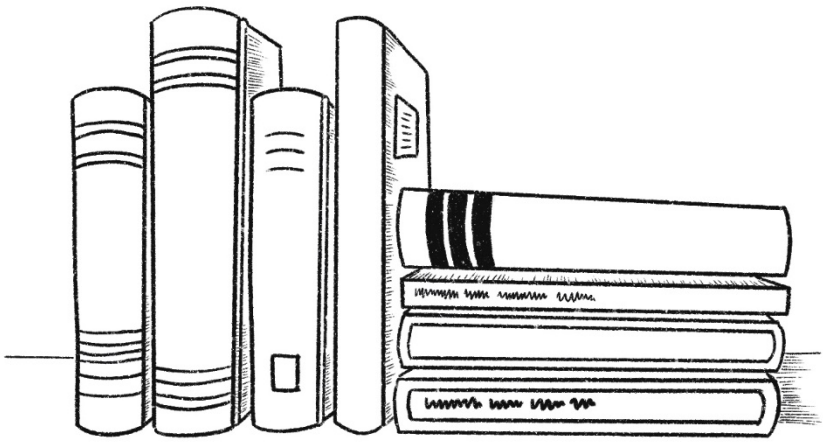

Trends in the Gender Pay Gap at Ontario Universities

A Women in Academia Research Brief

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Introduction

In this research brief, we focus on providing readers with the means to explore trends in faculty salaries using a few key variables.

We use data from the University and College Academic Staff Survey – Full-time Staff (FT-UCASS), which contains information on all full-time teaching staff at universities in Canada.[1] In this brief, we define faculty to include full-time teachers, full-time research staff that have an academic rank and salary scale similar to teaching staff and visiting full-time academic staff in faculties only. We use data beginning in the 1970–71 school year, the earliest point at which machine-readable data is available, and continuing through the 2018–19 school year. It consists of the median salary[2] and number of professors by gender, academic rank, subject taught[3] and province of every professor in Canada.[4] Due to the disruption in FT-UCASS data collection between 2011–12 and 2015–16, results from these years should be interpreted with caution.[5]

[1] FT-UCASS was terminated in 2012 due to budget reductions and re-instated in 2016. The five-year gap in Statistics Canada's data collection, between 2011 and 2015, was retroactively filled by a combination of data collected independently by participating institutions in association with the National Vice President's Academic Council, who authorized and finalized their data with Statistics Canada, and by data that was independently submitted to Statistics Canada. However, not all institutions participated in this data collection.

[2] The annual median salary includes administrative stipends and is adjusted for inflation to 2021 dollars.

[3] We use the "primary grouping" variant of Classification of Instructional Program (CIP) codes, which consists of 12 groups. We do not show responses classified as "Other" or "Not available" due to small counts.

