

Goals for Academia-bound Graduate Students in Research-oriented Psychology in North America

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The following assumes that as a psychology grad student your overarching objective is to land a tenure-track position on the faculty of a research-intensive university. Some of the text below references UVic's Cognition and Brain Science (CaBS) program, but the advice is relevant to other areas of research-oriented psychology and to other universities. You do not have to attain any of the goals listed below. In fact, you don't have to go to graduate school at all (most people don't). And even if you do earn graduate degrees, you don't have to do so with the aim of securing a tenure-track position in a research-intensive university. Such positions have many drawbacks, and there are innumerable other meaningful and rewarding things one can do in life (with or without advanced degrees). Although CaBS profs are generally keen to see their students develop into CaBS profs, whether you want to do that or something else is entirely up to you¹. But if academic science is your path of choice, or if you simply want to excel as a grad student in research-oriented psychology, read on.

It's not unusual for an entry-level, tenure-track position in psychology in Canada to attract more than a hundred applications, with most applicants meeting the minimal qualifications for the position. Typically, only three applicants get interviewed. The department conducting the search will be keen to hire the very best candidate (i.e., the person most likely to be a productive, high-impact researcher who attracts external funding and top-notch students, teaches effectively, and contributes to the collegial life and equity/diversity aims of the department). To be one of those chosen few, you must work toward each of the following:

1. Publish. To be competitive on the job market, you need at least several publications in refereed journals when you apply. There isn't a magic number (it depends on authorship order, the journals in which the works are published and the attention the works attract, as well as other variables such as the prestige of the hiring institution and other attributes of the candidate). A reasonable goal is to have your name on one submitted manuscript by the end of your second year as a graduate student, and one additional submitted manuscript each year thereafter, so that by your fourth year you could hope to have one piece published and another in press and yet another under review. Ideally, you will be first author on at least one of those. Also ideally, the work will have substantial merit (not just publications, but good and valuable ones). Conference presentations (posters or papers) are also important: Do as many as you can.

2. Cultivate your supervisor's appreciation of your abilities. Gross and unfair as it may seem, the supervisor's letter of reference plays a major role in determining the success of job and grant applications. Hiring and grant-review committees look at these letters with great care, and the standard is very high. A letter that is merely lukewarm about aspects of the applicant's performance (let alone one that is overtly negative) can be the kiss of death. Supervisors typically do their best to write supportive letters for their students, but they generally balk at outright lying. So if your supervisor doesn't hold you in high regard, you are in an awkward spot.

¹ **APA resources on careers in psychology, including non-academic careers:**

<https://www.apa.org/action/careers/index.aspx>

<https://www.apa.org/careers/resources/guides/careers.pdf>

<https://www.apa.org/careers/resources/profiles/index.aspx>

3. Network. Create positive relationships with at least two other potential reference-letter writers (both of whom should be psych profs, ideally with strong reputations and with expertise that not too far removed from your research areas). Being active in grad class sessions (i.e., asking questions, making observations, etc.) is valuable in this regard. So too is actively participating in the intellectual life of the department (e.g., attending departmental colloquia, job talks, Masters and PhD defenses, student-sponsored events, etc.; speaking often in the Cognition and Brain Science Seminar (CaBSSem) [both in terms of hosting the seminar and in terms of raising questions and comments on others' presentations]; finding other opportunities to make your presence felt and your skills and abilities apparent). It's probably not wise to attend every departmental talk (because that would take too much time away from other work), but it is valuable to rub intellectual shoulders with a variety of faculty and grad students. Also, cultivate opportunities to conduct research with faculty members other than your supervisor (e.g., by doing an independent studies course with them, or just volunteering ideas); this can help you publish more, creates a good impression of professionalism and collegiality, and provides a great source of a positive letter of reference (assuming that you follow through on the collaboration in an impressive manner). Networking in other university's psychology departments is also valuable: E-mail authors whose work you care about to ask if they have in-press pieces they are willing to share with you or to ask questions about their work, and talk to people at conferences about their research. The vast majority of psych researchers will be flattered by your interest. Of course, be sure that your supervisor is OK with you developing such extramarital relationships. If your supervisor approves, be sure to maintain an appropriate balance between these affairs and your main graduate work.

4. Get funded. Secure external funding for your graduate studies (e.g., NSERC PGS-A or B, SSHRC fellowship, etc.) and for a post-grad postdoctoral fellowship [NB: NSERC and SSHRC are among the few entities that care about grades in graduate course-work.]. Getting such funding will please and impress your supervisor (see point 2 above). It will also impress others: Such funding has great symbolic value, because it shows that you have the savvy to apply for funding and the expertise and accomplishments to secure it. Universities want to hire faculty who will be successful at getting research funding, and a record of success at securing your own grad and postgrad funding is taken as a good predictor. Also, having such funding will reduce the amount of time you have to spend working for money (e.g., as a TA), thereby increasing the amount of time you can dedicate to publishing, interacting with your supervisor, networking, etc.

