

Status of Women in Mathematics, Canada

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Outline

- Data: What do the Numbers Say?
 - Women Undergraduate and Graduate Students in the Mathematical Sciences
 - Women Faculty in the Mathematical Sciences
- Issues: What does Research Say?
- Questions
- Resources

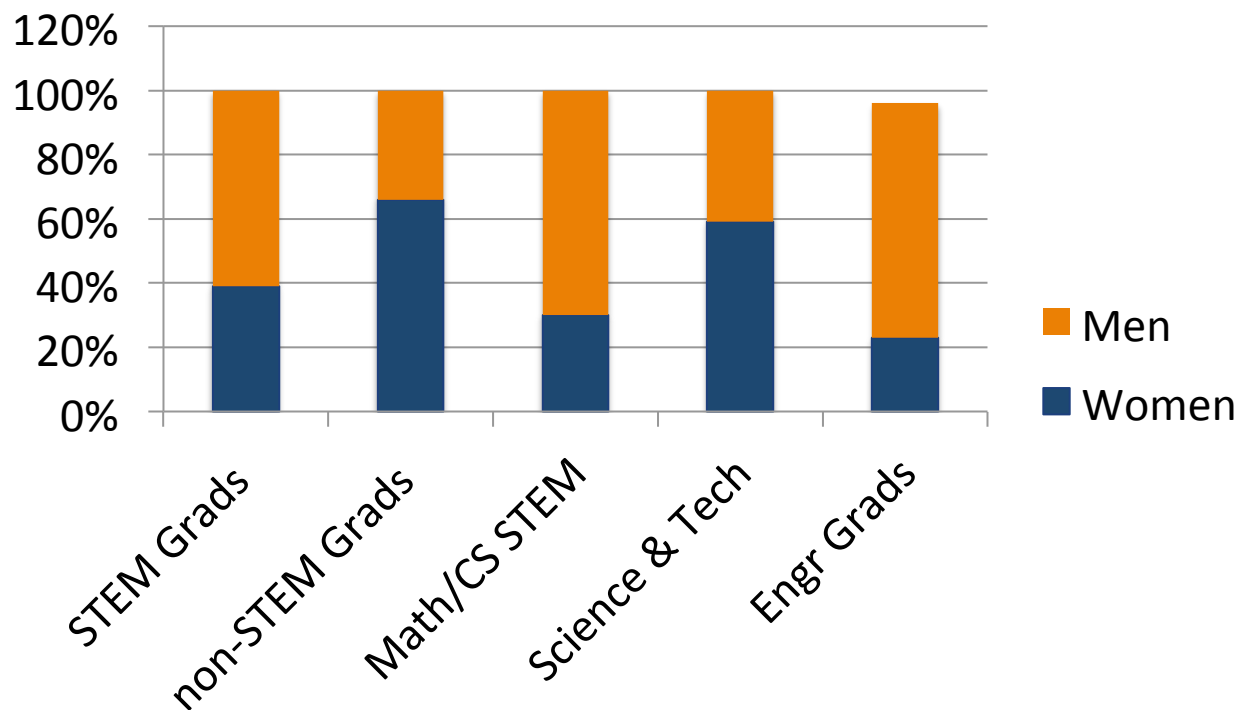


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Data: STEM UnderGrad Degrees

