

HOW THE COVID-19 PANDEMIC IS AFFECTING WOMEN IN STEM

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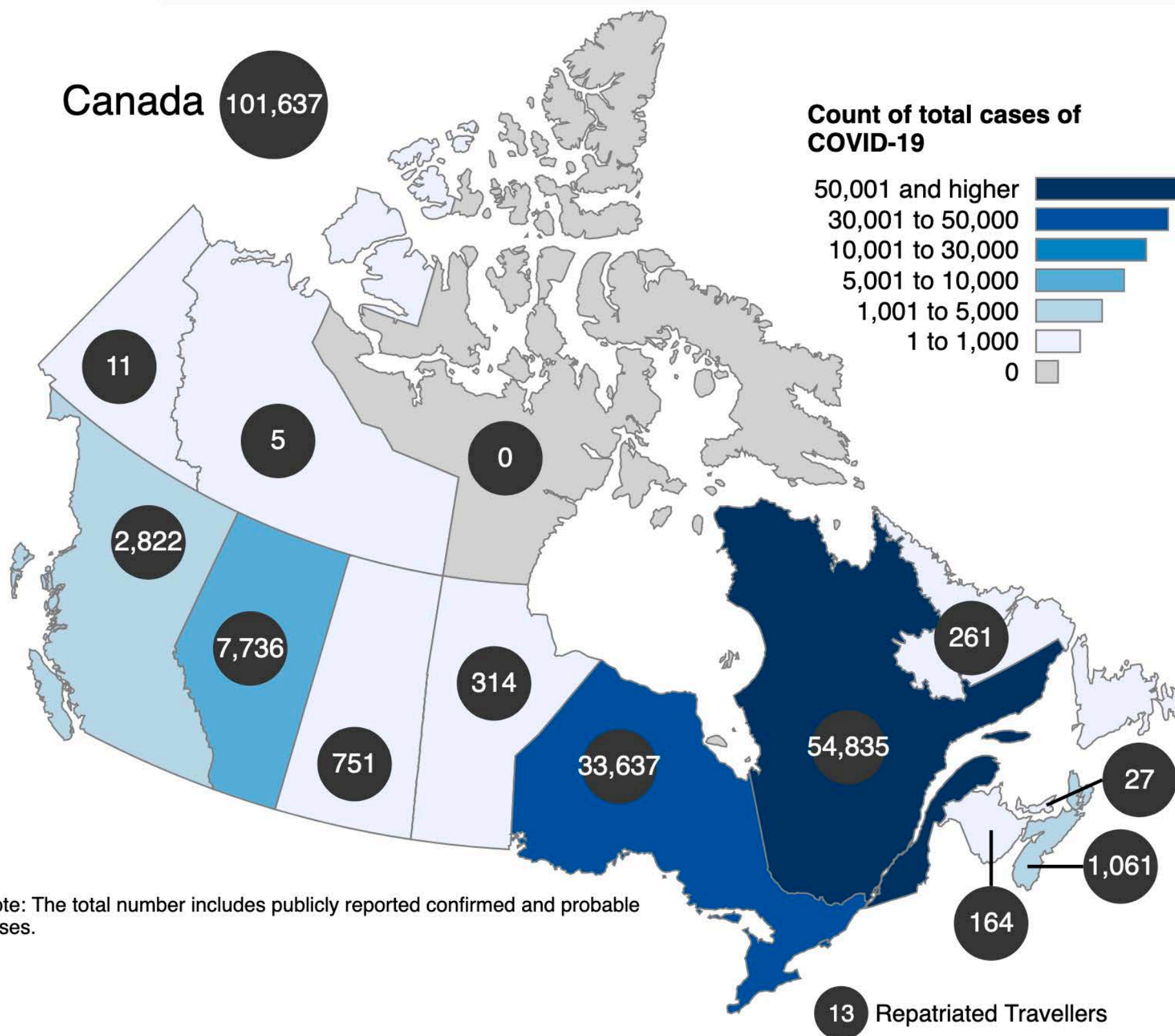
UNIVERSITY OF
TORONTO



NSERC
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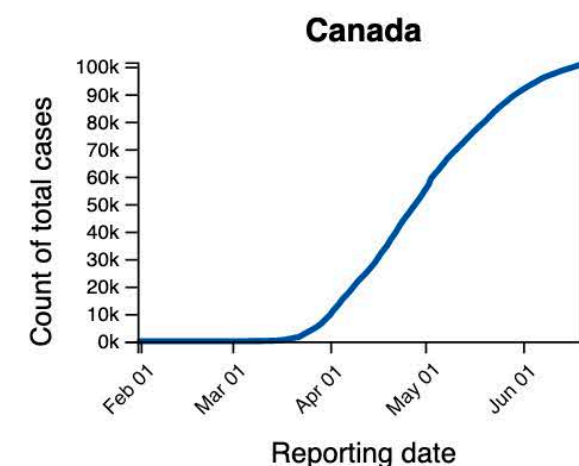


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alexanderwild.com



Note: The total number includes publicly reported confirmed and probable cases.

