

Higher Education & Training

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Executive Summary of Neuroscience Graduate, Postdoctoral, & Undergraduate Programs Survey Report (Academic Year 2010-2011)

April 2013

The most recent survey of neuroscience training programs in the U.S. and Canada was conducted in 2011-2012 by SfN and the Committee on Neuroscience Departments and Programs (CNDP). This survey followed the same format as previous biennial surveys that had been conducted by the Association for Neuroscience Departments and Programs (ANDP) prior to its consolidation with SfN in 2009.

These surveys are designed to monitor the evolution of neuroscience departments and programs by tracking several important dimensions, including program characteristics and the number and demographics of faculty and students. Responses were obtained from 97 of the 125 graduate training programs that were SfN Institutional Program (IP) members (78 percent response rate). In addition, responses were obtained from 50 of the 53 undergraduate IP members (94 percent response rate). A large number of survey participants remain the same over the years, enabling valuable longitudinal comparisons to earlier survey results. Below are key findings from the survey data of the 2010-2011 academic year.

Graduate Program Characteristics

- Graduate training programs in neuroscience* exist in various administrative structures and sizes. Some graduate programs are based in a school of medicine, whereas others are based in a school of arts and sciences or span multiple schools within a university.
- Whereas 20 years ago graduate training programs in neuroscience were located predominantly in schools of medicine, now approximately half the programs are university-wide, a development that has stabilized over the past decade.
- In about three-quarters of the programs, the degree awarded to graduate students trained in neuroscience is a PhD in neuroscience or in neurobiology (or a discipline that had those words in their name). In contrast, when the survey was initiated 25 years ago, this number was less than one-quarter.

Graduate Program Faculty

- The number of faculty members per program varies over a wide range, with some programs having fewer than 10 faculty members while others have more than 100. On average, the faculty size is ~42/program, but this belies a distribution where about half the programs have few than 30 faculty members whereas about 15 percent of the programs have more 90.
- On average, ~85 percent of the faculty of these programs have positions in the tenure stream, but approximately 30 percent of the programs have only faculty in the tenure stream.
- Women represented 29 percent of tenure-stream faculty in graduate programs, a number that has

changed little during the past decade. In contrast, women represent almost half (44 percent) of non-tenure-stream faculty members.

- Faculty size and demographics have been stable over the past four surveys.

Graduate Education

- The number applicants, students accepted, and students matriculated varies markedly across programs; for example, in the responding programs, the number of applicants ranged from 4 to more than 200, with an average of ~90 and a median ~70. On average, programs accepted 23 percent of their applicants and matriculated 63 percent. Thus, on average, programs matriculated ~12 students in 2011.
- Women represented 51 percent of the applicants, 52 percent of the students admitted, and 56 percent of those who began graduate training in neuroscience in AY2011, similar to the past two surveys.
- Applicants identified as members of U.S. racial and ethnic minority groups represented 12 percent of the applications, 17 percent of those admitted, and 12 percent of those matriculated.
- Students who are not U.S. citizens represented 31 percent of applicants but only 16 percent of those admitted and 12 percent of those matriculating.
- Fewer than 20 percent of incoming graduate students had an undergraduate major in neuroscience.
- The mean number of graduate students per program, ~39/ program in 2011, has increased more than three-fold over the 25 years this survey has been conducted, though the number has been stable over the last three surveys.
- The average time to degree was 5.5 years, a number that has been stable during the past decade.
- Upon receiving their PhD degree, most graduates (70 percent) pursued postdoctoral research training and 15 percent returned to medical training. (These numbers are similar to those in recent surveys.)

Postdoctoral Training

- Most (95 percent) of postdoctoral trainees have a PhD degree, with the remaining evenly divided between those with an MD/PhD degree or just the MD degree.
- The number of postdoctoral trainees per program (~24) is a little higher than the numbers seen in the past three surveys.
- Women constitute 38 percent of postdoctoral trainees.
- In the 2009 survey, when postdoctoral trainees left their institutions, they typically pursued additional training in another postdoctoral position (39 percent) or took a faculty position (36 percent). Unfortunately, in the 2011 survey, very little of this type of data was provided.

Financial Support of Graduate Students and Postdoctoral Trainees

- Almost all predoctoral students receive stipend support. For first-year students, this stipend support comes predominantly from university funds (~70 percent). In contrast, for students after the first year, ~75 percent of the students are supported on research grants or have external fellowship support. Overall, research grants are the major source of graduate student support. Research grants are the major source of support for postdoctoral trainees, especially those who are not U.S. citizens.

Diversity

- Among U.S. citizens in U.S. institutions, members of racial and ethnic minorities represent 14 percent of predoctoral trainees and 9 percent of postdoctoral trainees. Only 6 percent of tenure-track faculty members.

Undergraduate Programs

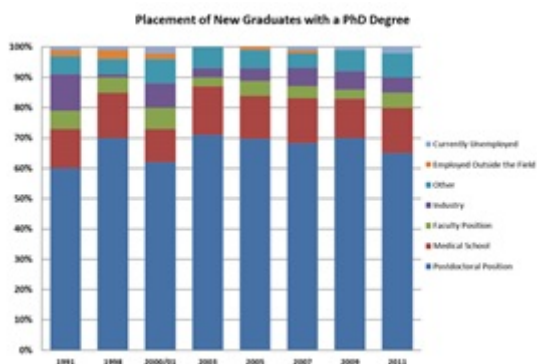
- Of the 50 programs that provided data, a third were at schools that did not have graduate programs, a third were at schools that had graduate programs in neuroscience, and a third were at schools that had graduate programs but not one in neuroscience.
- Only five of the programs (10 percent) were located in a department of neuroscience (or similar name). In contrast, 70 percent of the programs are interdepartmental but offer a bachelor's degree in neuroscience.

Conclusions

During the 25 years this survey has been conducted, there have been substantial changes in training programs in neuroscience, though the past decade has been notably more stable as the discipline and training programs have matured. Neuroscience training programs at the graduate and undergraduate levels exist in a great diversity of sizes and administrative structures, and the stability reflected in the surveys conducted over the past decade indicates that these various structures can all be successful. While there are clear indications that neuroscience is a thriving discipline, the survey results show significant challenges remain. Among them are issues related to underrepresentation of women and minorities as tenure-stream faculty members and in the discipline more generally, heterogeneous backgrounds of incoming graduate students and postdoctoral trainees, and changing employment prospects for students training in neuroscience. The challenges faced by neuroscience departments and programs are not the same as they were when the survey was initiated in the 1980s, and future surveys may be better designed to address some of the current issues.



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Upon receiving their PhD degree, most graduates pursued further research training and accepted postdoctoral positions (65%); this was especially true of non-U.S. citizens (73% vs. 62% of U.S. citizens).

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