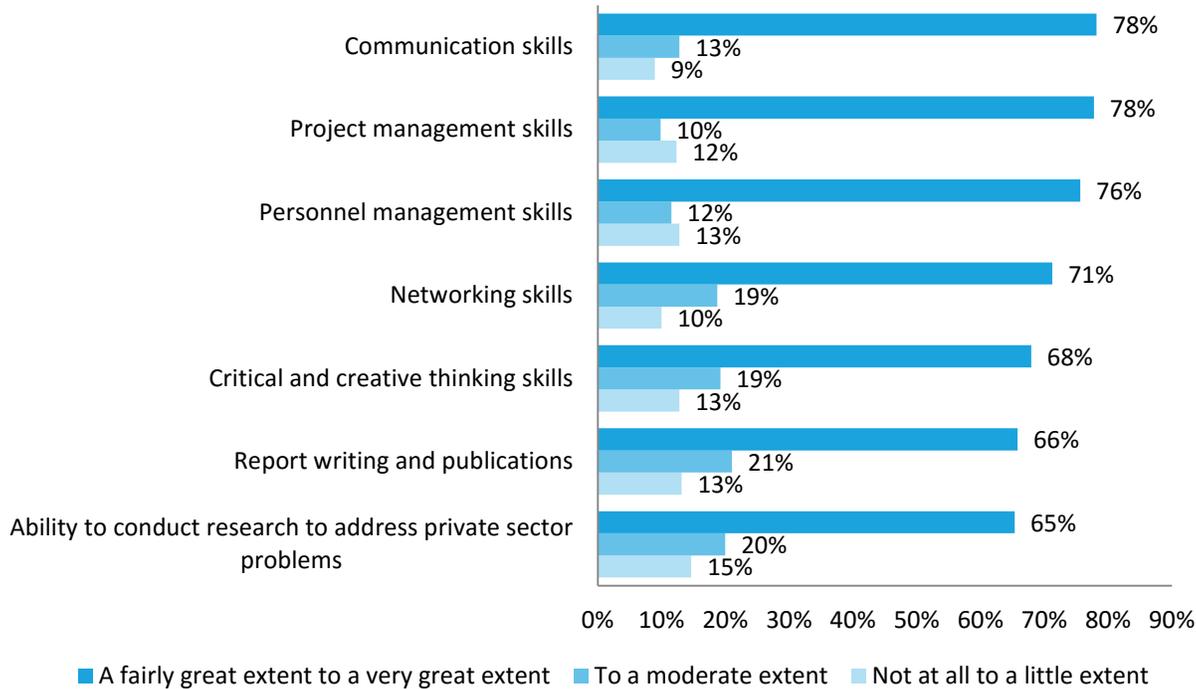
Elevate is designed to train the next generation of R&D managers, and supply fellows with the skills they need to succeed in their future careers. Elevate fellows receive extensive professional development training during their fellowship which pertains to a variety of competencies. Survey respondents reported the top three skills developed during their fellowship to be project management skills (74%), communication skills (72%) and networking skills (71%) (data not shown). Unfortunately, over half of postdocs in Canada receive no formal training on these types of skills, and only 18% of postdocs receive formal career development training<sup>6</sup>.

While the acquisition of skills and attributes are important, they are only useful if they are employed. Qualitative data in the form of testimonials from survey respondents found that Elevate fellows are using these skills in their careers on a regular basis, regardless of sector. To a moderate extent or more, 91% of fellows are using the communication skills they acquired, and 88% are using their project management skills and personnel management skills (Figure 14).