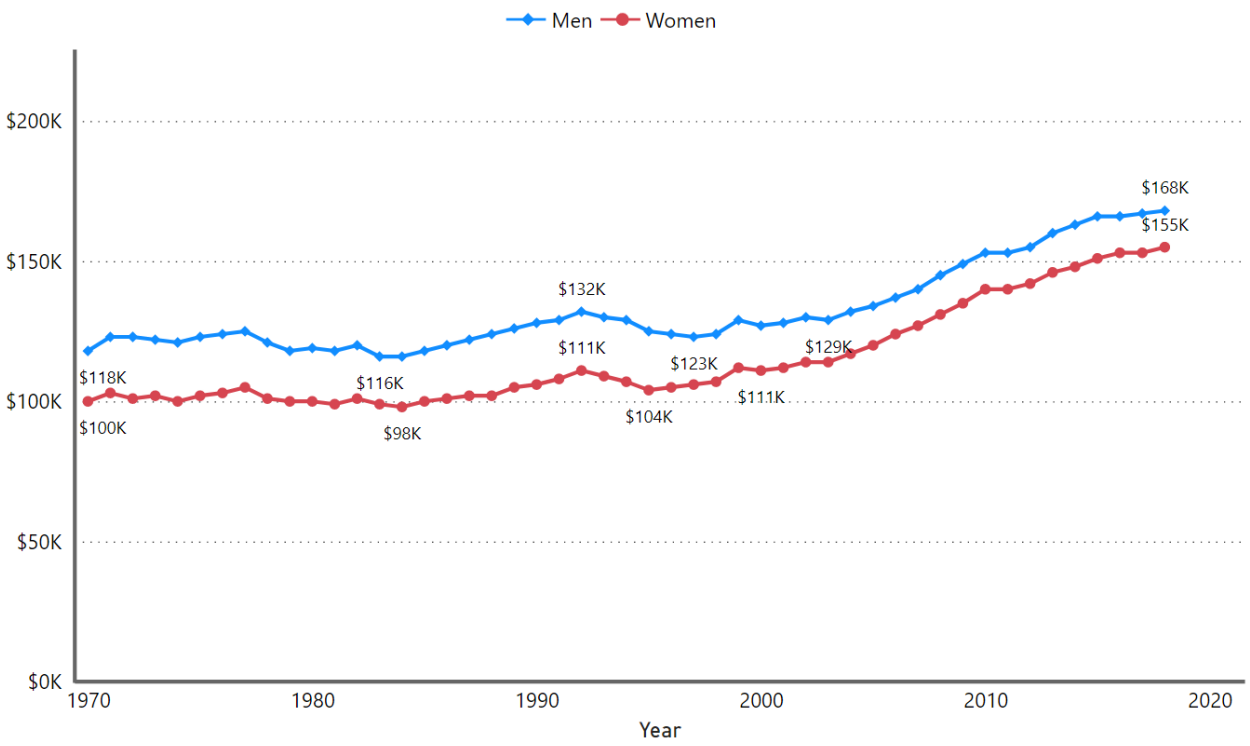
[4] The data used in this brief is from a custom Statistics Canada tabulation. Counts are probabilistically rounded to multiples of 3 except those less than 3, which are suppressed by Statistics Canada, and are rounded down to 0 for this analysis. As a result, data presented here may not exactly match that from other sources. Also note that we calculate all three-year moving averages and forecasted values using Microsoft Power BI software.

[5] During this time, there are particularly large amounts of absent data for the Subject Taught variable; consequently, results for these years may be inaccurate in some cases. In the visualizations to follow, we label, and shade grey the affected time periods.

Presenting the Data

We present data in this brief using visualizations with key highlights outlined below.

Figure 1: Median Salary for Full-time University Faculty by Gender



- The wage gap between men and women has shrunk slightly over time. In 1970–71, the difference between men and women was $18,000 versus $13,000 in 2018–19.
- Differences are more pronounced for women in science, technology, engineering and mathematics (STEM)[6] disciplines in 2018–19.

[6] STEM disciplines include “architecture, engineering, and related technologies,” “mathematics, computer and information sciences” and “physical and life sciences, and technologies.”

