

Employee Career Services

Post-Postdoc: Finding work beyond academia



(Image of a black backpack and a brown briefcase)

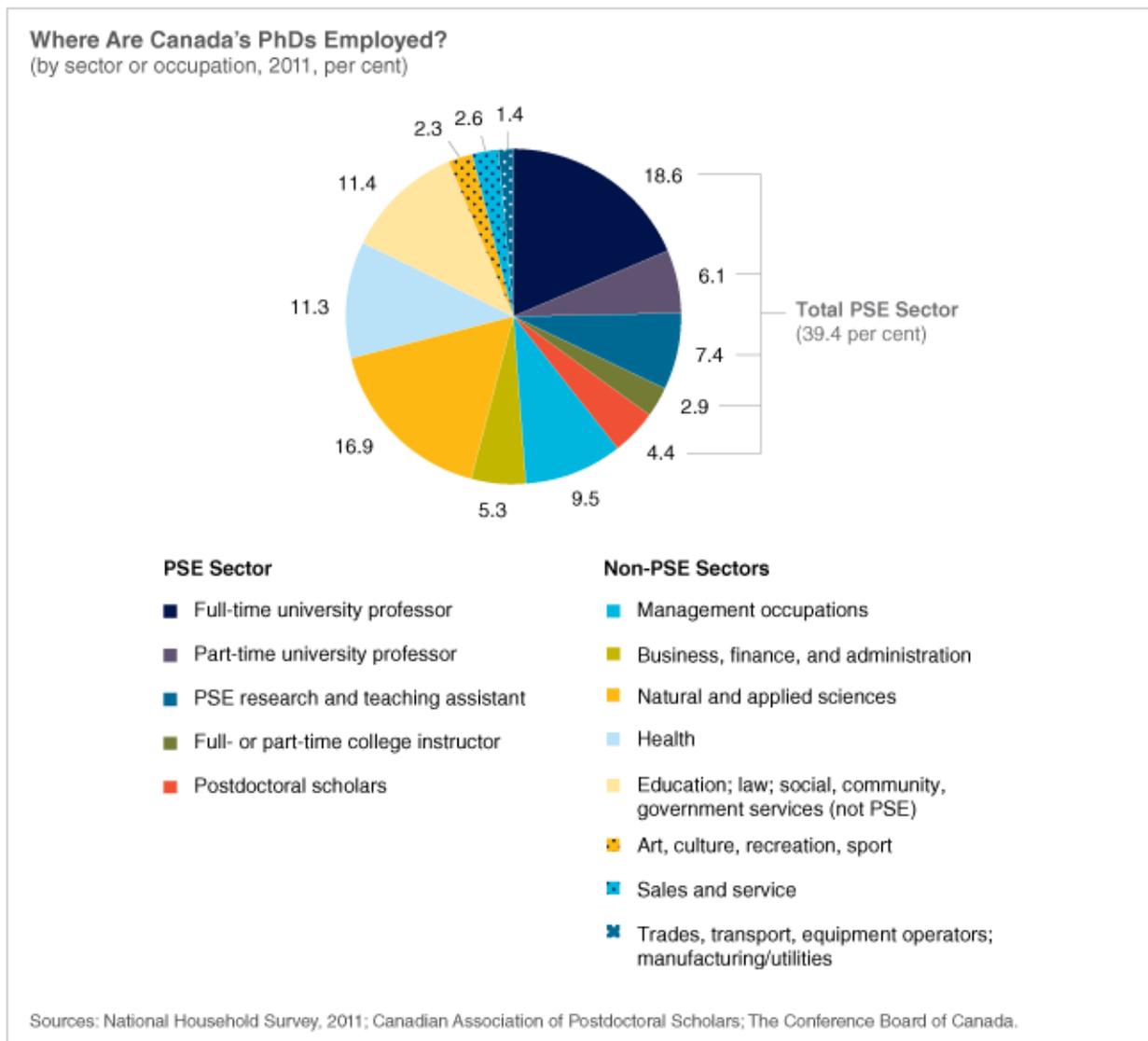
Today's Employment Environment

The academic landscape has changed radically since the brief period when tenure-track jobs were relatively plentiful. Under 20% of PhD graduates are employed as full-time university professors, and the demand among postdocs for tenure track roles continues to far outstrip the supply. As the "knowledge economy" outside of academia continues to evolve, postdocs are increasingly looking to careers outside the academy, whether in industry, government or not-for-profit organizations. While careers beyond the professorship used to be seen by some as failure, they now reflect adaptability and a meaningful, more stable alternative to sessional teaching and "perpetual postdoc" positions.