<sup>5</sup> Canadian Association of Postdoctoral Scholars and Mitacs (2013), *The 2013 Canadian Postdoc Survey: Painting a Picture of Canadian Postdoctoral Scholars*. Available at: [https://www.mitacs.ca/sites/default/files/caps-mitacs\\_postdoc\\_report-full\\_oct22013-final.pdf](https://www.mitacs.ca/sites/default/files/caps-mitacs_postdoc_report-full_oct22013-final.pdf)

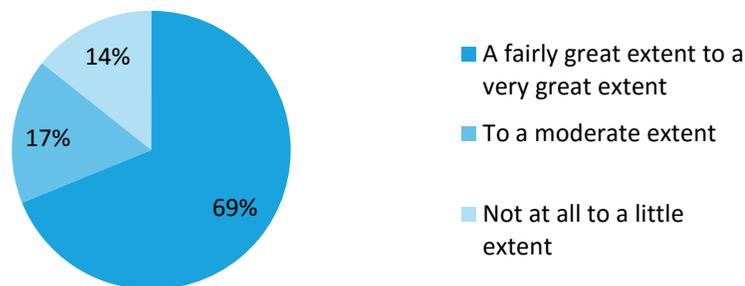
<sup>6</sup> Canadian Association of Postdoctoral Scholars and Mitacs (2013), *The 2013 Canadian Postdoc Survey: Painting a Picture of Canadian Postdoctoral Scholars*. Available at: [https://www.mitacs.ca/sites/default/files/caps-mitacs\\_postdoc\\_report-full\\_oct22013-final.pdf](https://www.mitacs.ca/sites/default/files/caps-mitacs_postdoc_report-full_oct22013-final.pdf)





**Figure 14: Extent to which fellows are making use of the skills developed during the R&D management training**

According to a recent report by the Business Council of Canada (BCC), respondents from a survey of 90 private-sector employers said that the skills that matter most when hiring entry-level and mid-level candidates are collaboration/teamwork skills, communication skills, people skills/relationship building and leadership skills<sup>7</sup>. Through the Elevate R&D management training, fellows acquire and build on these same valuable soft skills, especially collaboration and teamwork, communication skills, and people skills. Project management requires strong leadership skills especially, and this is what forms the base of the R&D management training which all Elevate fellows must complete. According to our survey, 86% of Elevate fellows are making use of the R&D management skills acquired, to a moderate extent or more (Figure 15).

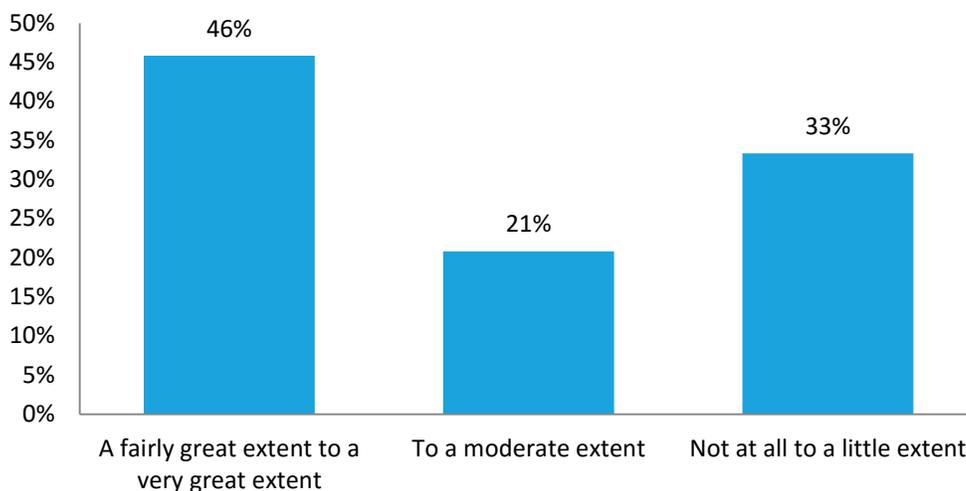


**Figure 15: Extent to which fellows are making use of the overall R&D management skills acquired**

<sup>7</sup> Business Council of Canada (2016), *Developing Canada's future workforce: a survey of large private-sector employers*. Available at: <http://thebusinesscouncil.ca/wp-content/uploads/2016/02/Developing-Canadas-Workforce-March.pdf>



In fact, these skills and attributes acquired during the fellowship have helped fellows find employment outside academia. Two-thirds of Elevate fellows now employed in non-academic sectors reported that, to a moderate extent or more, the R&D management training they received during their fellowship was an important factor in helping them obtain their current position (Figure 16). We recognize that this figure implies that some fellows are not utilizing these skills for the purpose of obtaining employment in the way we expected. We believe this reflects the ongoing challenge for receptor capacity in the industrial R&D sector, and we intend to follow up on this in future evaluation projects. We explore the impacts of Elevate on the specific career paths of fellows in more detail in the following section.