The count of total cases of COVID-19 in **Canada** was **101,637** as of June 22, 2020.



▶ Play

↓ .csv

Source: Government of Canada data, updated June 22, 2020,
<https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection.html>

Coronavirus is 'the great equalizer,' Madonna tells fans from her bathtub

By Toyin Owoseje, CNN

🕒 Updated 9:53 AM ET, Mon March 23, 2020

- COVID-19 is anything but a 'great equalizer'
- Its impacts on our health, economy, and society vary by gender, race, age, and income
- Here, my focus is the gendered impacts of COVID-19, but other disparities are also critically important
 - US data show Black, Indigenous, and Latino Americans are dying of COVID-19 at much higher rates than White and Asian Americans
 - Few comparable data in Canada, because few jurisdictions collecting data on race and COVID-19
 - Why racism, not race, is a risk factor of dying of COVID-19: <https://www.scientificamerican.com/article/why-racism-not-race-is-a-risk-factor-for-dying-of-covid-19/>

The disease itself is not gender-neutral

- Globally, men are at greater risk from COVID-19
- But in Canada, 56% of COVID-19 cases and 54% of COVID-19 deaths are women

Source: Government of Canada data, updated June 19, 2020,
<https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection.html>

Profound economic consequences also vary by gender, race, age, and income

Uneven employment recovery

February to April ■ April to May



Lower-wage¹ jobs most affected

In March and April, employment in lower-wage jobs dropped by **38%**, compared with **13%** for all other paid employees.

In May, employment in lower-wage jobs increased by **7%**, compared with **4%** for all other paid employees.

1. Jobs that pay less than two-thirds of the 2019 annual median wage.

Catalogue number: 11-627-M | ISBN: 978-0-660-35101-8

Source: Statistics Canada, Labour Force Survey.

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Increases in unpaid labour

- Oxfam Canada, working with polling firm Leger, conducted a nationally representative online survey of 1523 Canadians between 5-7 June, 2020
 - 44% of women and 39% of men reported an increase in domestic or care work (e.g., cooking, cleaning, childcare, etc.) as a result of the COVID-19 pandemic
 - 71% of women and 65% of men have experienced at least one challenge associated with increased household and care work, specifically:
 - 40% of women, compared to 29% of men, are feeling stressed/anxious/depressed
 - 35% of women, compared to 28% of men, are feeling lonely or isolated

Source: Oxfam Canada Omni Report, June 9, 2020,
<https://oxfam.app.box.com/s/zpkr8xukdkb2jskej7mcmwfel8bef5jo/file/679907564438>

WORLD VIEW • 17 APRIL 2020

The pandemic and the female academic



I'm curious what lockdown will reveal about the 'maternal wall' that can block faculty advancement.