NHS Survey, 2011, 25-34 years old

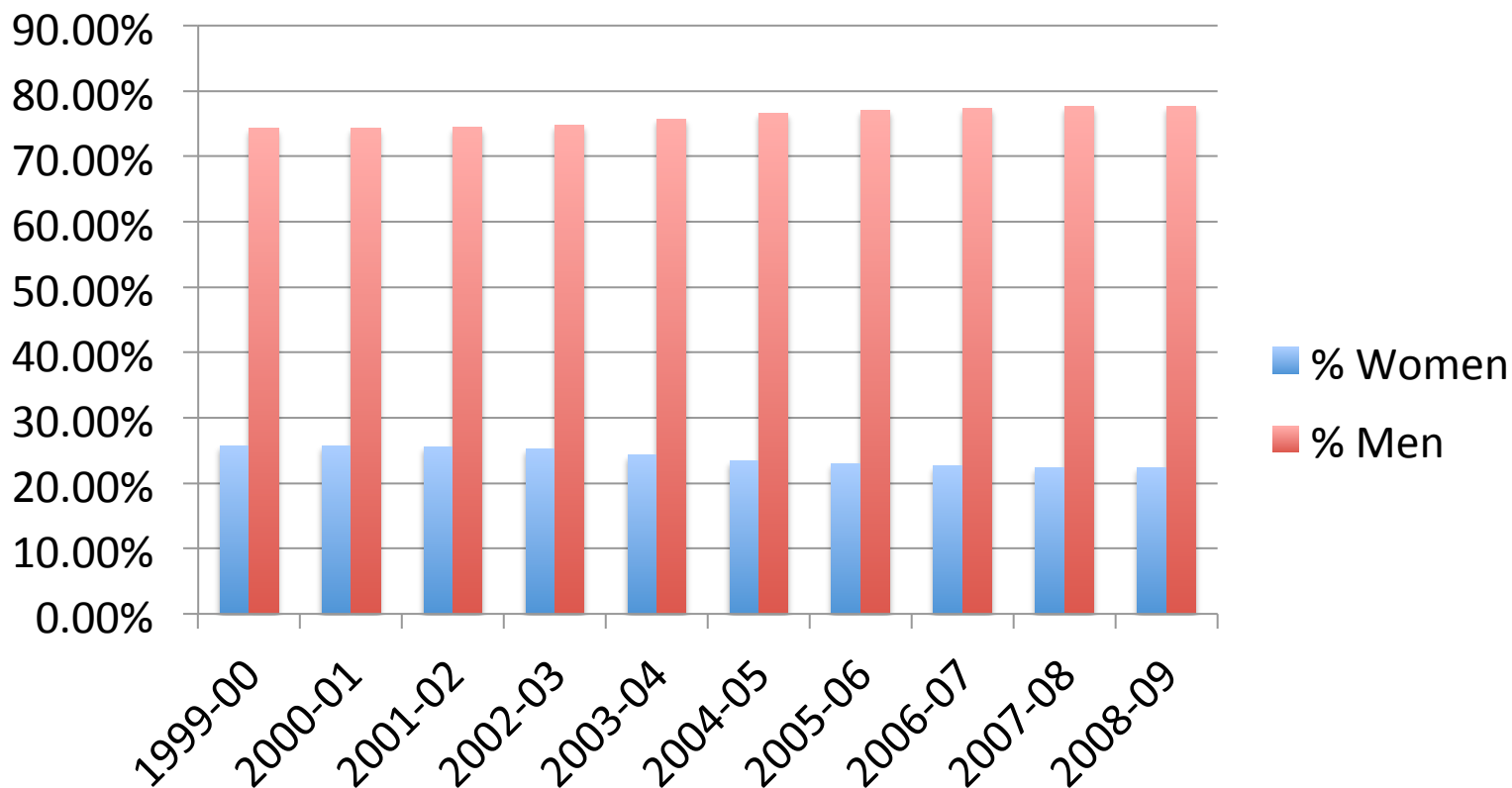


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Data: STEM Grad Students

Math & Phys Sci MS, Canadians & PR