**Figure 16: Extent to which the R&D management training was an important factor in helping fellows obtain their current position (of those employed in non-academic sectors)**

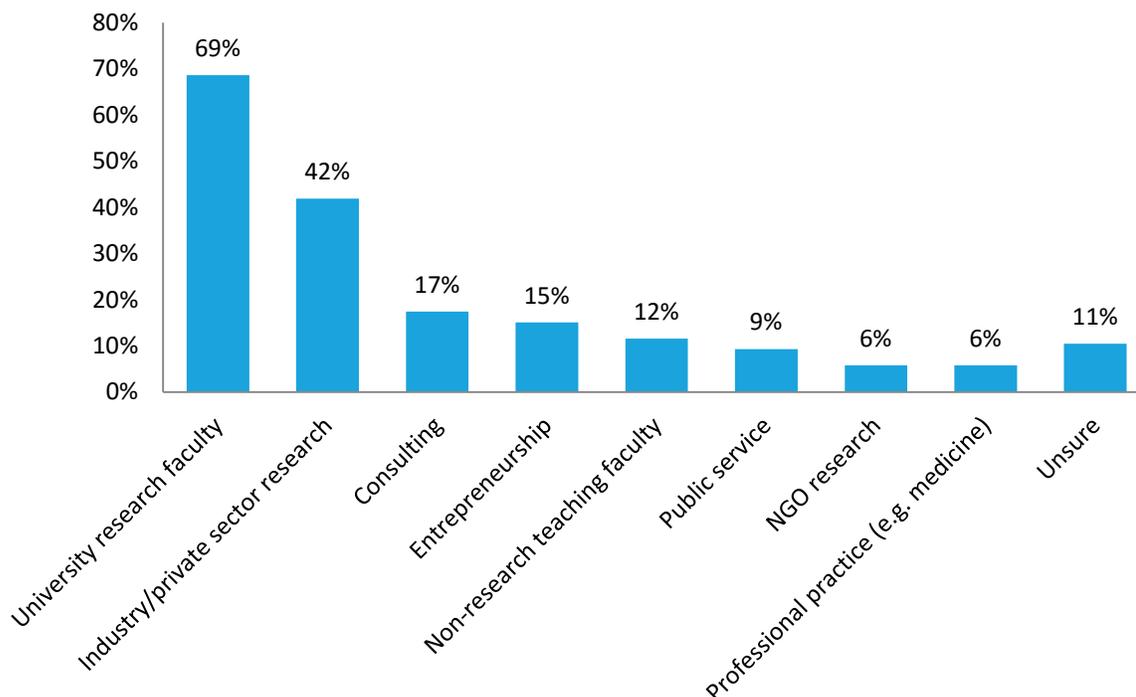
## Careers

### Career Goals

Due to their exposure to new and expanded networks, as well as the acquisition of valuable skills training, Elevate has changed the way fellows approach their career paths. The Mitacs-CAPS report found that 80.5% of respondents held the goal of becoming university research faculty<sup>8</sup>. It is no surprise that tenure-track is the goal of many newly minted PhDs, including the Elevate fellows we surveyed; 69% of fellows cited university research faculty as one of their career goals prior to beginning their Elevate fellowship (Figure 17).