The knowledge, skills and experience that postdocs acquire during their rigorous academic training are all valuable; employers want these strengths. Yet, employers don't always know that postdocs have these strengths, nor do all postdoc applicants know how to express them for non-academic employers. Finally, the non-academic job search differs from the academic search, and for many postdocs, navigating the Canadian job market is a new experience. This guide will orient you to resources to help you **explore options, articulate your strengths** and **manage your work search**.

Exploring Options

Despite the current world of employment, and the richness of the contributions that postdocs can make in industry, the public sector, and non-profit organizations, many postdocs still run into barriers to exploring options.



[From the Conference Board of Canada](#)

One barrier to exploration is simply not knowing where to start, so please make use of the links within this guide. Follow up even on resources for PhD candidates; while they won't address all postdoc needs, they go a long way towards addressing the major challenges of exploring non-academic careers,

and showing employers that your highly specialized knowledge comes with broadly applicable professional skills.

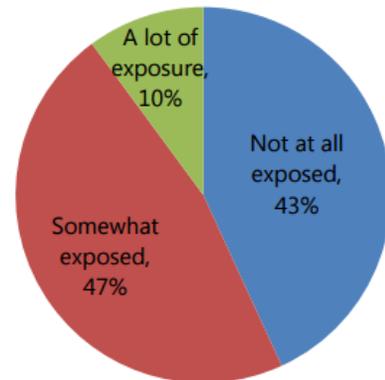
False assumptions present another barrier to career exploration. People who have been on an academic path can (wrongly) assume that any new career path will require “starting from scratch.” Others feel they have wasted their time pursuing specialized research, though research itself shows that people with PhDs have higher employment rates than those without. The entry into many careers is much less time-intensive than entry into academia. Do not give up before you have even started.

Question any hypothesis that you currently might hold to be true about non-academic work and your chances of finding it.

Status can create some reluctance to explore other options. It is easy, while you’re within academia, to believe myths you might hear about work outside the academy: that it must be intellectually unfulfilling, or that critical thought only happens within the university. Yet each profession believes strongly in its own status, and no one outside of academia will think that you have “copped out” if you leave. Your new colleagues will most likely assume that you have made a reasonable decision to pursue truly interesting work – the same work that interests them.

Time pressure is an issue for all career explorers in all fields. This guide links to time-effective resources. Many activities that help you explore career options can be broken down into smaller tasks. Do not be discouraged by those who say that looking for a job is a full-time job. Most employed adults have had, like you, to work career exploration and the job search into their lives. It can be done.

Finally, wishful thinking can play a role. While some people find tenure track employment, many more do not. It is prudent to develop multiple plans; those plans make you more resilient.

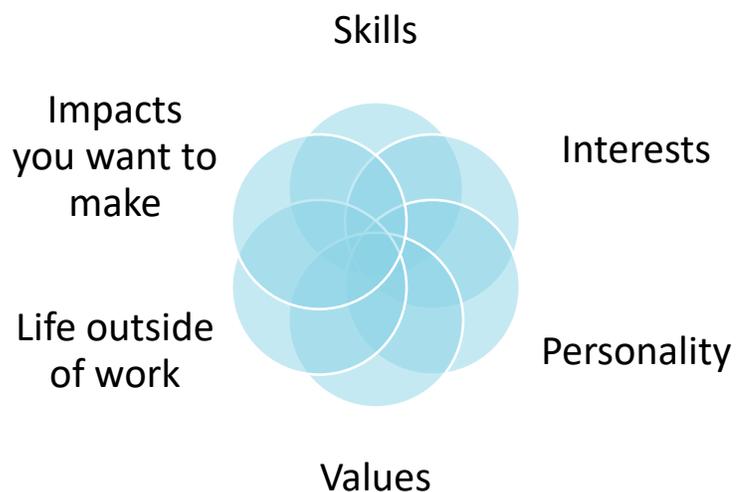


Extent of exposure to non-academic career options. From the [2016 Canadian National Postdoctoral Survey Report, by CAPS/ACCSP](#)

Resources for Exploring Your Options

Career exploration isn't as simple – or, luckily, as limited – as getting a list of related careers (though versatilephd.com does a nice job of starting that list). While you can search for careers for people with your focus or area of training, the world of work is big: a Canadian effort to catalogue all job titles came up with over 13 000 job titles, and about 8 000 duplicate titles. Unsurprisingly, then, starting with lists is not necessarily as productive as using a more systematic approach.

