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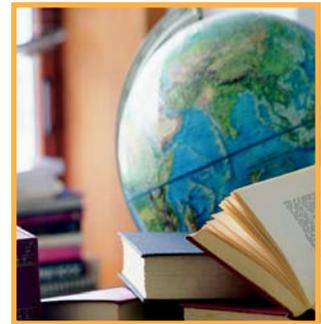
Education Indicators in Canada

Doctoral Students and University Teaching Staff

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Doctoral Students and University Teaching Staff

A recent estimate of the “upper secondary,” or high school, graduation rate in Canada (released in an international context) indicates a higher rate for females (81%) than for males (73%).¹ A similar, yet narrower, gender gap is also seen among those who do not obtain a high school diploma; for example, a recent study of young people aged 20 to 24 reported that, in 2009/2010, dropout rates were lower for young women (6.6%) than for young men (10.3%).² This type of female–male pattern continues as individuals move on to postsecondary education. According to recent data on college and university enrolments in Canada, women accounted for over half of all college enrolments (55%) in 2006/2007, as well as over half of all university enrolments in undergraduate (58%) and master’s (56%) programs in 2008/2009. At the doctoral level, however, the gender difference is reversed, with women accounting for less than half (47%) of students enrolled. Although the proportion of women earning doctorates has risen steadily over the last couple of decades, women accounted for less than half (44%) of all doctoral degrees granted in 2008.

This fact sheet presents a brief overview of the number of students who enroll in and complete doctoral programs at Canadian universities, focusing on the female–male patterns and changes in those patterns over time. As many of the individuals who earn doctorates move into teaching positions at universities, it also looks at the changes in the representation of males and females among university faculty. As some fields of study—or fields of instruction—may be either male- or female-dominated, differences between the sexes are also considered by discipline.

Enrolments in doctoral programs

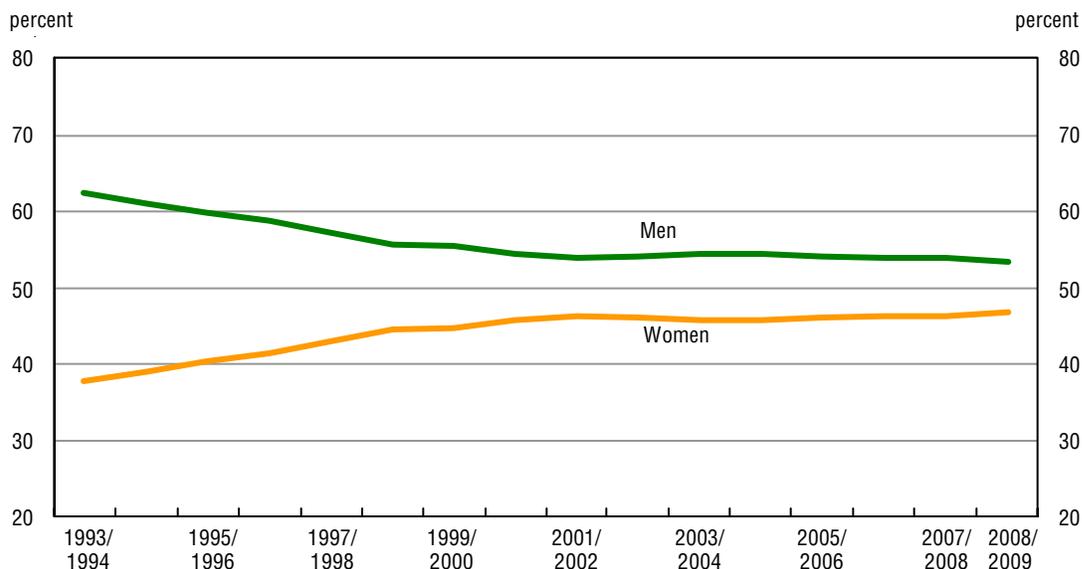
In the 1993/1994 academic year, 26,475 individuals were enrolled in doctoral programs at Canadian universities. With an enrolment count of 16,500, men accounted for 62% of these students, and 9,972 women represented the other 38%.