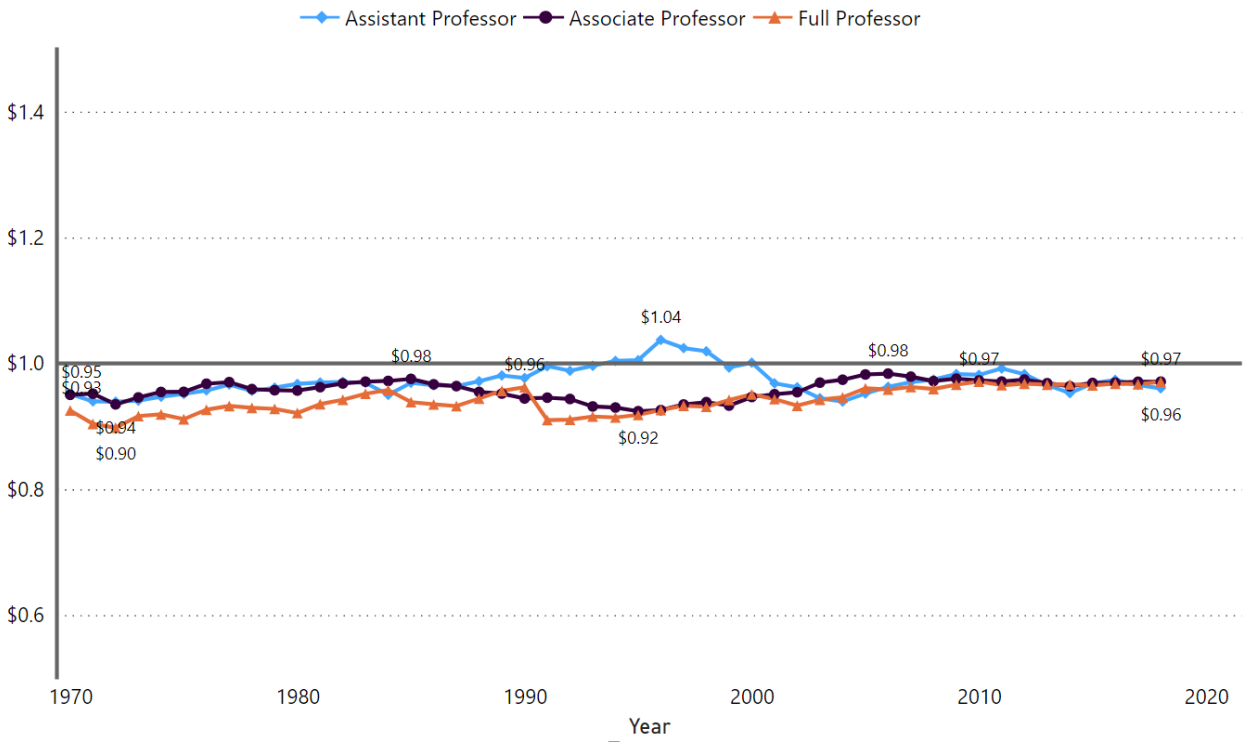
Table 1: Median Salary for Men and Women by STEM Subfield, 2018-19

STEM Field	Median Salary		N
	Women	Men	
Architecture, Engineering and Related Technologies	$160,000	$173,000	1,764
Mathematics, Computer and Information Sciences	$163,000	$173,000	984
Physical and Life Sciences and Technologies	$158,000	$170,000	1,902
Weighted STEM Average	$160,000	$172,000	4,650

- Fields that are traditionally viewed as feminine,[7] where women are more concentrated (see *Gendered Trends in Ontario University Faculty Employment*), such as health and education, command lower salaries than STEM fields overall, but the salary gap between men in women in these fields is smaller. The median man earned $165,000 in 2018–19, which is $10,000 more than the median woman.