5. Develop and document teaching chops. Get some teaching experience, or proxies for teaching experience (e.g., giving papers at conferences, guest lecturing, etc.). I've put this last because I think most hiring committees assume (questionably) that people who have succeeded at other aspects of graduate school will be able to figure out how to teach. Also, teaching promise is usually weighted less heavily than research promise. Nonetheless, having some teaching experience will strengthen your application (especially if you can provide encouraging data on students' ratings). My hunch is that you'll gain almost as much in the eyes of hiring committees from one successful course as from six.

How?

It was easy to list the foregoing goals. It would be impossible to explain precisely how to accomplish them. Below are some very general principles that I believe are important to the success of academia-bound cog-psych graduate students.

A. Love what you do. The corner stone, the foundation on which everything rests, is caring about and enjoying and believing in the research you do. If you aren't excited about your research, and if you can't have fun while working on it, you'll have a hell of a time attaining the goals listed above (and an even

harder time succeeding in a tenure-track position). One way to assess this is with Marcia Johnson's Shower Test: If you find yourself thinking about your research while you're taking your morning shower, you're on the right track, especially if those thoughts are at least sometimes positive ones. It's not unusual for it to take a while to develop an appreciation for a line of research, so don't demand love at first sight, but if months and months go by with you slogging through readings and plodding through data collection, you need to either figure out a way of getting enthused about that line of research or start doing something else.

B. Put in the time. A major component of the recipe for success is simply putting in the hours. There's no set rule, but during the regular school year 50 to 60 hours per week is a reasonable estimate for most students; during summer it is advisable to take some time off (say a week or two at the beginning and a week or two at the end of the summer) and to throttle back a bit on the hours (say to 40/week) to avoid burnout. A related point is that you must learn to manage your time, allocating some to course work, some to research, some to networking, etc. Yet another related point is that, although work time is important, it is also essential to make time for play and for sleep: There's no use driving yourself to the point of being dull and exhausted all the time.

C. Strive to have a good working relationship with your supervisor. It is essential to be on good terms with your supervisor. If you don't get along, or if your supervisor doesn't have a keen interest in your long-term success or doesn't seem to know how to promote it, then it may be wise to switch to a different supervisor. Being on good terms and creating a positive impression demands regular and active communication. Don't be shy: Actively engage your supervisor, giving reports on your progress, your ideas, and obstacles you've encountered. Obviously, it's not advisable to go to your adviser about every little problem you encounter; that might give your supervisor the impression that you are dependent (which is not what you want mentioned in your letters of recommendation!). But you must keep your supervisor in the loop as to what you are working on, how it's going, what you are thinking about it, etc. Supervisors vary in how often they want to be updated/consulted, as well as in how tightly they want to direct your research versus push you to be independent; you must determine your supervisor's expectations/preferences in this regard and try to fit with them, and keep the communication channels open. (Of course, supervisors have reciprocal responsibilities but you cannot control your supervisor, only yourself.)

D. Be resilient. As Robert J. Sternberg wrote in a President's Column in the May 2003 APA Monitor, "What distinguishes those who are highly successful from others is, in large part, resilience in the face of humiliations, defeats, and setbacks of various kinds . . . almost all of us go through these periods of staggering defeat . . . The question is not whether you will go through it; it is how you will come out of it" (p. 5). Loving what you do and cultivating a sense of humour and fun will help foster such resilience, but sometimes it's going to take plain old grit and gumption to dust yourself off and try again.

E. Actively work at developing cutting-edge scientific skills. Even if they seem daunting and even if you need help to learn them². Learn how to write code (e.g., programming online experiments, exploring computational models). Bust your chops on statistics. Learn how to use R for data analysis and perhaps R Markdown for writing papers. Learn Bayesian approaches to data analysis³. Learn multi-level analysis.

² **Useful resources for programming & data science:**

DataCamp (In-depth tutorials for R, Python, GitHub and more): <https://www.datacamp.com/>

CodeAcademy (In-depth tutorials for HTML/CSS, Python, Java, etc): <https://www.codecademy.com/>

³ **Useful resources for aspiring Bayesians:**

Figure out GitHub. Master cool ways of graphing data. Having these super-general tools will enable you to do more and better work and qualify you for a variety of job situations.

F. Actively work at cultivating your communication skills. It is very difficult to succeed as a graduate student without being an excellent listener, reader, speaker, and writer. And impossible to thrive as a faculty member without those skills. In my experience, most students who get into grad school are quite good at listening and reading, but the range is much wider for speaking and writing. There are many resources available to help people hone skills in those domains. Too many to list, but I'll mention just two: (a) corny as it may sound, Toastmasters can help if you find public speaking daunting and (b) William Zinsser's book *On Writing Well* is brilliant.

G. Be aware of the Society for the Improvement of Psychological Science (<http://improvingpsych.org/>) and the Center for Open Science (<https://cos.io/>) and its Open Science Framework (<https://cos.io/our-products/open-science-framework/>)⁴. Understand and contribute to these groups' efforts to increase the transparency and replicability of psychological science. Practice the promotion of replicability in your own work (e.g., by registering detailed plans for analyzing the data from a study before you see any of the data, using tools that reduce error rates, having others double-check your code and analyses etc.).