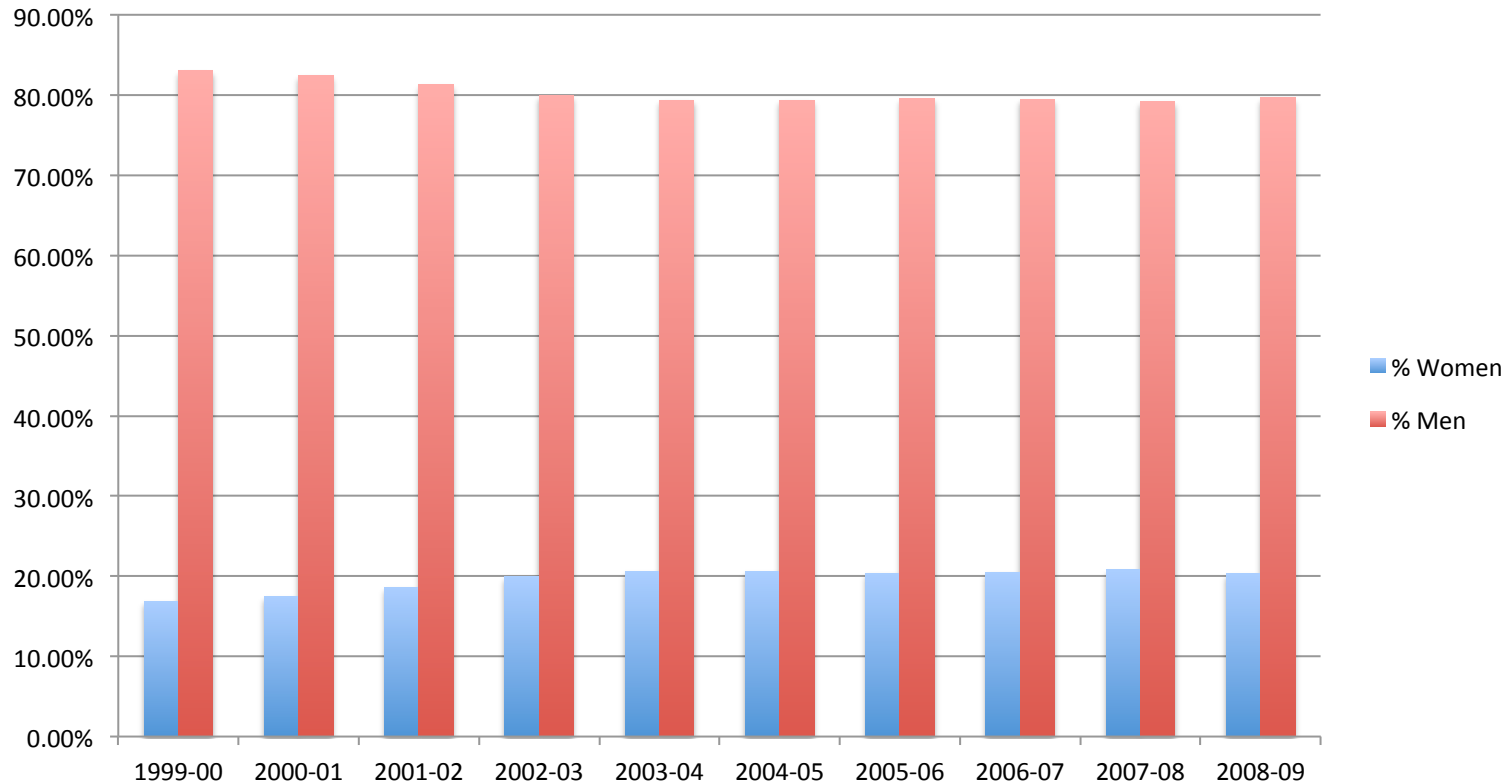


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Data: STEM Grad Students

Math & Phys Sci, PhD, Canadians & PR

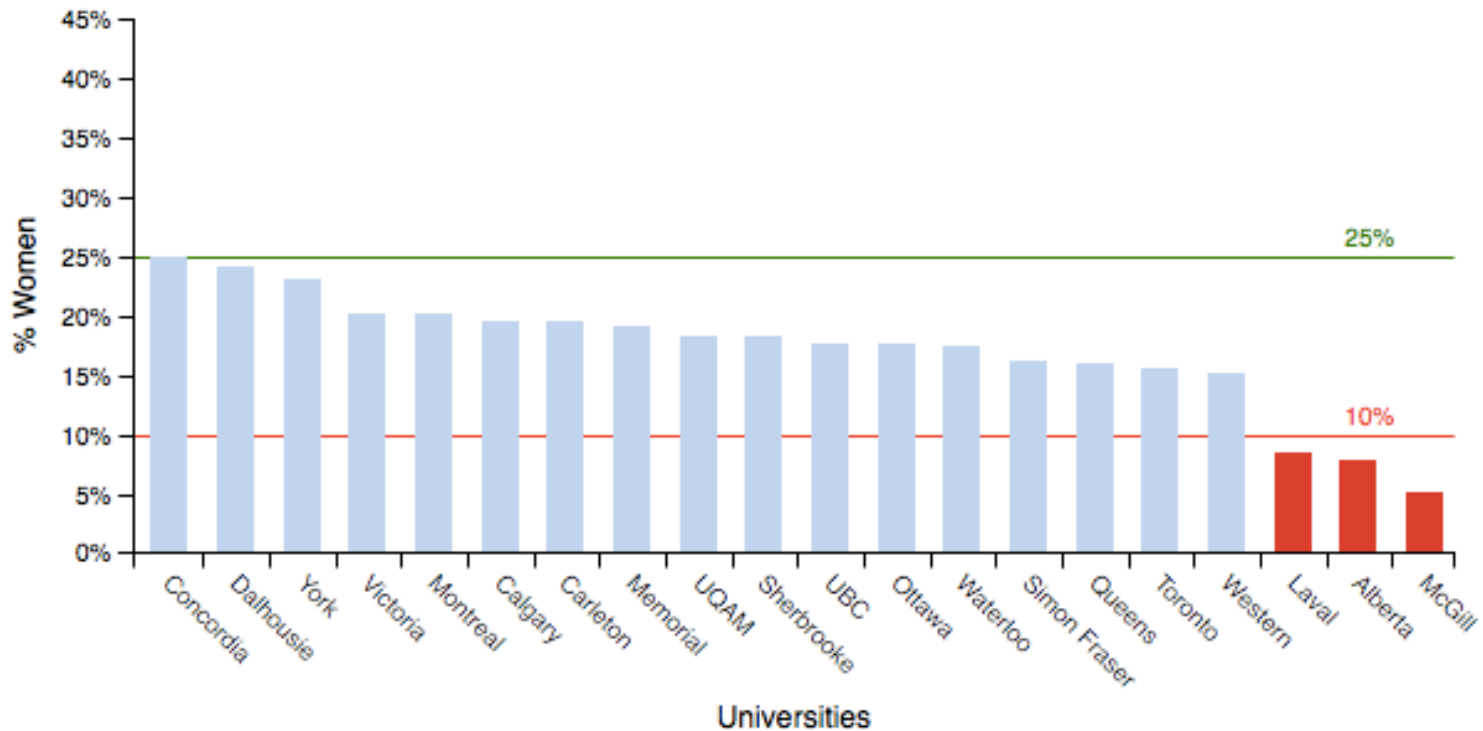


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Data: Women Faculty

Women Professors in Mathematics Departments



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Women Faculty, Science, McMaster