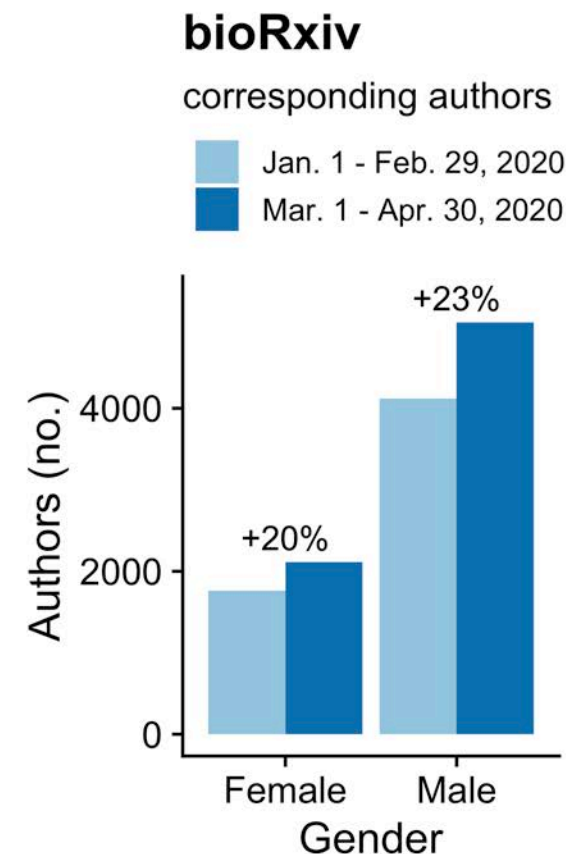
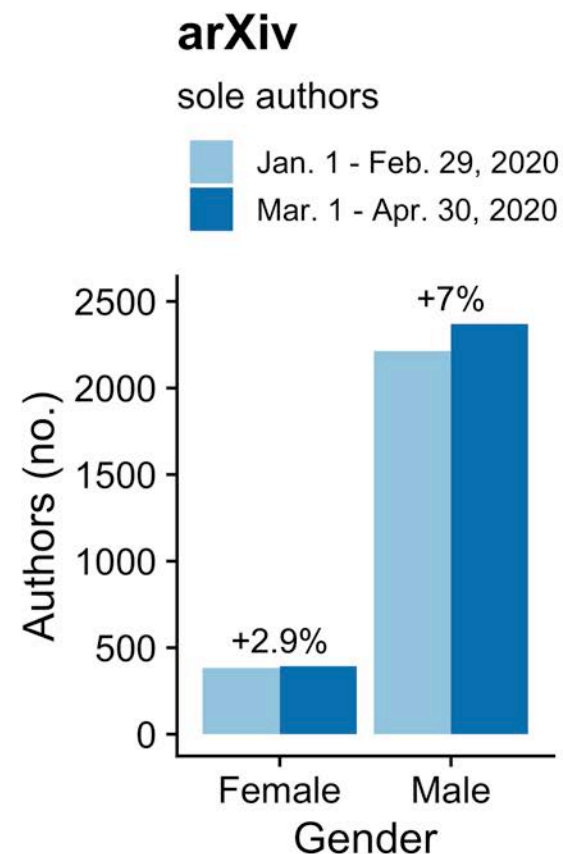
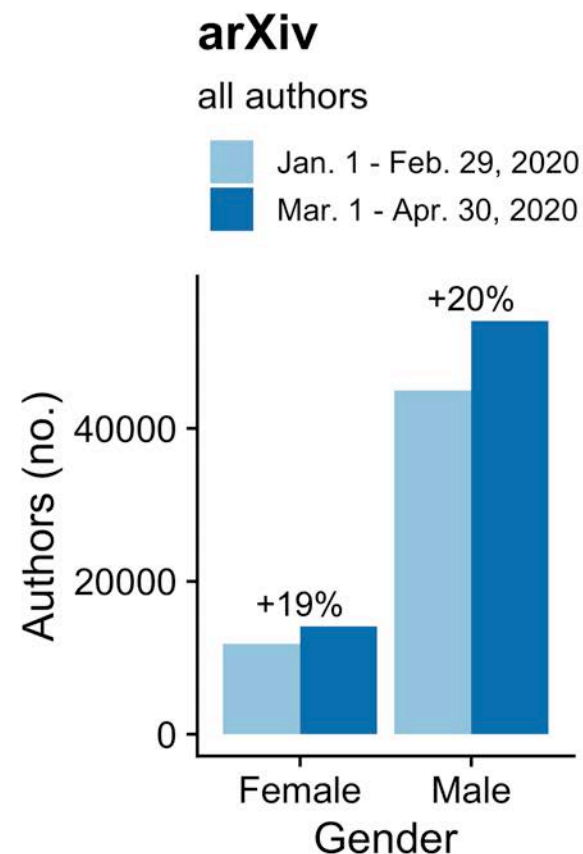