Recent trends reveal that the *number* of enrolments for doctoral programs rose overall for both men and women between 1993/1994 and 2008/2009; however, the *proportion* of male enrollees declined throughout the period as the proportion of females continued to rise (Chart 1). By the end of the 15 years, the number of women enrolled in doctoral programs had more than doubled, and women accounted for 47%

1. For more information, see Indicator A2, “Upper secondary graduation” in *Education Indicators in Canada: An International Perspective, 2010* (Statistics Canada, Catalogue no. 81-604-X).
2. For the complete article, see “Study: Trends in dropout rates and the labour market outcomes of young dropouts” in *Education Matters: Insights on Education, Learning and Training in Canada* (Statistics Canada, Catalogue no. 81-004; Volume 7, number 4).

of the 42,801 total enrolments. Men still accounted for over half of all enrolments with 22,764, but the 38% increase in their enrolments between 1993/1994 and 2008/2009 was far below the percentage change seen for women.

Chart 1
Proportions of men and women enrolled in doctoral programs, Canada, 1993/1994 to 2008/2009



Note: Represents the number of students who were enrolled in a full-time educational activity on December 1st (November 1st in Ontario) and thus present a snapshot of enrolments on that day.

Source: Statistics Canada, Postsecondary Student Information System, CANSIM Table series 477-0013, *University enrolments, by registration status, program level, Classification of Instructional Programs, Primary Grouping (CIP_PG) and sex, annual (number)*, data published July 13, 2010.

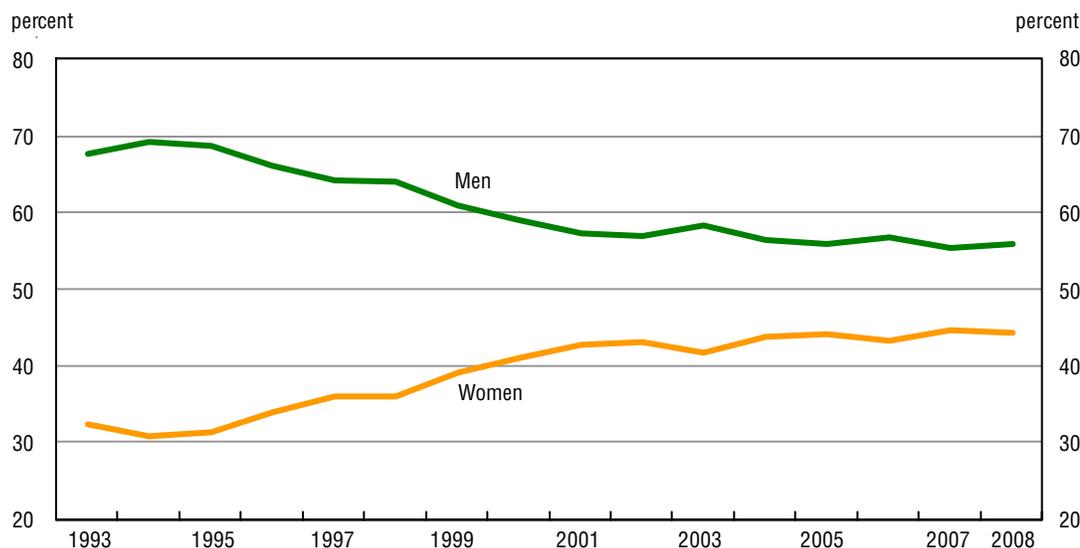
Earned doctorates

In 2008, 5,421 individuals were granted doctorates by Canadian universities, a 40% rise compared with five years earlier, when the figure was 3,864 (also seen in PCEIP Table D.2.3). Ten years earlier, in 1998, a similar number (3,978) of doctorates was awarded, while in 1993, 3,357 students graduated with a doctoral degree. Between 1993 and 2008, the number of doctorates awarded increased from year to year, with an overall increase of 61% over the 15-year period.