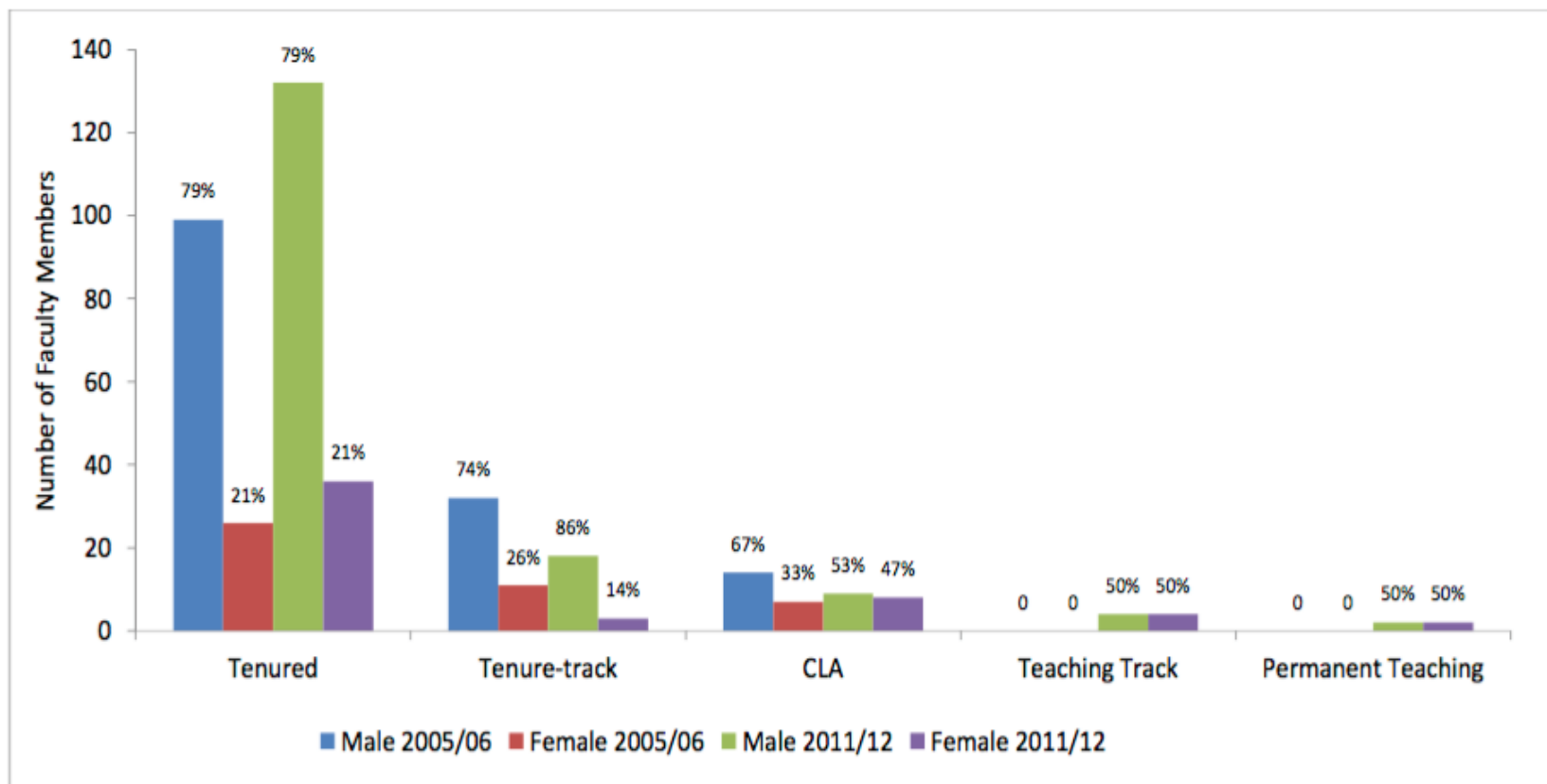


Figure 9: Faculty of Science Faculty Count by Appointment Type and Gender 2005/06 and 2011/12



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Issues

- **Implicit or Unconscious Bias**
 - Women are always less likely to major in STEM, *regardless of mathematical ability.*
 - Only 23% of women in the three highest categories of PISA scores (out of six) chose a STEM major.
 - 39% of men in the three *lowest* categories of PISA scores chose STEM.



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Issues

- **Stereotype Threat**

- Students who chose STEM had higher PISA scores at age 15 than those who chose non-STEM.
- Women who chose STEM had an average math PISA score of 588, compared with 565 for those who chose social science.
- Men who chose STEM had a score of 597, versus 585 for those who chose social science.
- Men tended to have higher PISA scores than women on average (589 versus 569).



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Issues

- **Self-Confidence and Growth Mindset**

- Students with higher math marks in high school were more likely to choose STEM at university.
- More than 40% of women with marks of 90% to 100% chose STEM, versus 11% of women with marks under 80%.
- Men were more likely to opt for STEM, even in lower-marks categories.
- More than 30% of men with marks under 80% chose STEM.
- Women with math marks of at least 90% in grade 9 or 10 were less likely to choose STEM than men with marks in the 80% to 89% range.



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Resources

- Why So Few: Women in Science, Technology, Engineering and Mathematics, AAUW, C. Hill, C. Corbett, A. St. Rose, 2010, <http://www.aauw.org/research/why-so-few/>
- The Four Frames: A Framework for Promoting Gender Equity in Organizations, WEPAN, <https://www.wepan.org/news/224377/A-Framework-for-Promoting-Gender-Equity-in-Organizations.htm> (adapted from CGO Insights, Briefing Note No. 1, Simmons Graduate School of Management)



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Resources

- ADVANCEing Faculty Program, Louisiana Tech University, OWISE Library,
http://www.advance.latech.edu/index.php?option=com_content&view=article&id=35&Itemid=63
- “Engineering: Where are the Girls and Why aren’t They Here?” J. Carpenter, TEDx Monroe, Women in STEM Who Rock!, DreamBox Learning, Oct. 2015,
<http://www.dreambox.com/blog/women-in-stem-who-rock-plus-top-10-websites-to-get-girls-psyched-about-stem>



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- Where Are the Women Professors in Canada's Math and Science Departments? M. Kuzmin, A. Motskin, Z. Gallinger, The 10 and 3, Jan. 29, 2015,
<http://www.the10and3.com/where-are-the-women-professors-in-canadas-math-and-science-departments/>



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- Women faculty, now and in the future: Building excellence at McMaster University,” Charlotte Yates, Equity Task Force, January 2014,
[http://www.mcmaster.ca/vpacademic/documents/Yates Report on Gender Equity January 2014.pdf](http://www.mcmaster.ca/vpacademic/documents/Yates_Report_on_Gender_Equity_January_2014.pdf)



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