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Advice for Ph.D.s in finding a nonprofessor position

Submitted by Jake Livengood on October 12, 2015 - 3:00am

Life after the Ph.D. can be scary.

As a Ph.D. student, it is easy to doubt your next career step in making the transition to life after grad school. Students are often so zoomed in on a specific area of research that they may not be aware of their own skills and abilities beyond that focus. Along with that doubt often comes a lack of familiarity with the culture and expectations of a nonprofessor position. While it can be a comfort to know that there are options, making the transition from Ph.D. student to a nonprofessor full-time job after graduate school can be confusing and frustrating.

To help Ph.D. students explore some industry careers -- and increase prospective options beyond the academy -- I'd like to provide advice and a high-level overview of industry career paths for Ph.D.s that I've obtained from various employers with whom I've worked.

While providing career guidance to Ph.D. students at the Massachusetts Institute of Technology, I have had the opportunity to meet with numerous employers from different industries. When an employer reaches out to our career services, a team of staff members, including employer relations staff and career specialists, meet with its representatives for a recruitment strategy meeting. During these meetings, we often discuss the skills and qualities that those employers most desire.

After more than 40 such strategy meetings with employers, I can offer some of the insights that they've provided about the following career options: education (outside of being a professor), data science, financial services and management consulting.

Education

This list could go on for quite some time. However, a few options come to mind: instructional design and administration. Instructional designers help faculty develop course

materials, both in person and online. In educational administration, Ph.D.s work in a variety of academic and student affairs areas. These areas include advising, mentorship and research capacities within higher education and K-12 settings. (This is by no means an exhaustive list.) For example, the Broad Institute in Cambridge, Mass., has Ph.D.-trained staff members who provide science education outreach to K-12 schools. Ph.D.s work with colleges and universities as online instructional designers and also in educational outreach programs with museums, foundations and other companies.

Primary desired skills: That will depend on the specific area within education. However, it is expected that you are able to work collaboratively and communicate well.

How to get those skills: It is important to try on different roles as a Ph.D. student. That can be accomplished through involvement in student clubs, volunteerism, and teaching or serving on departmental committees.

Data science

Data scientists work in a variety of industries to use data to inform decision making. The industries that hire data scientists range as widely as the interests of Ph.D. students and include health care, politics, sports, entertainment, government and transportation.

Primary desired skills: Programming languages including Python and R and statistical analysis. The ability to communicate complex findings to a variety of audiences.

How to get those skills: "If students don't know a programming language, we recommend that they find a large publicly available data set and use that to develop their own projects," said a representative from Visa. Also, many outreach programs exist to help develop programming language experience. For example, data science fellowships are available, along with programs for underrepresented groups, such as [Girl Develop It](#) [1]. Additional options include learning an introductory level of programming on sites like [Codecademy](#) [2]. Networking is also crucial to break into high-interest fields such as sports and entertainment data science.

Financial services

This can refer to: (1) quantitative finance with investment banking, venture capital or other areas, (2) sales and trading, or (3) financial technology.

Primary desired skills: Strong applied math and statistics, along with computer programming. Representatives from Optiver noted that analytical ability is important and is often assessed during the interview process with mental math tests. A keen interest in the field of finance is also required, along with the ability to learn new topics quickly.

How to get those skills: You may have already obtained many of the desired skills from courses you've taken in undergrad or graduate school. Student club involvement can also be helpful to gain competence in and insight into this field. Internships are often available for Ph.D.s in the summer.

Management consulting

Management consultants provide guidance to clients as they look to make various business decisions. This could help a client break into a new market, maximize profitability or determine a strategic direction. Management consultants work with clients in all industries, including education, government and Fortune 500 companies.

Primary desired skills: Each consulting firm looks for leadership abilities, teamwork and the ability to communicate with a variety of constituents at all levels of an organization. They also want employees who can analyze a situation from a holistic perspective and solve problems creatively. Consulting firms value a high GPA at all collegiate levels, high standardized test scores and a degree from a college or university with a strong reputation.

How to get those skills: “We highly recommend students show their leadership ability,” said a representative from McKinsey and Company. “This doesn’t necessarily have to be a position of president in a student club, but it should highlight involvement on campus.” Students interested in consulting should plan ahead, as firms typically hire nearly a year in advance of graduation. The process of interviewing for consulting is very specific and includes case interviews and behavioral questions. (Consulting firms often have excellent resources about the interview process on their websites. Also, many campuses have case competitions, which provide excellent experience in working with case interviews and also team dynamics.)

Networking is also key, so it is important to attend career events. In addition, employers strongly recommended that you join a campus student consulting club, where you can often get experience with real clients and practice cases. Many consulting firms offer brief summer leadership programs for students entering their final year of the Ph.D. (although the process of getting into these programs is highly competitive).

Helpful Next Steps

Check out your campus resources. Ph.D.s can go into many industries outside of the specific paths covered here, including industry-specific research positions. I encourage you to check out your university’s or department’s report about where Ph.D. students go following graduation.

For example, MIT has an [Earned Doctorates Survey](#) ^[3] that shows employers who have hired Ph.D. students by academic discipline, along with other insightful information about employment after graduation. It will also be helpful to discuss your specific situation with a career adviser at your institution. Additional resources are also available, such as the [Versatile PhD](#) ^[4], an online community dedicated to nonacademic and nonfaculty careers for Ph.D.s.

Conduct informational interviews to learn more about a specific career path. This is a career conversation where you interview a connection from a friend, family member, colleague, your department or university or other source. (Your previous academic institutions and employers are also helpful in establishing connections for informational interviews.) You don’t ask for a job but rather seek career advice, information and referrals. For more information about how to do informational interviews, [check out these resources](#) ^[5].

Review job postings. Find out more details regarding the skills and experiences desired by employers in your specific area of interest through your campus career services job board, or aggregate search sites such as LinkedIn or Indeed.

It is important to note that this is only a sampling of the many career paths that Ph.D.s can follow. I did not include some career paths because they have been previously covered in "Carpe Careers." For example, breaking into government positions was covered by James Van Wyck in his piece "[The Federal Option](#) ^[6]." In addition, Melanie Sinche's piece "[Tracking Ph.D. Career Paths](#) ^[7]" is an excellent complement to this content.

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Links:

[1] <http://www.girldevelopit.com>

[2] <http://www.codecademy.com>

[3] <https://gecd.mit.edu/sites/default/files/about/files/2014-edd-survey.pdf>

[4] <http://www.versatilephd.com>

[5] http://www.quintcareers.com/informational_interviewing.html

[6] <https://www.insidehighered.com/advice/2015/08/10/essay-how-new-phds-may-want-consider-careers-federal-government>

[7] <https://www.insidehighered.com/advice/2014/10/27/essay-importance-tracking-phd-career-paths>

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