The difference between the sexes was quite striking at the beginning of the 1990s, when men represented over two-thirds of doctoral graduates (67%) (Chart 2). By the end of that decade, however, the proportion of women with earned doctorates had moved up to about 40%. By 2008, although women still accounted for less than half (44%) of all graduates from doctoral programs, the gender gap had narrowed considerably compared with 1993.

Chart 2

Proportions of men and women with earned doctorates, Canada, 1993 to 2008



Note: Reflects the number of graduates in the calendar year.

Source: Statistics Canada, Postsecondary Student Information System, CANSIM Table series 477-0014, *University degrees, diplomas and certificates granted, by program level, Classification of Instructional Programs, Primary Grouping (CIP_PG) and sex, annual (number)*, data published July 13, 2010.

University faculty

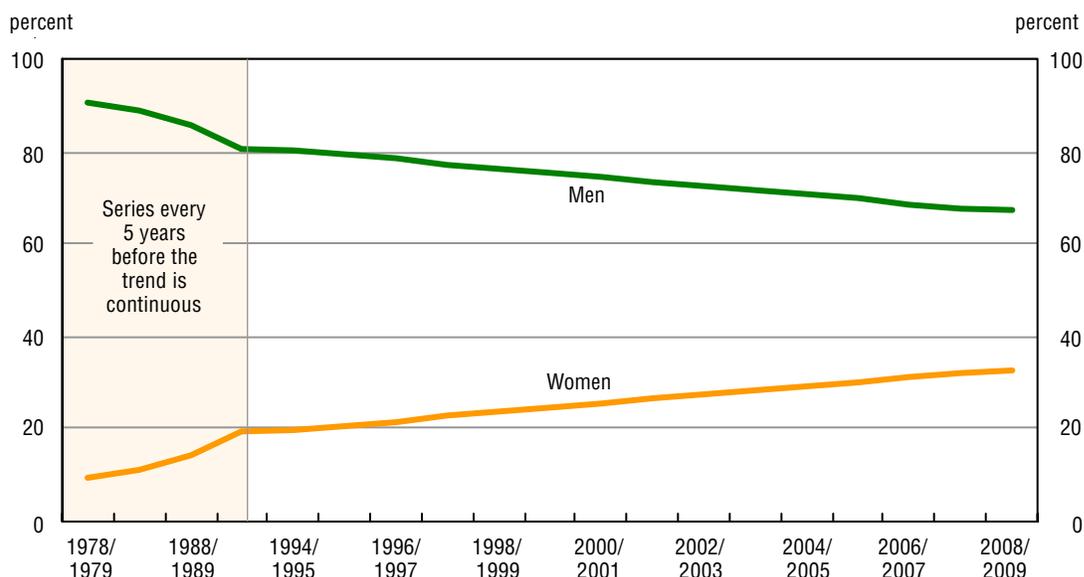
According to data from Statistics Canada’s Survey of Earned Doctorates, which interviewed all graduates who had completed a doctoral degree in Canada in 2007/2008, 33% of those who reported having “firm plans after graduation” planned to pursue postdoctoral studies, 12% expected to pursue “other studies/activities” and 55% planned to work, with more than two-fifths (41%) of this last group planning to head to postsecondary institutions to do so.³ Important differences are seen between the sexes: half of the women were planning to work at a university or college, while only one-third of the men were planning to do so.

Information on those who become full-time faculty members at Canadian degree-granting institutions is captured by the University and College Academic Staff Survey (UCASS). The latest data from UCASS, for the 2008/2009 academic year, show that, among teaching staff whose “highest earned degree” was a doctorate, the figures and trends—particularly the gender differences—echo those seen for enrolments in, and graduations from, doctoral programs.

3. These 2007/2008 figures are from the Survey of Earned Doctorates database. For more details, see *Doctorate Education in Canada: Findings from the Survey of Earned Doctorates, 2005/2006*, a research paper by Darren King, Judy Eisl-Culkin and Louise Desjardins (Statistics Canada Catalogue No. 81-595-M, No. 69), as well as the more recent study, *Expectations and Labour Market Outcomes of Doctoral Graduates from Canadian Universities*, a research paper by Louise Desjardins and Darren King (Statistics Canada Catalogue No. 81-595-M, No. 89, published January 6, 2011).