Postdocs sometimes get discouraged from exploring because they fear that most employers don't need someone with their depth of knowledge. This may be true; however, *all* employers need people who can identify problems, create manageable solutions, and further problem solve when unexpected issues emerge, all with an eye to resources. They need people who can collaborate with others, who can manage their emotions, and who can get things done. This is not a platitude; it is the reality of post-academic employment. It may feel strange to set aside the knowledge you have developed over the past several years and to focus, instead, on the skills you used to get that knowledge – skills that you may have dismissed. Once you know the full complement of your strengths, though, you can begin to explore what sorts of impacts you want to make as a professional, and where you can best make those impacts, whether in a field directly related to your research or not. In other words, a systematic process of career exploration starts with you as a whole, rather than with your research expertise.



McMaster has resources to help you with this approach. While McMaster's School of Graduate Studies may seem to focus on graduate students, it has deliberately invested in [career resources](#) and [training opportunities relevant to postdocs as well](#). McMaster's guide for graduate students, "[Job Search in 10 Minutes a Day](#)," has excellent information on topics including how to manage the job search, use business directories to find relevant employers,

and understand how hiring managers screen applicants. [The School of Graduate Studies – Skills and Opportunities online resources](#) identifying options, and finding out how to explore those options and build networks.

Another option to consider includes contacting people of interest through LinkedIn. By all means, use LinkedIn to find people of interest. If at all possible, however, once you've found people on LinkedIn, use other ways of contacting them, like email or phone. Many people with LinkedIn profiles log in to view their messages only infrequently.

Something else to consider is the **importance of informational interviewing**. Informational interviewing is one of the most time-effective and personalized career exploration and networking methods you can use. It can give you access to information you need to make informed career choices, alert you to career paths you were previously unaware of, help you identify areas of strength and opportunities for growth, and alert you to job opportunities. So, get out there and start informational interviewing. It is one of the ways you can test out new options before committing to them.

You can further your knowledge of what you have to offer, and where you might offer it, on McMaster's Employee [My Career](#) webpage. You may find the career planning downloadable resources and activities useful.

Articulating your strengths

When you are facing a career transition and try to identify your strengths, it can be tempting to believe that you have none. You likely work with people with assets so similar to your own that your strengths seem completely ordinary to you.

Outside of academia, you will encounter people with a broader range of skill sets. What may seem like run-of-the-mill skills within a university research environment will be rarer and more valuable elsewhere. And it is likely your skills, rather than your highly specialized content knowledge, that employers will be most interested in knowing about.

If identifying skills is a challenge, try activities like using "flow" stories to pick out strengths that have been invisible to you. The skills that you notice needn't be the ones you use most. Just because you do not spend most of your time liaising with industry partners doesn't mean that you magically cease to have that skill. If you have a skill and want to keep using it, you will need to clearly articulate what you can do in your networking efforts, resumes, cover letters, and online profiles. And you need to set aside your

skepticism: put the information about your strengths out there, as accurately as you can, and leave it up to employers to decide whether they are enough. Don't avoid mentioning a skill just because you wish it were stronger.

Similarly, don't detail experiences or accomplishments that are relevant to academic roles if they aren't relevant to the work you're pursuing next. It can be tough to let go of a focus on publications, the jargon your field favours, or the details of your research. Letting transferrable skills take centre stage does not mean your other efforts have been wasted; it means that you're helping your next employer understand what you can do, rather than leaving them to read between the lines of an academic CV. You have probably developed the ability to manage a project within resource limits, train students or junior professionals, synthesize information, find ways to be more efficient, communicate with different audiences, and more. But employers won't know about those skills and the others you've developed unless you describe them, preferably in the language that's most relevant to their field.

See the following examples to understand the differences between a CV and a Resume. Notice how each document can be used to target academic career pathways and non-academic career pathways. When used appropriately each will convey relevant information that aligns with the hiring employer.