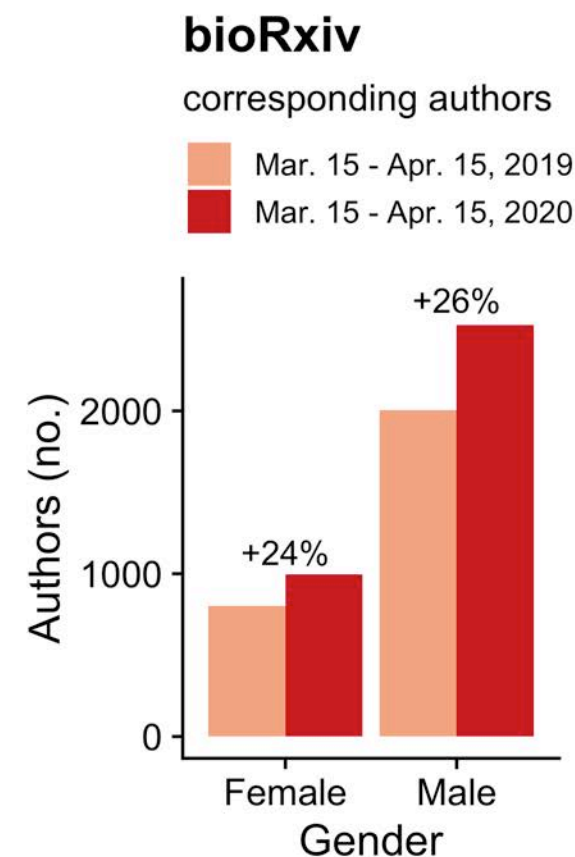
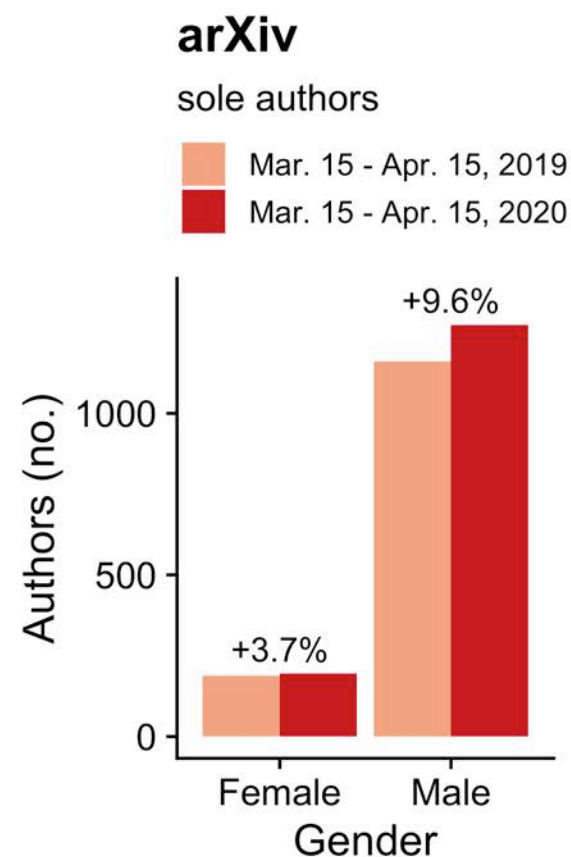
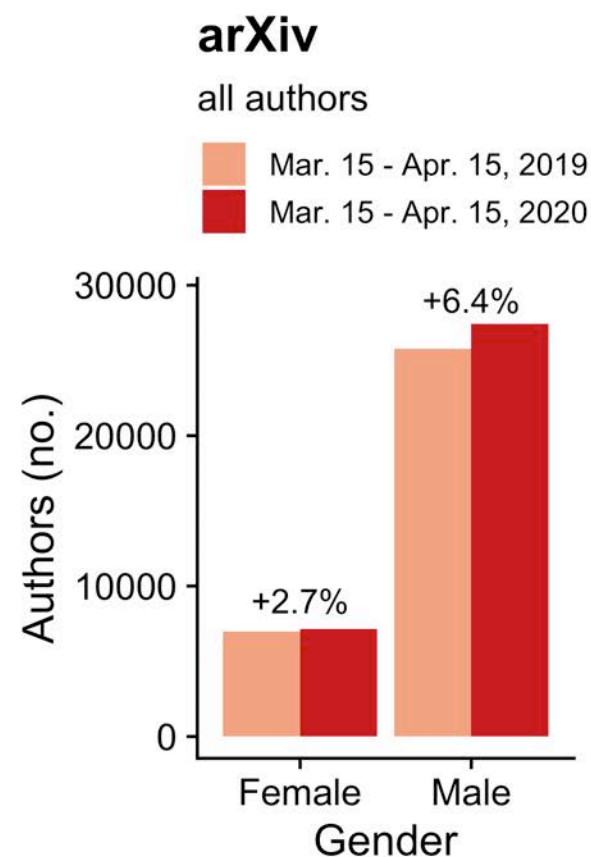
Alessandra Minello 