The time-series data available through UCASS allow trends to be observed for the 30 years between 1978/1979 and 2008/2009. The difference in the 1978/1979 and 2008/2009 counts for both sexes reveals an increase of about 15,000 full-time faculty members (all ranks) with doctorates. When the sexes are examined separately, however, the increases seen for women definitely outpace those seen among their male counterparts. At the beginning of the period, 90% of these faculty members were male (Chart 3). By 2008/2009, however, this proportion had dropped to 67%. Overall, the number of male university faculty increased by 5,650 over the period. This stands in sharp contrast to women, who saw their numbers increase from 1,816 in 1978/1979 to 11,068 in 2008/2009. In 2008/2009, women accounted for one-third (33%) of all full-time university teaching staff with doctorates.

Chart 3
Proportions of men and women among full-time university teaching staff (all ranks) with doctorates, Canada, 1978/1979, 1983/1984, 1988/1989 and 1993/1994 to 2008/2009



Source: Statistics Canada, University and College Academic Staff System, CANSIM Table series Table 477-0018, *Number and median age of full-time teaching staff at Canadian universities, by highest earned degree, staff functions, rank, sex, Canada and Provinces, annual*, data published December 21, 2010.

Gender differences by discipline

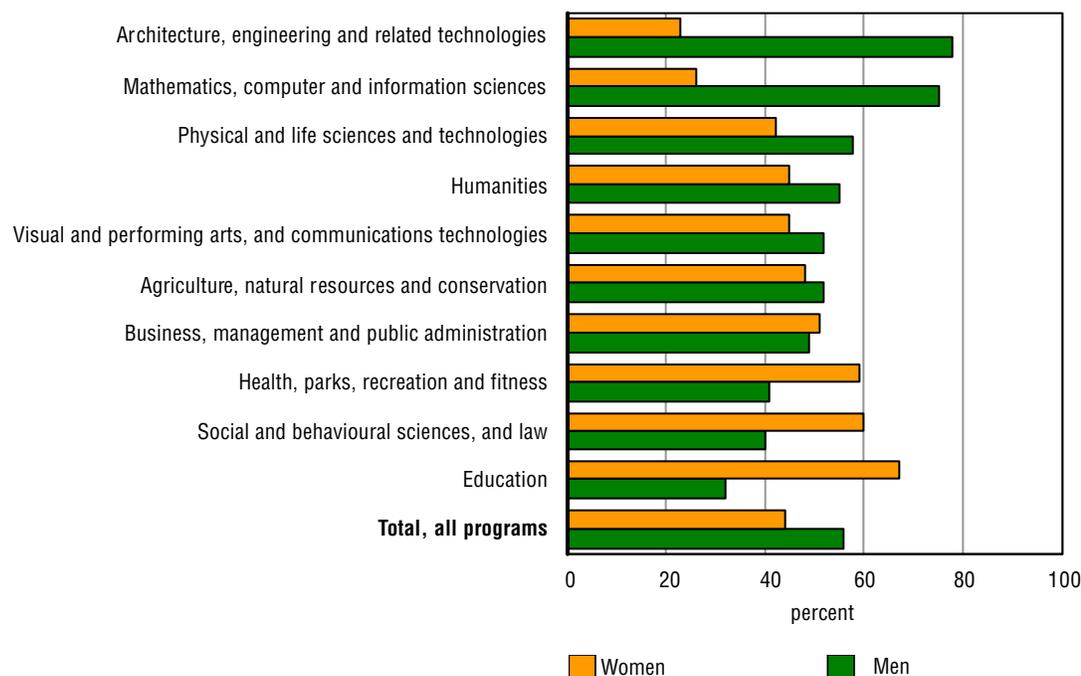
It is not surprising that an examination of fields of study among doctoral graduates and fields of instruction among university teaching staff show parallel gender differences by discipline. There have been some shifts over the years, however, as the numbers of women have begun to rise in traditionally male-dominated areas.