<sup>8</sup> Canadian Association of Postdoctoral Scholars and Mitacs (2013), *The 2013 Canadian Postdoc Survey: Painting a Picture of Canadian Postdoctoral Scholars*. Available at: [https://www.mitacs.ca/sites/default/files/caps-mitacs\\_postdoc\\_report-full\\_oct22013-final.pdf](https://www.mitacs.ca/sites/default/files/caps-mitacs_postdoc_report-full_oct22013-final.pdf)



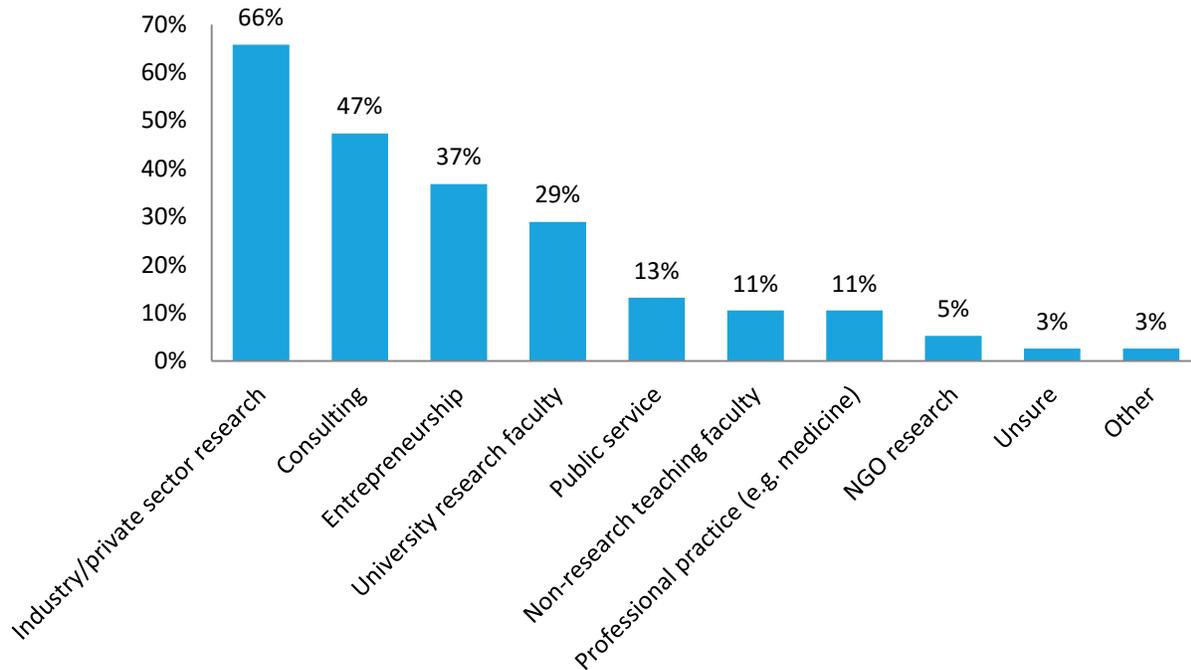


**Figure 17: Career goals prior to Elevate (multiple responses permitted)**

Interestingly, almost half (43%) of Elevate fellows indicated that their career goals have changed since they began their fellowship. Of those Elevate fellows whose career goals have changed, 66% cited industry/private sector research as a new career goal (Figure 18). Data from the Mitacs-CAPS survey found that the most common changed career goal for postdocs was also industry/private sector research (44%), with the next most common career goal being university research faculty<sup>9</sup>.

<sup>9</sup> Canadian Association of Postdoctoral Scholars and Mitacs (2013), *The 2013 Canadian Postdoc Survey: Painting a Picture of Canadian Postdoctoral Scholars*. Available at: [https://www.mitacs.ca/sites/default/files/caps-mitacs\\_postdoc\\_report-full\\_oct22013-final.pdf](https://www.mitacs.ca/sites/default/files/caps-mitacs_postdoc_report-full_oct22013-final.pdf)