Humour is one way for women in academia to face the pandemic's consequences for their work and family lives. Last month, a viral Twitter post read, "The next person who tweets about how productive Isaac Newton was while working from home gets my three year old posted to them!"

<https://www.nature.com/articles/d41586-020-01135-9>

My own preliminary analysis





Women are getting less research done than men during this coronavirus pandemic

May 18, 2020 7.12am EDT

Email

Twitter

116

Facebook

572

LinkedIn

Before COVID-19, I used to spend a lot of time feeling like the Cat in *The Cat in the Hat*. I was holding a cup, the milk, the cake and a little toy ship, while bouncing up and down on a ball.

Author



Megan Frederickson

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<https://theconversation.com/women-are-getting-less-research-done-than-men-during-this-coronavirus-pandemic-138073>

COVID-19 amplifies gender disparities in research

Goran Murić^a, Kristina Lerman^{a,b}, and Emilio Ferrara^{a,b,c}

^aUSC Information Sciences Institute; ^aUSC Department of Computer Science; ^aUSC Annenberg School of Communication

This manuscript was compiled on June 12, 2020

- Analyzed ~80K papers with 450K+ authors published as preprints in *bioRxiv* and *medRxiv* or as papers in a *Springer-Nature* journal
- “we observe an average drop of 5% in the proportion of female authors during the pandemic”
- “the impact is particularly pronounced for biomedical papers related to COVID-19 research”

Preprint data & gender: there's an app

Monitoring women's scholarly production during the COVID-19 pandemic

by Philippe Vincent-Lamarre, Cassidy R. Sugimoto and Vincent Larivière

Article Explore the data About

Preprint Platform:

arXiv

Value displayed:

% of women first author

Timestep:

Monthly

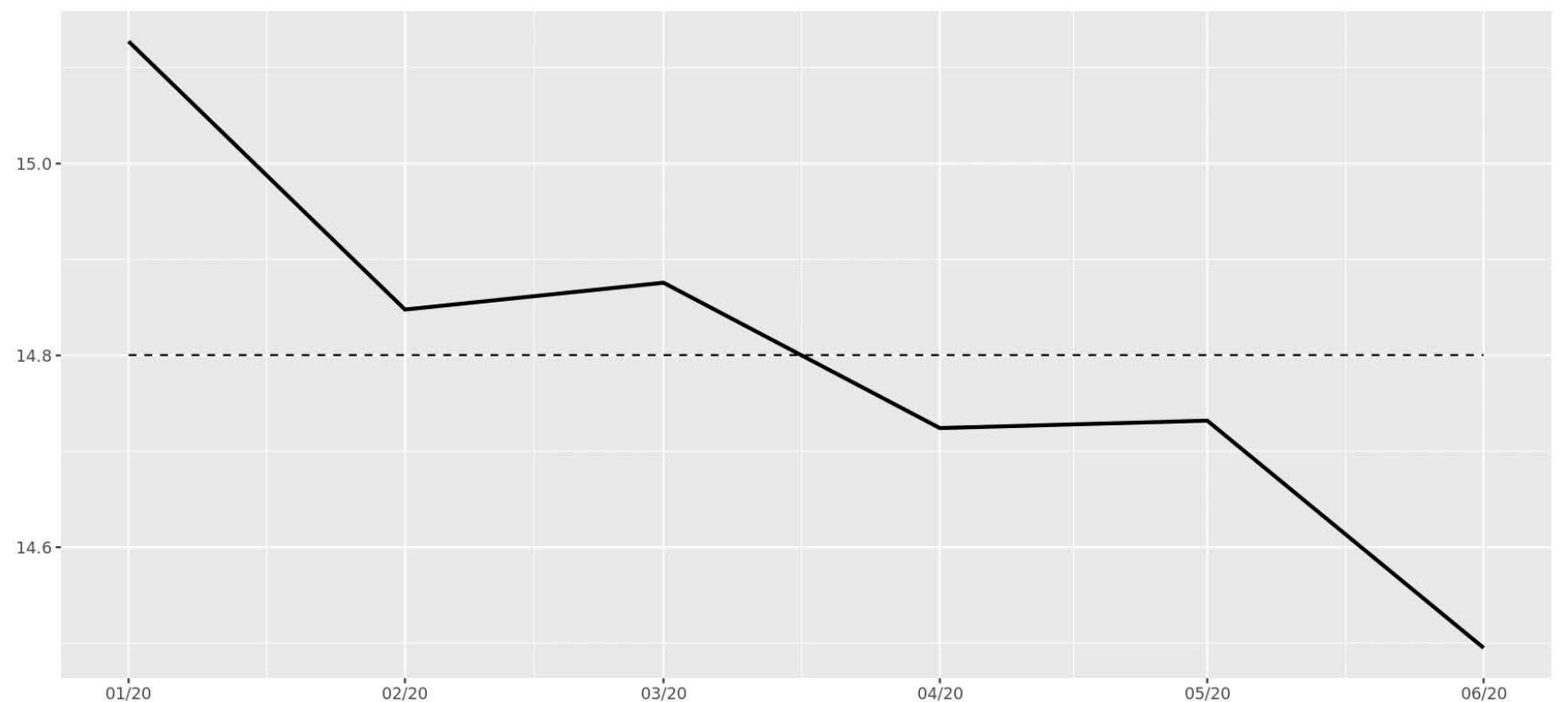
Time period:

2020-01-01

to

2020-06-23

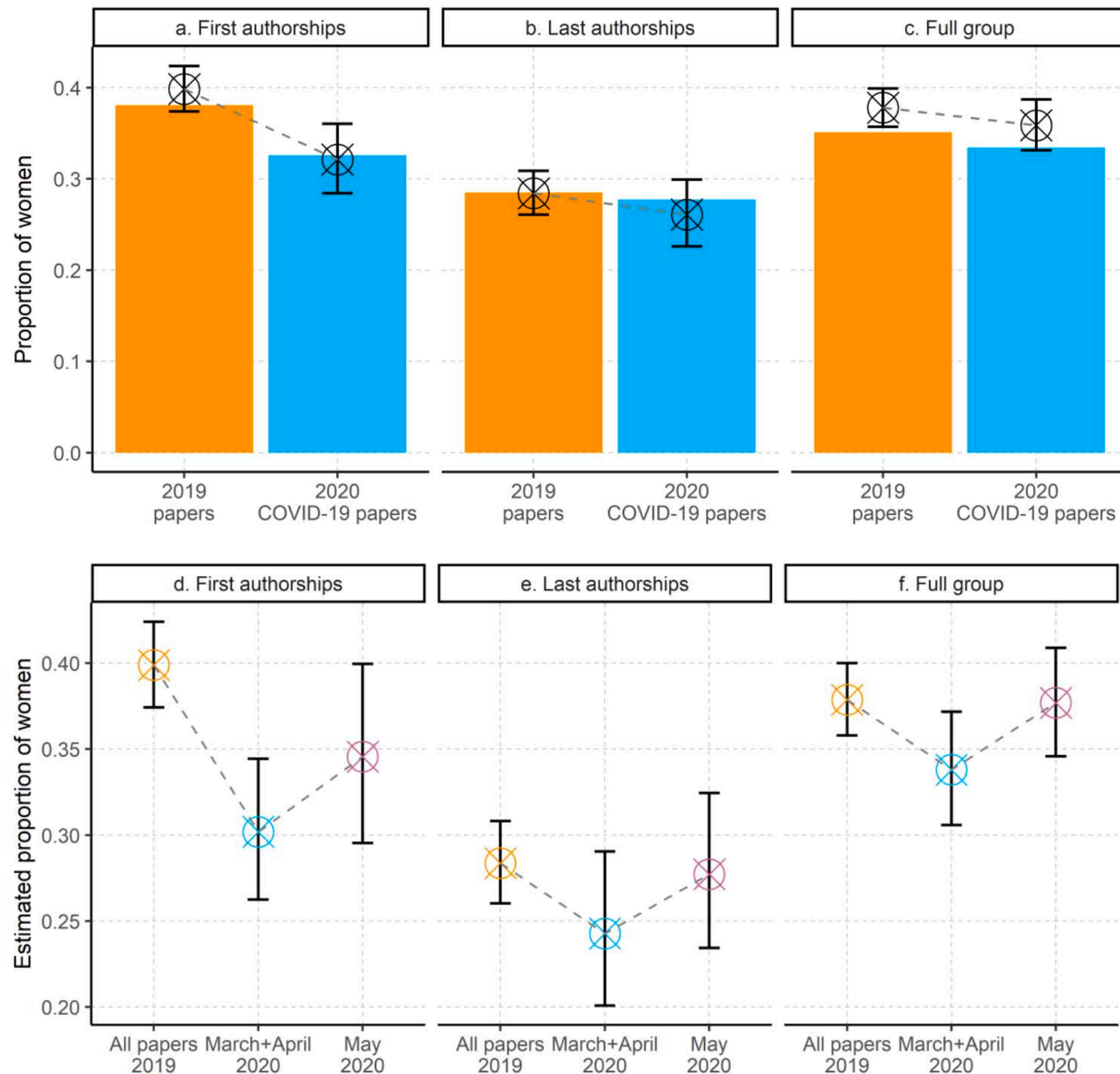
Draw plot



Data updated on 2020-06-19

Jan 2020 Feb 2020 Mar 2020 Apr 2020 May 2020 Jun 2020

Source: <http://shiny.initiativesnumeriques.org/monitoring-scholarly-covid/>



Analysis of
1893 COVID-19
papers, and
85,373 papers
from 2019 in the
same journals