In 2008, the proportions of male and female doctoral graduates were fairly similar in business, management and public administration, as well as in agriculture, natural

resources and conservation (Chart 4).⁴ The representation of women was stronger in social and behavioural sciences, and law (which includes psychology), and in the health, parks, recreation and fitness domain (which includes health professions). Education continued to be female-dominated, with women accounting for approximately two-thirds (67%) of the doctoral graduates in this field of study. The numbers of male enrolments, and thus graduations, in education have both declined since the beginning of the 1990s.

Chart 4

Proportions of men and women among doctoral graduates, by selected fields of study, Canada, 2008



Source: Statistics Canada, Postsecondary Student Information System, CANSIM Table series 477-0014, *University degrees, diplomas and certificates granted, by program level, Classification of Instructional Programs, Primary Grouping (CIP_PG) and sex, annual (number)*, data published July 13, 2010.

While their female counterparts may have a much stronger presence in education, male graduates definitely continue to represent the majority of earned doctorates in two fields of study: mathematics, computer and information sciences (75%) and architecture, engineering and related technologies (78%). These proportions, however, mask the increases in the numbers of female enrolments and graduations in both of these fields. Between 1993/1994 and 2008/2009, the enrolment counts for women in the mathematics, computer and information sciences field rose about threefold (255 to 693), as did the counts for architecture, engineering and related technologies (426 to 1,437). The number of women graduating in these two fields also rose substantially over the 15-year period, from 21 to 93 and 45 to 231, respectively.

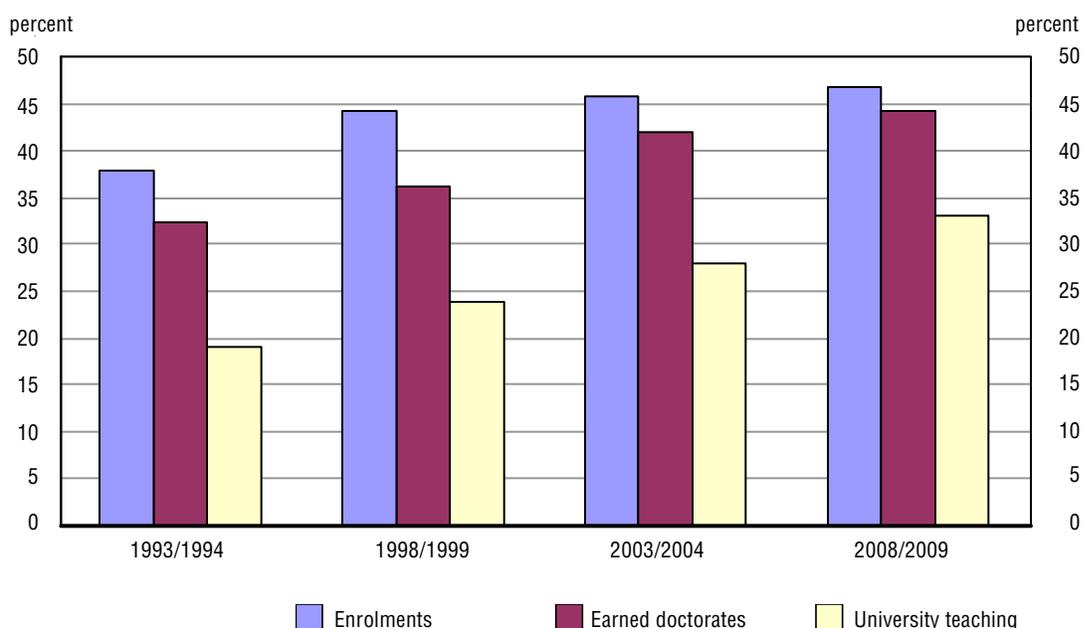
4. These field of study categories reflect the “primary groupings” in the Classification of Instructional Programs (CIP)-2000, which are used by the Postsecondary Student Information System.