**Figure 18: Current career goals, of those who have changed their goals (multiple responses permitted)**

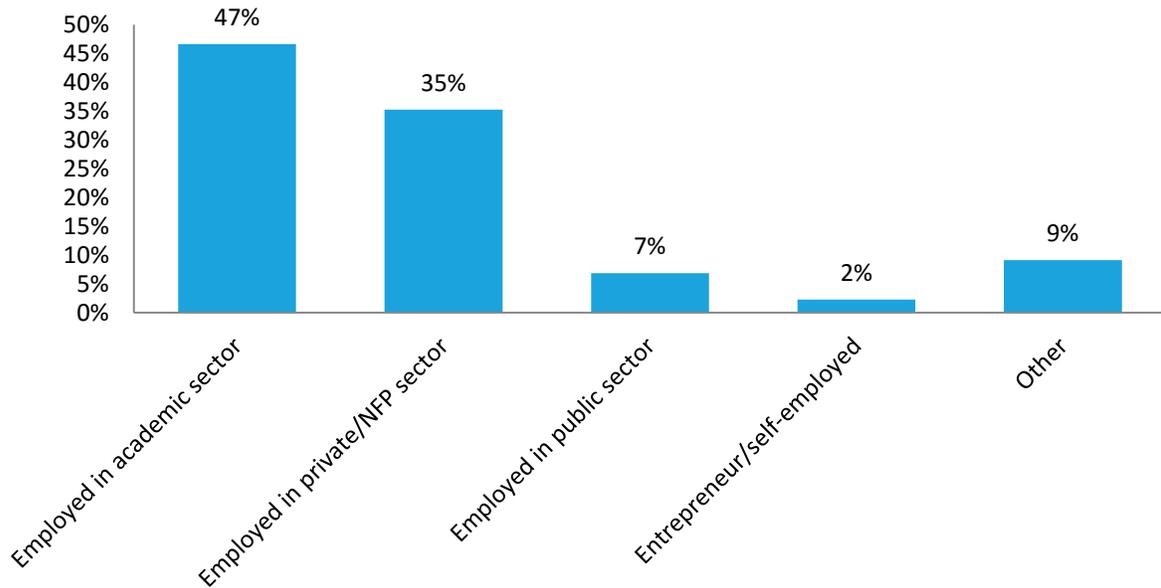
Unlike the Mitacs-CAPS survey, our results show that the second most common career goal of Elevate fellows who changed their career goal after their fellowship was not university research faculty; it was consulting (47%), followed by entrepreneurship (37%) (Figure 18). After completion of the Elevate program, fellows are more interested in pursuing other career avenues outside academia. This may reflect a self-selection bias, since program participants may be more open to exploring non-academic career paths through opportunities like Elevate; however, it is also possible that the experience and skills acquired open new avenues and increase confidence in non-academic career paths by fellows. We will explore these questions in future surveys.

In the next section, we explore the current career paths of Elevate fellows, and how the program has influenced their success in these careers.

### Current Careers

A key goal of this survey was to find out what Elevate fellows are doing now that they have completed their fellowship. As seen in Figure 19, 47% of past Elevate fellows are now employed in the academic sector, and 44% are now working in either the public, private, or not-for-profit sectors, or they have become entrepreneurs.





**Figure 19: Current occupation of fellows**

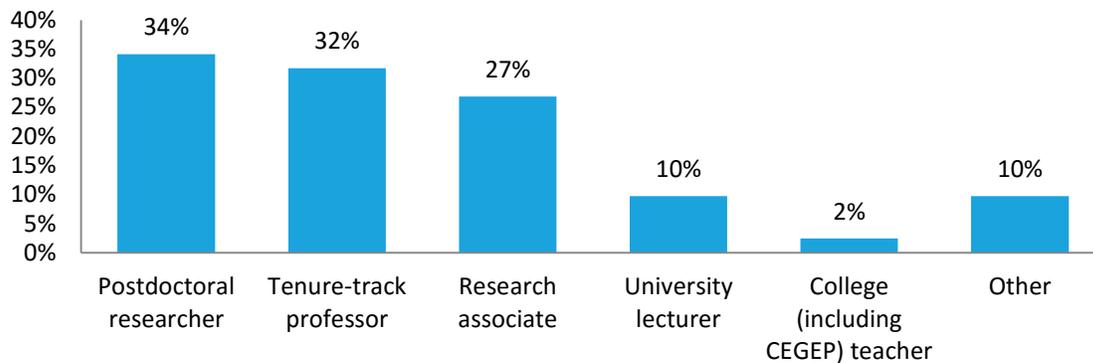
In the next two sections, we explore further what those now employed in academia as well as those employed outside academia are doing with their Elevate experience.