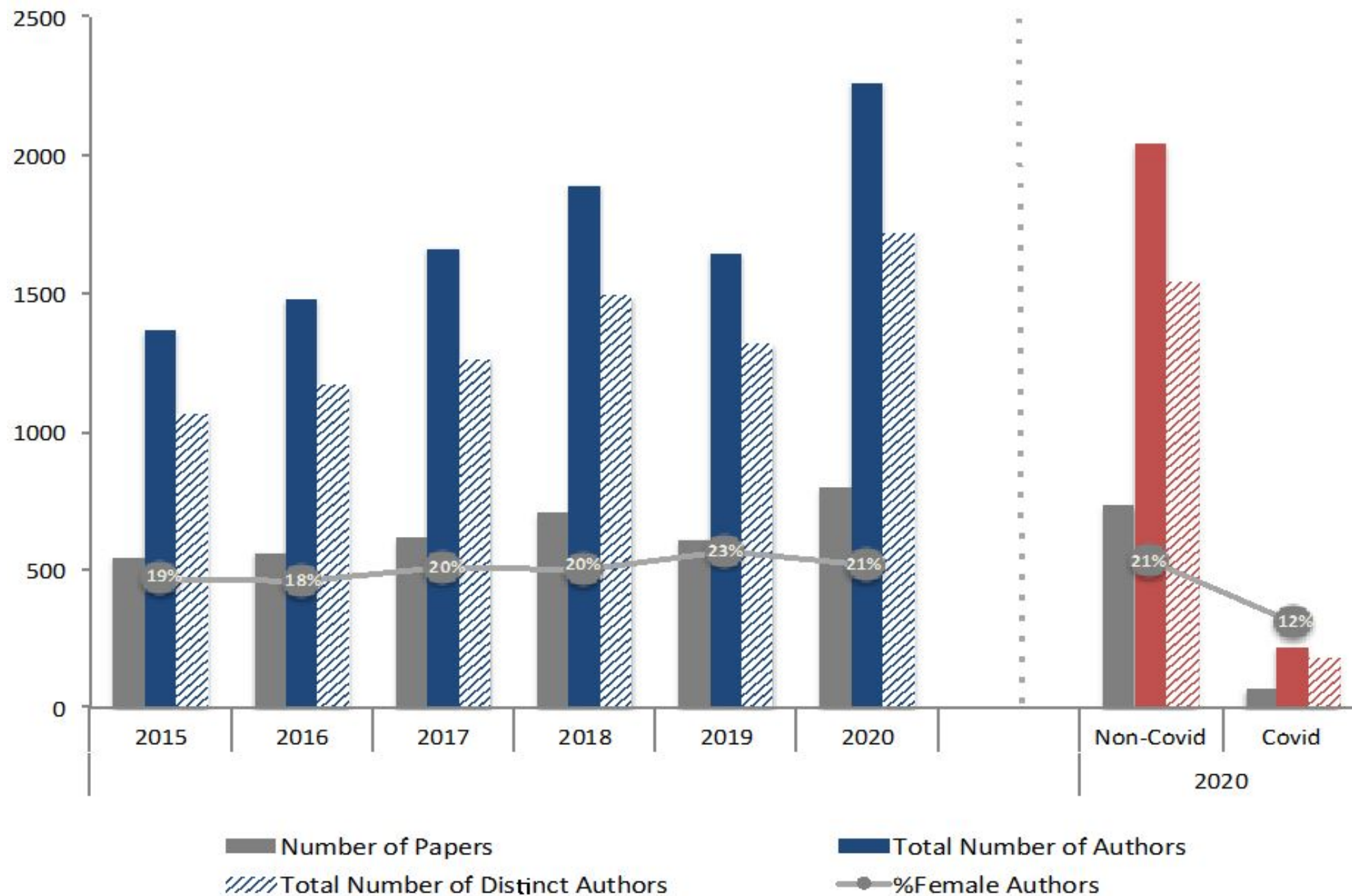
Source: Andersen et al.
(2020, arXiv)

Analysis of all COVID-19 papers indexed by PubMed

- Women made up 34% of all authors, 29% of first authors, and 26% of last authors of COVID-19 papers (n = 1370)
- In comparison, a 2017 study of 1.5 million papers found women made up 40% of first authors and 27% of last authors
- “Under-representation of female researchers tends to create under-representation of issues that are relevant to women in research — in our current situation this may create important gaps in our understanding of COVID-19.”

Source: Pinho-Gomes et al. (2020, *BMJ Global Health*)

Analysis of working papers in economics



Source: Amano-Patino (2020, Vox CEPR Policy Portal)