Sample: Anonymized academic CV page 1

This anonymized document follows CV conventions: it highlights education, uses language appropriate to an academic environment, and makes little mention of transferrable skills.

Dr. Mystery Postdoc

Postdoctoral Fellow,
Department of Pathology and Molecular Medicine
Faculty of Health Sciences, McMaster University
xxx-xxx-xxxx.mpostdoc@mcmaster.ca

Goal-oriented researcher with expertise in antithrombotics and bleeding disorders. Sound technical abilities coupled with a desire to combine experience, passion and skills to embrace opportunities in bridging bench to bedside research.

Research experience

Postdoctoral fellow, Faculty of Health Sciences, McMaster University
(Working on mystery disorders) January 2015- Present

Education

PhD, Department of Biological Sciences, Mystery University 1
Thesis title: Novel mysteries from mysterious animals
(Nominated for gold medal award) August 2011- November 2015

M.Sc. Biotechnology, Mystery University 2
(Ranked 2nd in class) July 2009- May 2011

B.Sc. Biotechnology, Mystery University 3
(Ranked 1st in class) June 2006- May 2009

Publications and patents

Patent

Postdoc, M., Other anonymous researchers, Novel Mysteries, US Patent (Application No. 1; Patent covering 9 different mystery elements and >20 variants from 5 different mystery species)

Manuscripts under review

Postdoc, M., Other anonymous researchers, An impressive and anonymized research project (Submitted to Well-Known Journal).

Sample: Anonymized academic CV converted to industry resume – first draft

This first draft of a resume draws out specific skills, but likely spends too much time on technical skills beyond what job postings request. It also uses academic jargon, like “fellow” instead of “researcher.”

Mystery Postdoc, PhD

Postdoctoral Researcher, McMaster University, Canada
111-111-1111, mpostdoc@mcmaster.ca, goo.gl/e11111

Accomplished scientist with expertise in drug development, preclinical studies, vascular proteins and hematology. Outstanding biochemistry and molecular biology scientist with experience in 5 different projects in 4 countries resulting in 1 patent and 7 publications in top notch peer reviewed journals.

Relevant Skills

- **Patient recruitment and clinical data management**
 - Preparation of **regulatory documents** for research **ethics approval**
 - **Negotiation skills** for successful purchase of laboratory instruments
 - Designing **animal models** and study protocols to test drug **safety/efficacy**
 - Preclinical **pharmacokinetics** and **pharmacodynamics** assay development
 - *in vivo* and *in vitro* biochemical and enzyme assays, electrophoresis, ELISA, Western Blotting
 - High resolution screening, assay development & validation
 - **Mice and rat surgeries**, cannulations, injections, euthanization
 - Recombinant protein expression and peptide synthesis, protein purification chromatographies
 - **Mass Spectrometry**- LCQ Fleet Ion Trap MS, IT-TOF MS, Triple TOF 5600
 - Shotgun and quantitative proteomics using iTRAQ, SILAC, MRM
 - Stem cell isolation, hematopoietic cell culturing, advanced flow cytometry
 - DNA & RNA preparation, PCR, quantitative Real-Time PCR, and molecular biology
 - X-ray crystallography- Optimizing crystal screens, data collection, model building, refinement
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Research experience and education

- | | |
|--|----------------------|
| McMaster University | Hamilton, ON, Canada |
| Postdoctoral fellow | Jan. 2016- Present |
| • Leading a Canadian cohort study of over 50 patients with inherited uncharacterized bleeding disorders | |
| • Identified underlying molecular causes of bleeding in 13 patients (manuscript under preparation) | |
| University 2 | Country 2 |
| PhD researcher | July 2011- Dec. 2015 |
| Nominated for PhD gold medal award, as the candidate from Department of Biological Sciences | |
| • Designed, synthesized and studied structure-function relationships, <i>in vivo</i> safety/efficacy models; and initiated pharmacokinetic/pharmacodynamic studies of a novel family of anticoagulant peptides from tick saliva (Obtained US patent as the first inventor, manuscript accepted in Impressive Journal) | |
| • Identified novel anticoagulant and immunomodulatory protein families from tick saliva using a combination of transcriptomic and proteomic approaches (manuscript under preparation) | |
| University 3 | Country 3 |
| Visiting scientist part of PhD | Feb. 2013- July 2013 |
| • Developed and validated a novel microfluidic chip based bioassay platform for the rapid identification of anticoagulants from small amounts of complex mixtures as starting material (manuscript published in Impressive Journal 2) | |
| University 4 | Country 4 |
| M. Sc. Biotechnology | July 2009- May 2011 |
| (Ranked 2nd in Department of Biotechnology with aggregate score of 85%) | |
| • Anonymized research project 1, Jan- May 2011 | |
| • Anonymized research project 2, National Institute of Virology, Summer internship, May- June 2010 | |
| University 5 | Country 5 |
| B. Sc. Biotechnology | June 2006- May 2009 |
| Ranked 1 st in College in Department of Biotechnology with an aggregate score of 75% | |