H. Be a team player. In science, the success of one's research often depends on the efforts of others. This is especially true when working in a lab with other graduate students and research assistants. When other people are involved in your projects, be clear about your expectations. When you work on others' research, follow through on your commitments. If you have questions about how credit for team work is to be allocated (e.g., authorship order), raise them.

I. Show your stuff. Strive to make independent intellectual contributions to your research. Don't passively wait for your supervisor to tell you what to do and then mechanically do it. Typically, in the first couple of years the supervisor plays a major role in setting the course of the student's research, but as you go along (and especially when working on the dissertation) you should be making more intellectual/conceptual contributions and taking on the leadership of the work (a transition from student to collaborator, without usurping the supervisor's role). The PhD symbolizes competence as an independent scientist, and you want to actualize that symbolism and make it apparent that you can do more than follow instructions.

J. Be Visible. Make your presence felt in the department and in the wider intellectual community (for the non-academic community, consider the UVic Speakers Bureau: <https://www.uvic.ca/communications/speakersbureau/index.php>). Give talks about your research, and attend talks by others (including, e.g., job candidates' talks) and, if you can, raise interesting questions during the Q&A period. Chat with faculty outside (as well as within) class time. Contribute to departmental events, look for service opportunities (e.g., as grad rep at faculty meetings), and attend

Psychonomic Bulletin & Review 2018 Special Issue on Bayesian Statistics:

https://link.springer.com/journal/13423/25/1?wt_mc=alerts.TOCjournals&utm_source=toc&utm_medium=email&utm_content=13423&utm_campaign=

JASP (Open-source software for conducting Bayesian analyses: <https://jasp-stats.org/>)

⁴ **Useful COS/OSF resources:**

Open Science Framework 101 (guide to using OSF for project management & pre-registration):

<https://www.youtube.com/watch?v=NQRhwqWPXeA>

Center for Open Science YouTube Channel: <https://www.youtube.com/channel/UCGPiVf8FsQ23BehDLFrQa-g>

departmental social functions. These efforts will reap two benefits: (a) they increase your chances of developing a collaborative relationship with a faculty member (which in turn may help you publish, and publish outside of a narrow specialty, as well as mint a potential reference writer) and (b) they enable your reference writers to comment on your fine record of contributing to the life of the department. Follow interesting psychologists online via social media such as Twitter and blogs, perhaps posting your own comments when you are confident that you are on solid ground.

K. Be topical and/or diverse. If you are working in a very hot area (e.g., cognitive neuroscience), you can probably afford to be quite specialized in your research. But if all of your work fits within a narrow compass, and if that topic is not of great current interest, you will grossly limit your job prospects. How can you tell what's hot and what's not? Two indicators of hot topics: (a) they routinely draw dedicated symposia (and poster sessions, etc.) at large conferences and (b) they get published in the top general-interest journals (e.g., *Psychological Science*; *Current Directions*; *Psychonomic Bulletin and Review*; *JEP:General*; *Cognitive Psychology*; *Psychological Bulletin*).

L. Multi-task. It can be beneficial to have more than one line of research (at least after the first year or so of graduate work). That way, if one project gets frustrating or boring you can temporarily shift attention to the other. It is important, though, not to get stretched too thin; you probably don't have the resources to share among three or four lines of research and still have at least one of them produce a publication each year from the second year on. A related point is to select research problems on which you have a reasonable chance of making demonstrable progress in a relatively small amount of time.

M. Use sub-goals. It's rarely feasible to go from nothing to a high-impact refereed publication in one giant leap, and the feeling that you should do so can be intimidating. Chart smaller goals, such as developing a proposal for a simple study, presenting that proposal to the CaBSSem, then conducting the study and presenting the results at a subsequent CaBSSem or perhaps at a small regional meeting such as NorthWest Cognition And Memory (NOWCAM).

N. Keep records. Keep typed records of what you do and of your ideas. Not a log of every minute's activity but, say, a weekly summary of what you've worked on that week, with entries for ideas as they pop to mind, and entries regarding conversations you've had with your supervisor. Review these records periodically. It is also good to maintain a bibliography of APA-style references of works you've read.

O. Look before you leap. Before you start collecting data in a new project, make sure you (a) have a good grasp on the aims of the project, (b) know what other researchers have done and found in that particular area, and (c) think through all the way to the data analysis/interpretation phase. It's not good to invest a lot of time and energy into something before discovering that the results will be inherently ambiguous, or that the experiment has already been published, or that there is no straightforward way to analyze your data. Moreover, preparing a detailed written plan for a study including fine points of the analytic strategy (e.g., will some data be excluded and if so on what basis? Will some variables be transformed?) is a crucial part of science, especially if you are going to use inferential statistics.

P. Know when to say No. This applies to every aspect of your career. To manage your time effectively, you must decline opportunities and abandon projects if they interfere too much with your long-term aims. Keep your eyes on the prize: Continually monitor your commitments, your goals, and your progress.

The foregoing is, of course, easier said than done, but if psychological science was easy everyone would do it. There are lots of resources out there (e.g., <http://www.apa.org/apags/resources/> or just Google “resources for graduate students in psychology”). Good luck and have fun!

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