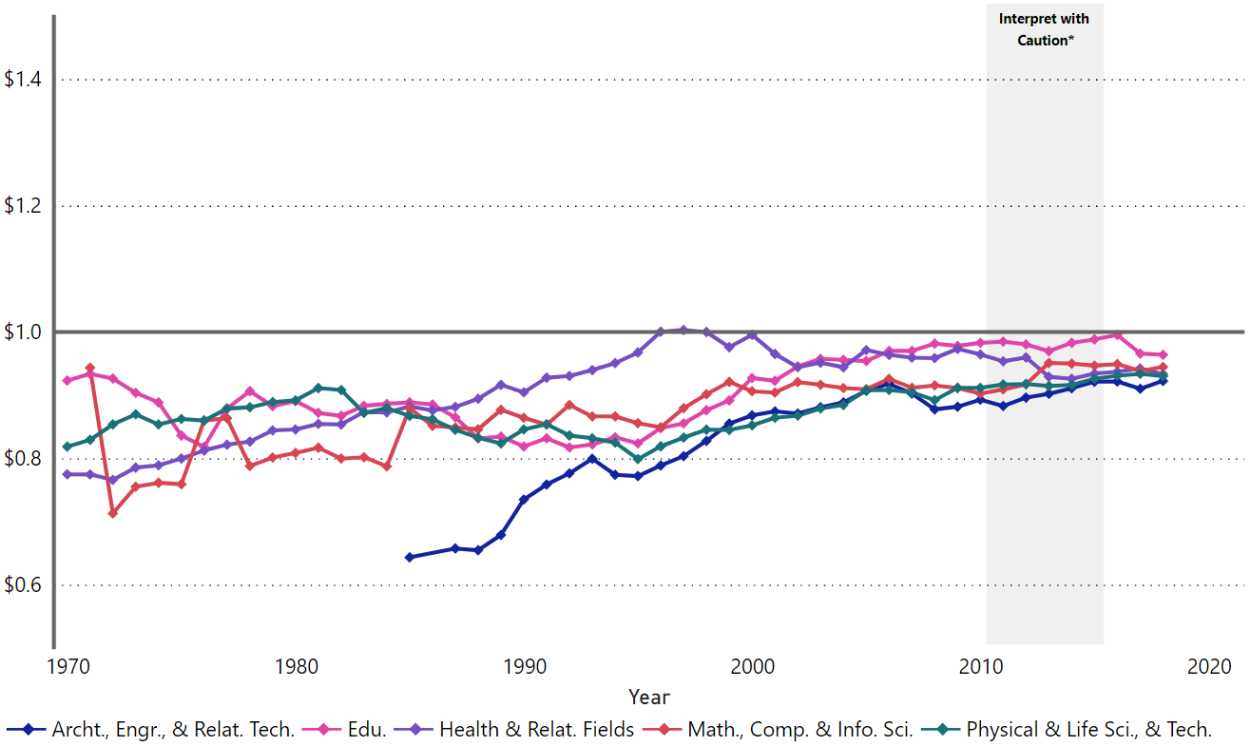
[7] In both 1992 and 2007, for example, McMullen et al. (2010) found that health and education fields had the largest proportion of female university graduates.

Figure 2: Women/Men Salary Ratio for Full-time University Faculty by Academic Rank