Sample: Anonymized academic CV converted to industry resumes – final versions

The next two samples show the first page of the candidate's resumes for two different roles, in different fields. Each opens with a more easily scanned set of accomplishments and includes key words from specific job postings the author is interested in. Job postings and your research into roles of interest will help you tailor each resume and cover letter. The donor of these documents spent 2 ½ hours the first time they customized a resume. Expect subsequent customization to take less time, as you become more familiar with the strengths employers are looking for in your areas of interest.

Mystery Postdoc, PhD

Postdoctoral Researcher, McMaster University, Canada
111-111-1111, mpostdoc@mcmaster.ca, goo.gl/e11111

Accomplished scientist with expertise in drug development, preclinical studies, vascular proteins and hematology. Outstanding biochemistry and molecular biology scientist with experience in 5 international projects in 4 countries, resulting in 1 patent and 7 publications in top notch peer-reviewed journals.

Highlights

- 4+ years' experience in designing, synthesizing, purifying and characterizing novel bioactive molecules
 - Developed bioassays to identify lead compounds, including activity, selectivity and physical properties
 - Obtained patent on novel family of compounds as primary researcher
 - International scientific visibility: presented research findings at international meetings in 7 different countries
 - Prepared regulatory documents for research ethics approval, and Standard Operating Protocols for laboratory techniques
 - Negotiated successful purchase of laboratory instruments each worth \$100,000
 - Streamlined research with thorough initial review of available biological data
 - Invested time in managing relations with potential partners such as Life Sciences Ontario
 - Collaborated with 4 cross functional teams from 5 countries; managed short-term collaborations with research teams in two additional countries
 - Trained and managed junior research professionals
-

Research experience and education

McMaster University
Postdoctoral Scientist

Hamilton, ON, Canada
Jan. 2016- Present

- Lead Canadian cohort study of over 50 patients with inherited uncharacterized bleeding disorders
- Identified underlying molecular causes of bleeding in 13 patients (manuscript under preparation)

University 2
PhD researcher

Country 2
July 2011- Dec. 2015

Nominated for PhD gold medal award, as the candidate from Department of Biological Sciences

- Designed, synthesized and studied structure-function relationships, *in vivo* safety/efficacy models; and initiated pharmacokinetic/pharmacodynamic studies of a novel family of anticoagulant peptides from tick saliva (Obtained US patent as first inventor, manuscript accepted in FASEB Journal)
- Identified novel anticoagulant and immunomodulatory protein families from tick saliva using combination of transcriptomic and proteomic approaches (manuscript under preparation)

University 3
Visiting scientist part of PhD

Country 3
Feb. 2013- July 2013

- Developed and validated novel microfluidic chip based bioassay platform for rapid identification of anticoagulants from small amounts of complex mixtures as starting material (manuscript published in Journal of Anonymous)

University 4
M. Sc. Biotechnology

Country 4
July 2009- May 2011

Ranked 2nd out of 25 in Department of Biotechnology with aggregate score of 85%

- M. Sc. Project: Anonymized project 1, Jan- May 2011
- Anonymized project 2, National Institute of Virology, Summer internship, May- June 2010

University 5
B. Sc. Biotechnology

Country 4
June 2006- May 2009

Ranked 1st out of 45 in College in Department of Biotechnology with aggregate score of 75%

Mystery Postdoc, PhD

Postdoctoral Researcher, McMaster University, Canada
111-111-1111, mpostdoc@mcmaster.ca, goo.gl/e11111

Accomplished scientist with expertise in drug development seeking Medical Science Liaison positions. Outstanding oral and written communication skills with experience in 5 international projects, working in 4 countries resulting in 1 patent and 7 publications.