Notable gains for women

Overall, women have accounted for the majority of students at Canada’s universities for several years. While their representation in enrolments and graduations has been stronger in programs at the undergraduate and master’s levels, this pattern has not yet been duplicated among doctoral students and graduates. However, the counts of women at the earned doctorate level have been rising steadily in recent years, and women are gradually closing the gap with their male counterparts in both enrolments and earned doctorates (Chart 5). Although there may be clear gender differences in some disciplines, women have also strengthened their presence in doctoral programs in all fields of study and in all fields of instruction among full-time university educators.

Chart 5

Percentage of women enrolled in doctoral programs,¹ with earned doctorates,¹ and among full-time university teaching staff (all ranks) with doctorates,² 1993/1994, 1998/1999, 2003/2004 and 2008/2009



1. From the following CANSIM table series (PSIS): 477-0013, *University enrolments, by registration status, program level, Classification of Instructional Programs, Primary Grouping (CIP_PG) and sex, annual (Number), 1992/1993 to 2008/2009*; and 477-0014, *University degrees, diplomas and certificates granted, by program level, Classification of Instructional Programs, Primary Grouping (CIP_PG) and sex, annual (Number), 1992 to 2008*, data published July 13, 2010.

2. From the following CANSIM table series (UCASS): 477-0018, *Number and median age of full-time teaching staff at Canadian universities, by highest earned degree, staff functions, rank, sex, Canada and Provinces, annual*, data published December 21, 2010.

Note: The information on enrolments and on full-time university teaching staff reflects the academic year; the information on earned doctorates reflects all graduations in the calendar year.

Sources: Statistics Canada, Postsecondary Student Information System (PSIS) and University and College Academic Staff System (UCASS).

For more information on the topics covered in this fact sheet, please see the tables produced for the *Education Indicators in Canada: Report of the Pan-Canadian Education Indicators Program*, as well as the *Handbook for the Pan-Canadian Education Indicators Program* series, both released on December 13, 2010. The tables include information on university enrolments (Table D.1.5 and Table D.1.6), university degrees, diplomas and certificates granted (Table D.2.3 and Table D.2.8), and full-time university teaching staff (Table D.3.1, Table D.3.2.1, Table D.3.2.2, Table D.3.3.1, Table D.3.3.2, Table D.3.4.1 and Table D.3.4.2). The related *Handbook* entries contain brief explanations of these education indicators, the concepts and definitions, the methodology (including limitations), and the data source(s) used.

A previous fact sheet, entitled *Postsecondary Enrolment and Graduation*, addresses a related topic, looking at enrolment in and graduation from registered apprenticeship programs (still largely dominated by men) and programs offered at colleges and universities. It also explores differences in the proportions of men and women.⁵

The data on university enrolments and graduates used for this fact sheet were provided by Statistics Canada's Postsecondary Student Information System (PSIS).⁶ PSIS is a national administrative database that collects data on enrolments and graduates from colleges and universities in Canada. PSIS contains comparable annual data beginning with 1992.

The data on university educators were extracted from the University and College Academic Staff System (UCASS),⁷ an annual survey that collects information on full-time teaching staff at Canadian degree-granting institutions.

Acknowledgements

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5. See *Postsecondary Enrolment and Graduation*, Fact Sheet No. 3 (Statistics Canada Catalogue no. 81-599-X), released in October 2009.
6. See the following CANSIM table series: 477-0013, *University enrolments, by registration status, program level, Classification of Instructional Programs, Primary Grouping (CIP_PG) and sex, annual (Number), 1992/1993 to 2008/2009*; and 477-0014, *University degrees, diplomas and certificates granted, by program level, Classification of Instructional Programs, Primary Grouping (CIP_PG) and sex, annual (Number), 1992 to 2008*. (These CANSIM table series can be used to extract data by province.)
7. See the following CANSIM table series: 477-0018, *Number and median age of full-time teaching staff at Canadian universities, by highest earned degree, staff functions, rank, sex, Canada and Provinces, annual*. (This CANSIM table series can be used to extract data by province.) Some additional time series data were obtained from the UCASS database.