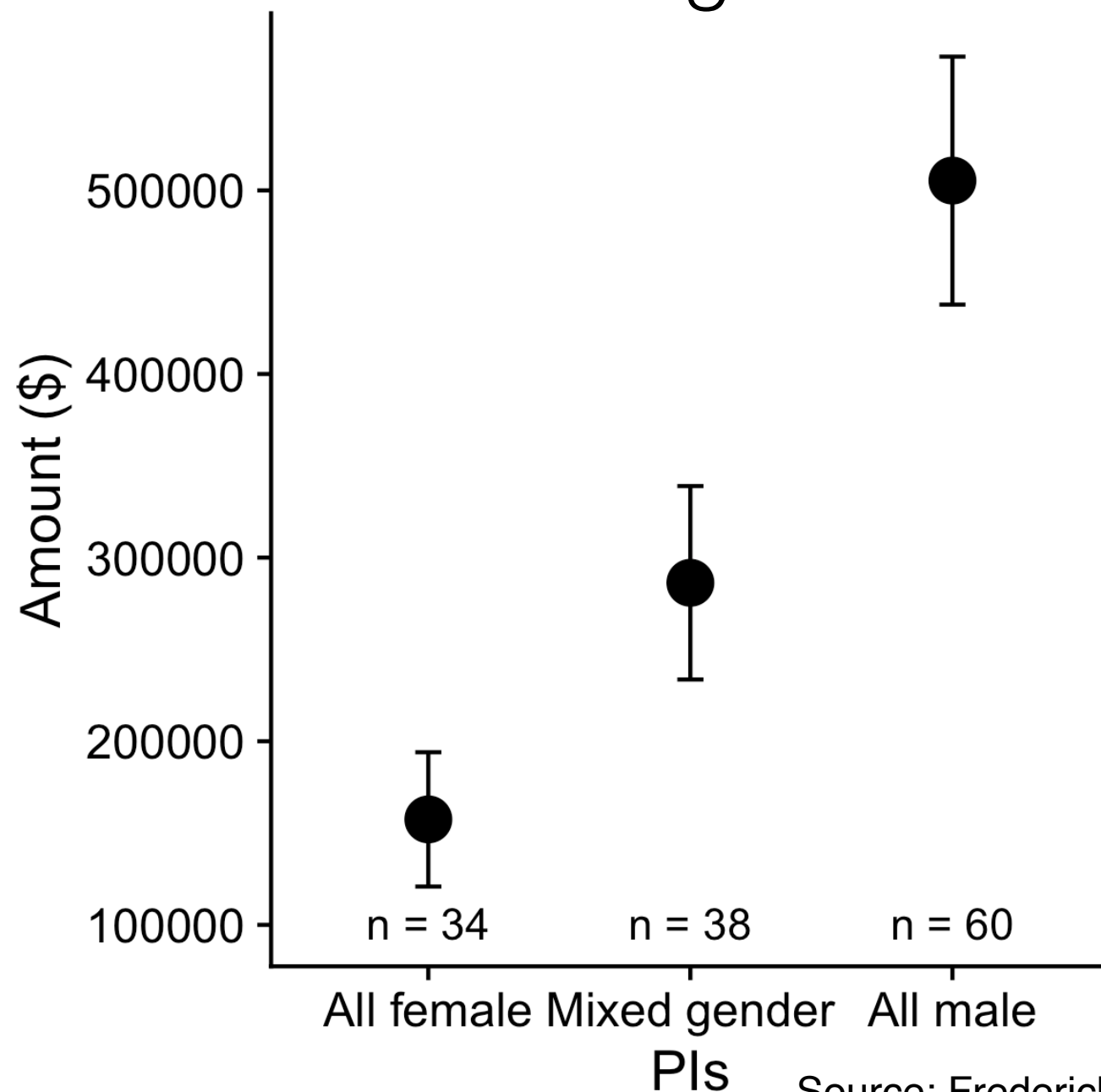
<https://voxeu.org/article/who-doing-new-research-time-covid-19-not-female-economists>

VERY PRELIMINARY ANALYSIS

In Canada, fewer research dollars are flowing to women scientists

CIHR

COVID-19 grants



NSERC

COVID-19 grants

- Women have won only 20% of the 178 NSERC Alliance COVID-19 grants awarded to date
- For comparison, women make up 25% of NSERC Discovery Grant holders

Source: Frederickson, unpubl. Data from CIHR and NSERC award databases

Possible mechanisms behind growing gender gaps

- Increased child care, elder care, or domestic labour not equally shared between men and women
- Demography may also play a role—the average male professor is a bit older than the average female professor, and thus perhaps less likely to be caring for small children
- Unequal teaching or service loads, exacerbated by the pandemic (e.g., virtual learning, etc.)
- Several studies have also cited risk-aversion as an explanation for the underrepresentation of women in COVID-19 research

Policy suggestions

- Teaching relief
- Funds for childcare? (But limited options during the pandemic)
- Tenure clock extensions (But gender-neutral policies sometimes benefit men more than women)
- Adjustment of evaluation criteria for hiring, grants, tenure, etc.
- Other ideas???
- Minello (2020) said “The only real solution is the classic one: a long-term investment in gender equality”

Discussion Questions

1. How has the COVID-19 pandemic impacted your work-life balance?
2. What steps should universities and funding agencies take to address gender or other inequities that are emerging as a result of the COVID-19 pandemic?