Highlights

- Expertise in drug development and experience in diverse therapeutic areas (cardiovascular disorders, hematology, infectious disease)
 - Liaise with cross functional research teams from 4 different countries, and managed short-term collaboration with research teams in 2 additional countries
 - Excellent presentation skills: oral and poster presentations at international scientific meetings in 7 different countries, and industry partners
 - Educated disease awareness to groups of patients and healthcare professionals
 - Excellent communication and collaboration skills: authored 8 research articles in high impact peer reviewed journals
 - Prepared regulatory documents for research ethics approval and protocols
-

Research experience and education

McMaster University **Hamilton, ON, Canada**
Postdoctoral Researcher **Jan. 2016- Present**

- Present scientific and clinical findings to groups of scientists, clinicians and other key opinion leaders in Ontario and Quebec monthly, and participate in decision making for critical disease control
- Lead a research team of clinicians and scientists to study a Canadian cohort of 50 patients for the identification of underlying cause of bleeding in patients with bleeding disorders
- Identified underlying molecular causes of bleeding in 13 patients
- Identify novel and medically viable healthcare strategies as part of project prioritization groups

University 2 **Country 2**
PhD researcher **July 2011- Dec. 2015**

Nominated for PhD gold medal award, as the candidate from Department of Biological Sciences

- Presented scientific and clinical findings to groups of clinicians, and scientists from academia and industry; managers, venture capitalists and angel investors, to establish academia-industry collaboration and raise funding to facilitate drug development from preclinical stage to clinical phase-I
- Designed, synthesized and characterized novel family of compounds that are currently being developed as cardiovascular therapeutics (*Patent obtained*)
- Identified novel families of compounds from tick saliva using combination of next generation technologies

University 3 **Country 3**
Selected as visiting scientist to complete part of PhD **Feb. 2013- July 2013**

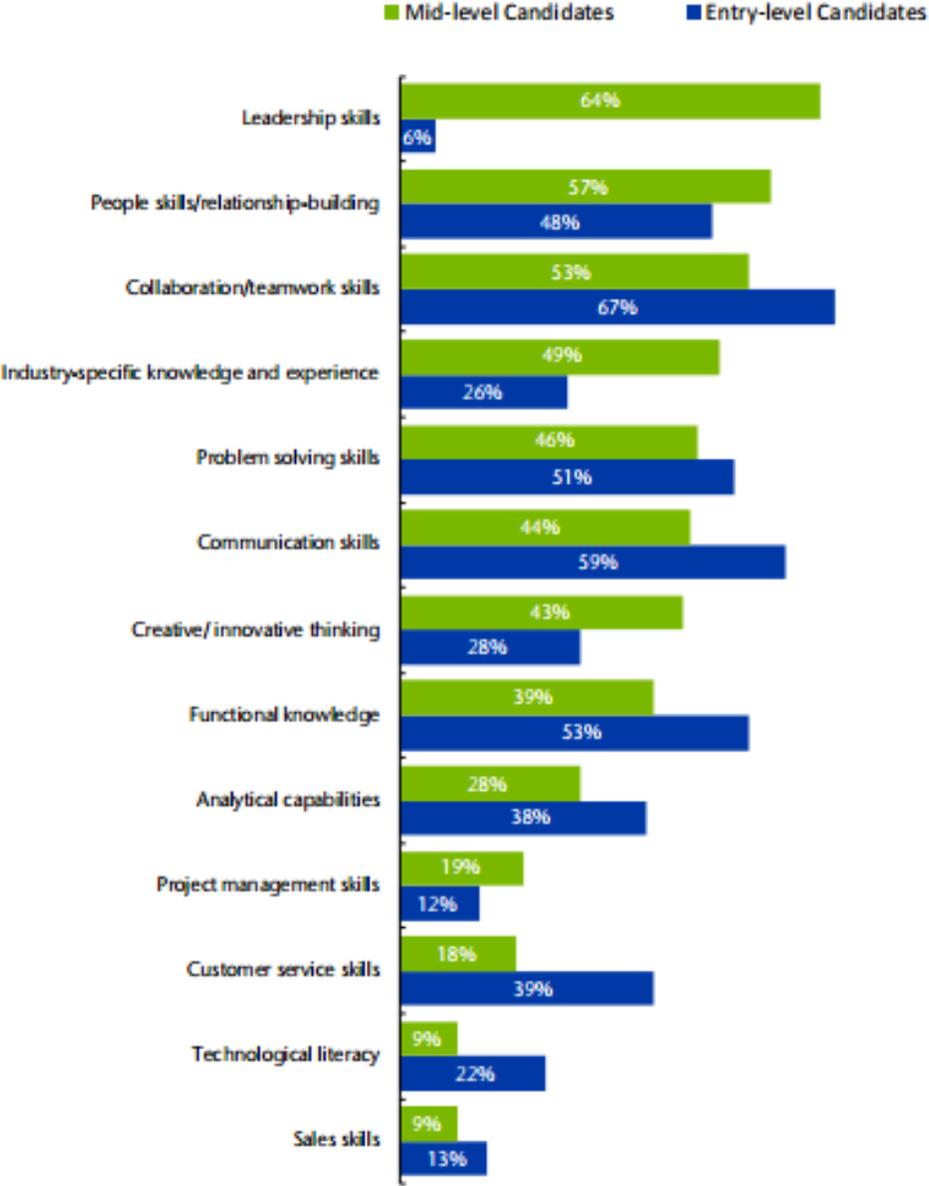
- Collaborated with fellow scientists to establish collaboration, and served as point of contact between University 2 and University 3 for 3 years
- Developed and validated novel platform for rapid identification of bioactive compounds from tiny amounts of complex mixtures as starting material