*“The transition from PhD graduate to a career is difficult in the first few years. The Elevate program is an effective way to gain some experience while bridging the gap between graduating and the career that you would eventually like to have.”*

– Elevate fellow

### Academia

Of the 47% of fellows now employed in the academic sector, almost one-third are tenure-track professors and 34% identify as postdoctoral researchers (Figure 20).

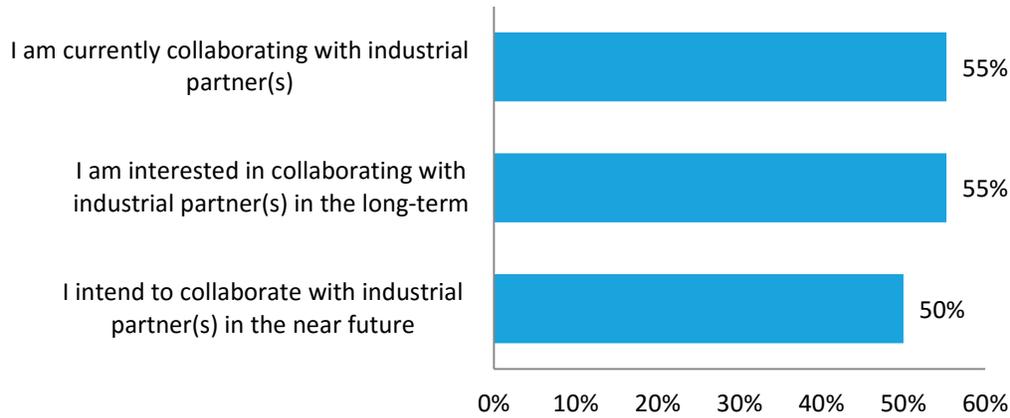


**Figure 20: Role of those employed in academia**

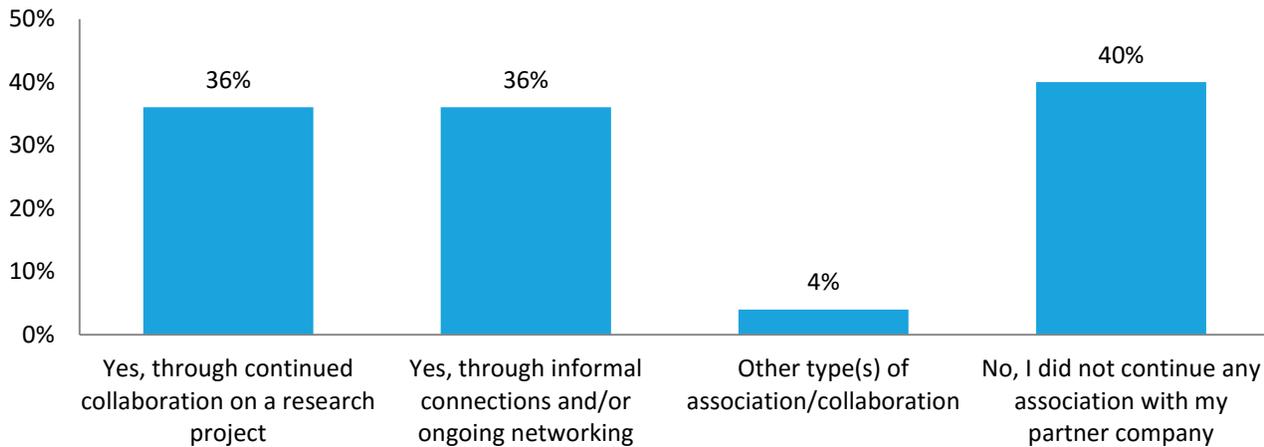
Regardless of their role in academia, Elevate has influenced fellows now employed in the academic sector to continue to pursue collaborations with industry. When asked about their collaboration intentions with industry, over half reported



they are currently collaborating with industrial partners, and 50% intend to collaborate with industrial partners in the near future (Figure 21). Separately, over one third of fellows who had an industry partner continue to collaborate on a research project with their partner company (Figure 22).