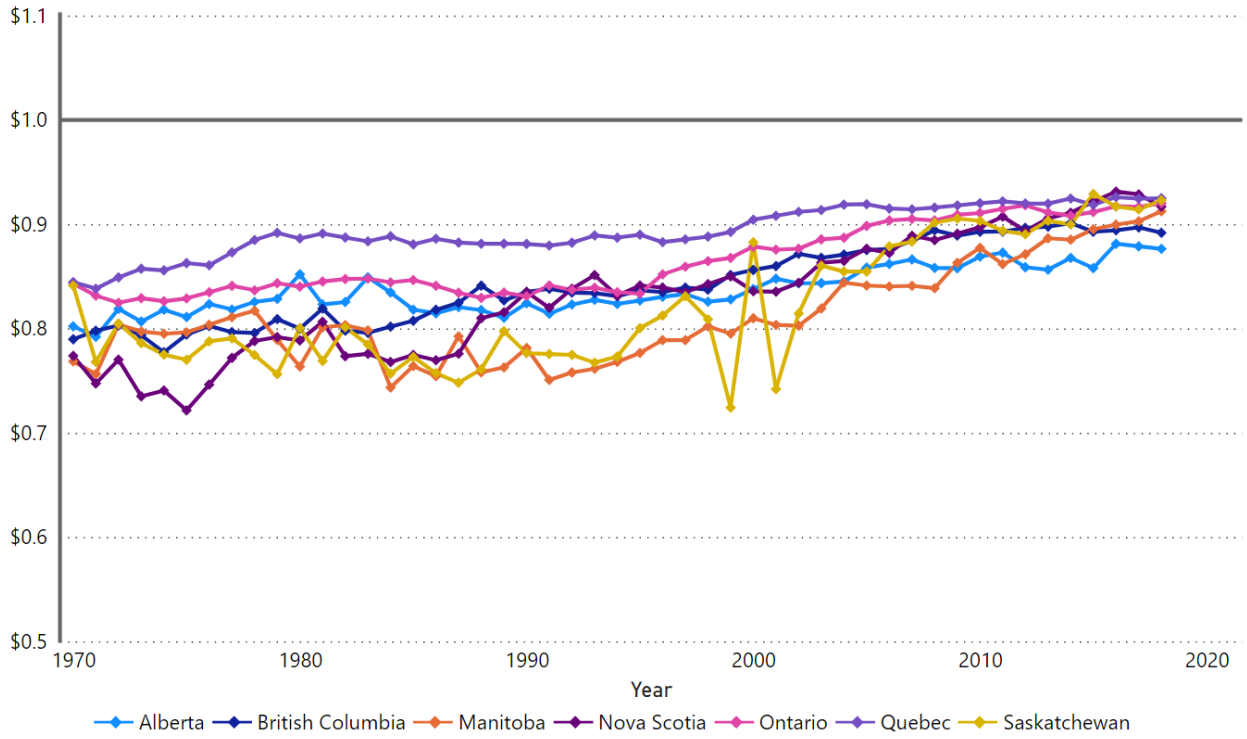
- Gaps have shrunk slightly for assistant and associate professors over time. In 1970–71, women earned $0.95 for every dollar men earned at these ranks compared to $0.96/$0.97 in 2018–19.
- For full professors, the gap decreased more substantially. The ratios started at roughly $0.90 (the lowest point in 1972–73) and rose to $0.97.
- Across all ranks, disparities in earnings have changed little since the late 2000s.
- Examining wage gaps by rank matters: women faculty as a whole earned roughly $0.16 less than men for every dollar earned in 2018–19, but when comparing men and women at the same rank, this gap drops to between $0.03 and $0.04.

Figure 3: Women/Men Salary Ratio for Full-time University Faculty by Discipline



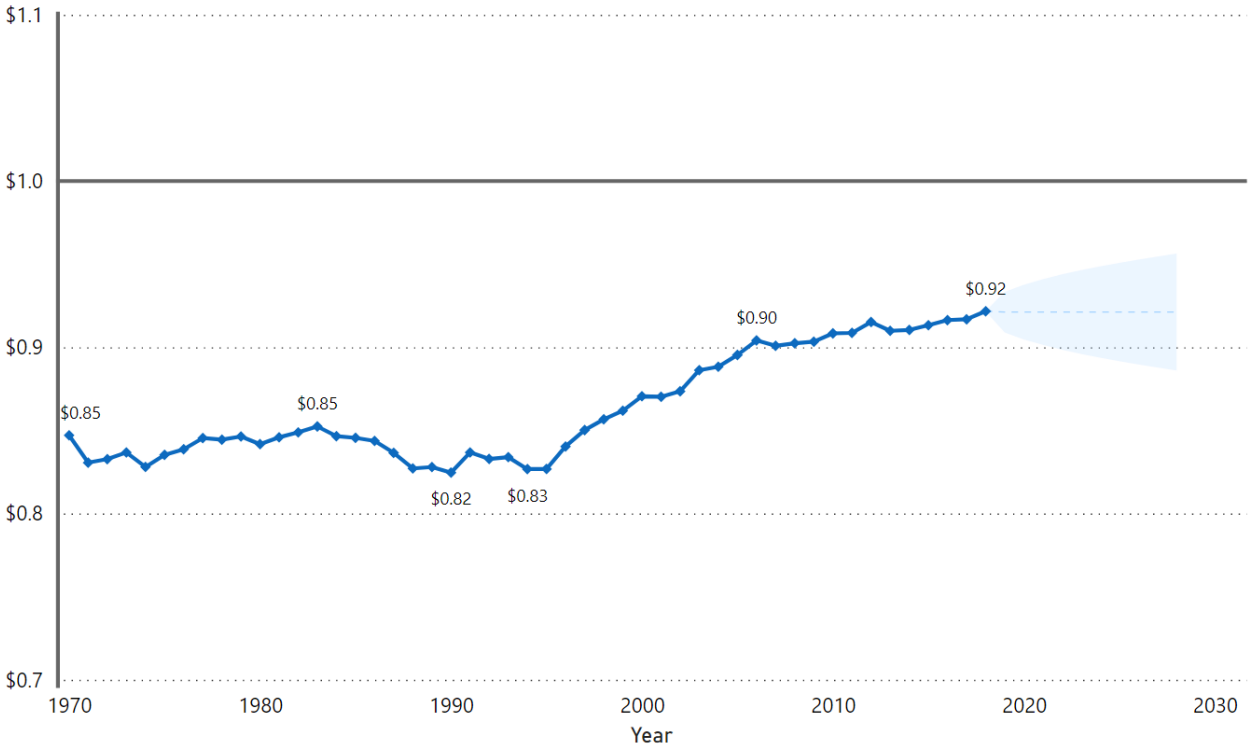
- In health and related fields, women have earned salaries that are close to those earned by men since the 1990s.
- In more recent years, women in education fields have earned some of the highest salaries relative to men although they are still not at parity. The ratio has hovered slightly below $1.0 since the late 2000s.
- Women in architecture, engineering and related fields earned very low wages compared to men in early time periods; however, there were far fewer women in these fields until more recent decades.
- Focusing on individual ranks provides some of the most promising results in this brief — in 2018–19, women professors in most disciplines earned similar salaries to men. More specifically, when ratios are averaged across all subjects taught in the graph, women at the assistant, associate and full professor ranks averaged approximately $0.98 for every dollar men earned, or 2% less in 2018–19.