University 4 **Country 4**
M. Sc. Biotechnology **July 2009- May 2011**
Ranked 2nd out of 25 in Department of Biotechnology with aggregate score of 85%

University 5 **Country 4**
B. Sc. Biotechnology **June 2006- May 2009**
Ranked 1st out of 45 in College in Department of Biotechnology with aggregate score of 75%

The candidate who donated the above resume samples became aware, through research with industry contacts, of the value of soft skills. The graph below provides insight into employer perceptions of the most desirable soft skills.

When evaluating candidates, which of the following skills and capabilities are most important to your company?



A 2016 survey of 90 large Canadian employers highlights the importance of transferrable skills. From the Business Council of Canada’s report on [“Developing Canada’s Future Workforce.”](#)

Managing your work search

Whether you are planning to work for someone else, or to create your own work as an entrepreneur, networking will be important for you. Despite preconceived notions about networking as “sales,” it can and should consist of finding genuine ways to express your value and build real relationships. It is also immensely important: the positive impacts of having “open networks” – groups of people in your life who do not all know one another – are well documented. If you’re relatively new to Canada, networking is even more important; most or all of your current contacts may be in your academic network.

Again, MyGradSkills courses will help you avoid some of the pitfalls that impact postdocs and others with PhDs. These courses are particularly useful, and were designed by a career advisor who worked with postdocs. They provide you with more detailed information than most blogs and online articles about how to research industries, companies and roles to which you might apply. Equally useful, the courses review how employers prefer to hire candidates, and how you can make those preferences work to your advantage. It boils down to avoiding putting yourself in extremely large groups of candidates (say, by applying mostly to online job postings), and putting yourself, instead, in smaller groups, so that you only have to stand out compared to a few people, instead of hundreds. This involves coming up with your own lists of organizations to apply to, talking with people about what you can do, and applying for appealing roles even when there isn’t a job posting. Details are in the course.



Happily, your training prepares you to do well in the job market, especially if you’re willing to eschew common practices and do the legwork required to research organizations, network, and apply regardless of apparent vacancies. The Conference Board of Canada reports that people with PhDs fare well in the Canadian labour market,

and most are satisfied with their careers. There are, of course, unique challenges for postdocs.

One challenge is deciding if or when to discuss your aspirations with your PI or supervisor. The most obvious place and time for this is during your discussion of your Individual Development Plan (IDP). This is a meeting that you request with your PI/supervisor to review your progress and goals. McMaster has resources to help you prepare for these meetings and get the most out of them. From the Postdoc Orientation protocol, you can access <http://myidp.sciencecareers.org>, a site that will walk you through the process of creating an IDP.