**Figure 21: Collaboration intentions of those in academia (multiple responses permitted)**



**Figure 22: Continued association of those in academia with their Elevate industry partner (multiple responses permitted)**

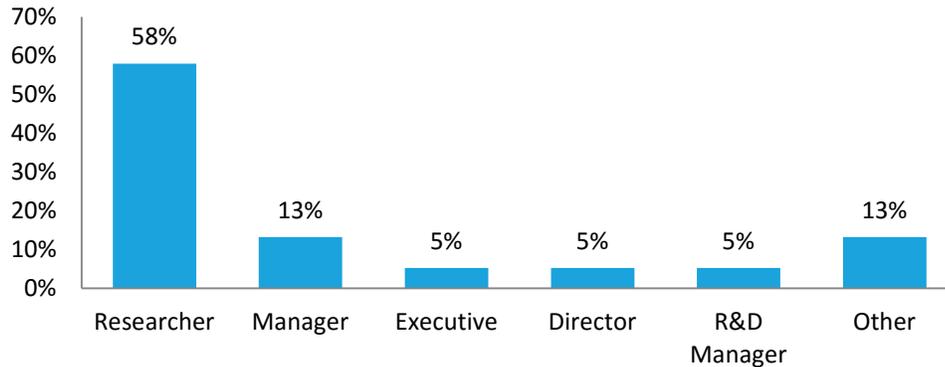
It is clear that academia-industry collaborations do not end once the Elevate fellowship has been completed; fellows see the benefit of these collaborations and continue to pursue them in their academic roles.

**Non-Academia**

27% of Elevate fellows employed outside academia were hired by their partner organization.

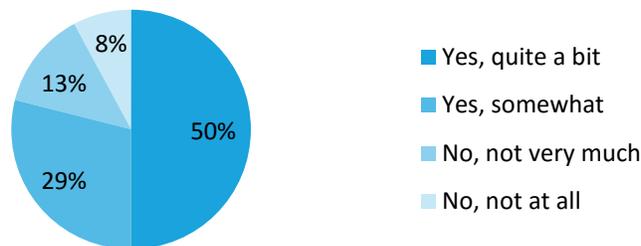


Many Elevate fellows went on to pursue non-academic careers, in either the public, private or not-for-profit sectors, or became entrepreneurs; in total, 44% of Elevate fellows are employed in non-academic careers. Of those now working outside the academy, over half identify as researchers, and 28% hold a managerial, directorial or executive role (Figure 23).



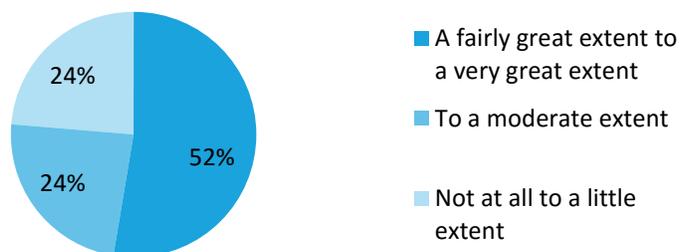
**Figure 23: Role of those employed outside academia**

Regardless of their title, though, 79% of all fellows employed outside academia are responsible for some R&D management in their role (Figure 24). This is consistent with the statistic in the previous section on R&D training (Figure 15), which identifies 86% of fellows making use of the R&D management training skills.



**Figure 24: Extent to which fellows employed in non-academic roles are responsible for managing R&D**

Elevate has an impact on the transition to careers outside academia. As seen in Figure 25, 76% believe, to a moderate extent or more, that their Elevate experience has made them more employable in their non-academic career.



**Figure 25: Extent to which fellows now employed in the non-academic sector believe Elevate has made them more employable in relation to their role**



## Conclusion

With Elevate, Mitacs has prepared PhDs for more than one career trajectory. They have been trained in the skills and attributes that can be adapted to myriad jobs, and they are inspired to collaborate – whether they are working in industry and are collaborating with academia, or they are in academia and are collaborating with industry. Mitacs has helped to smooth the transition from PhD to career, and made it easier for postdocs to see how they can apply their specific knowledge and use it to benefit society as a whole.