Figure 4: Women/Men Salary Ratio for Full-time University Faculty by Province



- For the seven most populous provinces in Canada (Alberta, British Columbia, Manitoba, Nova Scotia, Ontario, Quebec and Saskatchewan), women faculty made between $0.77 and $0.84 for every dollar men earned in 1970–71, which slowly increased over time to roughly $0.91 (i.e., between $0.88 and $0.92) in 2018–19.
- Trends by rank are similar across provinces: women's earnings relative to men increased substantially over time, but women have not yet reached parity.

Figure 5: Forecast for the Women/Men Salary Ratio for Full-time University Faculty



- This forecast, which is based solely on past trends,[8] indicates that the wage gap is not expected to change over the next 10 years — it is projected to remain at $0.92.
- If this projection is extrapolated further, beyond the 10 years shown here, women would not be expected to achieve parity with men at any point in the next 50 years.
- Examining salary ratios for specific ranks does not change this conclusion.

[8] We compute this forecast through a statistical method known as exponential smoothing. The dashed line is the point estimate or best guess for the future trend and the shaded cone represents a 95% confidence interval.

Summary

- Earnings gaps between women and men have decreased slightly over time, but women faculty continue to earn less than men.
- The current gender gap — with women earning $0.92 for every dollar men earn — is not projected to change in the near future given our model. More drastic social or policy changes may be needed to continue shrinking the gap in the future.
- When women and men in both the same rank and discipline are compared, earnings gaps are small, with women earning around 2% less than men. However, this comparison does not take into account that women are more concentrated in lower-paying disciplines — and particularly less senior ranks — where earnings are lower.
- It should be noted that salary gaps presented here are based on one-year snapshots, and consequently, even small gaps that persist over time will result in large differences in accumulated earnings over a woman's career.
- These results take only rank and subject taught into account. Other variables, such as years of experience or age, may actually increase the wage gap, in some instances, since disparities in salary have been found to be larger for older faculty (Pelletier et al., 2019).
- Because FT-UCASS does not track individual faculty over time, it is impossible to fully disentangle the relationships between characteristics of faculty and their salaries. There is not, currently, a source of data that does so. Detailed longitudinal data should be collected to enable more comprehensive analyses of the gender pay gap.