Even if you hope to stay in academia, scheduling IDP meetings is a great way to stay connected with your PI, get a better sense of what strengths your PI/supervisor appreciates, what they might not be aware that you have to offer, and how you can make progress towards your own goals and theirs. Some people report that PIs are very open to discussing post-academic career options, and can even offer to introduce their postdocs to corporate partners. Others have opted to keep their non-academic work search private. You will need to use your judgment to decide whether your PI can be an asset to your career exploration and work search.

Another work search challenge is talking about a career shift with those who have known you as an academic. Colleagues, mentors, friends and family may feel invested in your career path, and may express concern that you are considering leaving academia, especially if you don't yet know what you're pursuing next. [Having a strong career story](#) can go a long way to alleviating their concerns, or at least getting them to put those concerns on hold. You'll find a few examples of career [stories for networking conversations](#) and [questioning by loved ones](#) on the University Affairs Careers Café blog. In either case, the goal of a career story is to help your audience help you, whether that is to share information with you; facilitate an introduction; offer their own ideas; or trust that, while you don't yet know what your career goal is, you have good reasons for pursuing other options and are doing so diligently.

Start by getting your job search materials ready such as those that let you research organizations (like McMaster's [business directories](#)), and those that let you further research organizations, roles, relevant skills, and people you should talk with or apply to (see, for examples, [tips on making the most out of LinkedIn](#)).

Further Resources

What you will find below is not exhaustive. It is a partial list of broadly useful resources that were current at the time of updating this document (March 2017). In addition to our list, check

<https://gs.mcmaster.ca/skills-opportunities/opportunities> for further resources. If you find broken links in this guide, a

keyword search on a reputable resource (like [The Chronicle](#) or [University Affairs](#), or McMaster's own "[Job Search in 10 Minutes a Day](#)") will likely turn up results. If you do not find what you need here, keep looking: there are large, informal communities of post-academics online who share ideas, resources, and encouragement.



Employability Skills – These resources answer the question, “What are they looking for?”

<http://thebusinesscouncil.ca/wp-content/uploads/2016/02/Developing-Canadas-Workforce-March.pdf>

<http://www.naceweb.org/career-readiness/competencies/research/>
www.insidehighered.com/search/site/nace

<http://www.mitacs.ca/en/newsroom/publication/professional-skills-training-essential-complement-research-excellence> - Mitacs also offers workshops related to employability skills

www.mcmastercce.ca/ - Close to home, time-limited training opportunities

Job Boards and Labour Market Information – This is a *short* list of job boards and information about the labour market. There are many more – and some of the best and most specific will be unique to your field, and thus too specific to list here. Try looking for professional organizations relevant to you, including on LinkedIn, where some employers post to the discussion

boards of professional groups (where they can post for free), rather than to the general job board.

www.workingatmcmaster.ca/careers/index.php

www.academiccareers.com

www.universityaffairs.ca/search-job/

www.phdcareerguide.com/

<http://workforceplanninghamilton.ca/build-your-career>

www.jobbank.gc.ca

www.glassdoor.ca

<http://charityvillage.com/>

<https://versatilephd.com/>

<https://careers.insidehighered.com/jobs/> - The “dual search” function allows you and a partner to run a parallel search for job postings

Blogs and articles – Get tips and insight from those who have gone before you in considering and making career transitions.

<http://fromphdtolife.com/>

<https://versatilephd.com/>

<http://jobsontoast.com/> - A particularly relevant post is

<http://jobsontoast.com/how-to-research-your-target-job-sector/>

www.insidehighered.com/careers-topics/alt-ac-careers

<https://chroniclevitae.com/news>

www.universityaffairs.ca/career-advice/

<http://whatareallthephds.tumblr.com/> - Light on advice and heavy on the profilees’ insights into their own career trajectories

<http://www.beyondacademe.com/> - No longer regularly updated, but excellent content, aimed at historians, and relevant to all postdocs, with its focus on questioning assumptions about non-academic work and how to find it

<http://phdsatwork.com/week-in-the-life/> - Searchable by company, sector and academic degree

<http://www.gradsquare.com> – Gradsquare’s [blog](#) features podcasts on post-academic professionals.

[Modern Language Association](#) - Assembles advice, rather than full profiles, from people in post-academic careers

Also [search Twitter](#) for hashtags such as #altac, #postac, #postdoc and #withaPhD to network and join a wider discussion about grad student careers