



The Impact of COVID-19 on Collaboration, Mentorship and Sponsorship, and the Role of Networks and Professional Organizations for Women in STEMM

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November 6, 2020

AGENDA



RESEARCH LENS & METHODS

Research Lens

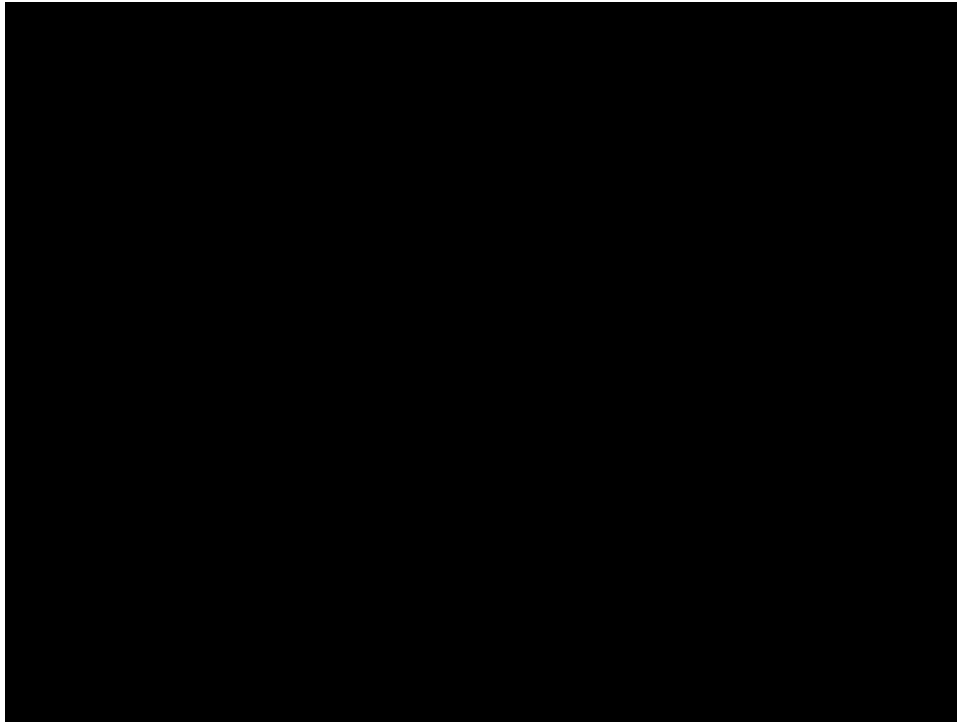
- Intentional
- Intersectional
- Inclusive

Research Methods

	Preprint/ Peer-reviewed/ Literature reviews/ Survey Reports	Opinion Pieces/media, newspapers, and blogs	Websites/ Webinars & Transcripts
Collaboration	3	4	TBD
Mentorship & Sponsorship	1	7	TBD
Professional Organizations and Networks	2	5	246
General Topics on Impact of COVID-19 on Women	2	11	3
Pre-Covid Work	7	2	N/A



HISTORY, RELEVANCE, & DIFFERENTIAL CONSIDERATIONS



KEY FINDINGS - IMPACT ON COLLABORATION

Collaboration/Publication - In General

Consolidation in a crisis: Patterns of international collaboration in early COVID-19 research (Fry CV, Cai X, Zhang Y, Wagner CS, 2020). PLoS ONE 15(7): e0236307.

<https://doi.org/10.1371/journal.pone.0236307>

Scientific globalism during a global crisis: research collaboration and open access publications on COVID-19. (Lee, J.J., Haupt, J.P., 2020) Higher Education,

<https://doi.org/10.1007/s10734-020-00589-0>

Key Findings

- COVID-19 research had smaller teams and involved fewer nations than pre-COVID-19 coronavirus research.
- China and the United States strengthen their bilateral research relationship during COVID-19, producing more than 4.9% of all global articles together, in contrast to 3.6% before the pandemic.
- International collaborations accounted for 5.7% more of the COVID-19 2020 publications than the non-COVID-19 2020 publications and 10% more than all international publications prior to the pandemic.



KEY FINDINGS - IMPACT ON COLLABORATION

Collaboration/Publication - Gender Equity Lens

COVID-19 amplifies gender disparities in research. Goran Muric, Kristina Lermana, and Emilio Ferraraa. arXiv:2006.06142v1 [cs.DL] 11 Jun 2020.

Key Findings:

- Proportion of women authors publishing on all topics as the first author decreased by 4.9%
- Proportion of women that write on COVID-19 related topics as the first authors decreased by 44.5% (expected arithmetic mean: 0.37; observed arithmetic mean: 0.2).
- When looking at the authors regardless of the order, the proportion of women writing about COVID-19 decreased by 15.4%
- Overall increase in number of papers published on preprint servers during the pandemic (26% for biorXiv and 363% for medRxiv)
- Decrease of publications on Springer-Nature journals (84%)
- COVID-19 related papers where the relative drop in proportion of females is 35% and 21% for medRxiv and biorXiv respectively.
- While still a decrease in proportion of female authors as the first authors across the disciplines, the fraction of women authors regardless of the authorship order is increasing from 0.33 to 0.38, that is the relative increase of 14%



KEY FINDINGS - IMPACT ON COLLABORATION

Collaboration/Publication - Gender Equity Lens

Meta-Research: Is Covid-19 Amplifying the Authorship Gender Gap in the Medical Literature? Jens Peter Andersen, Mathias Wullum Nielsen, Nicole L. Simone, Resa E. Lewiss, Reshma Jagsi. [arXiv:2005.06303](https://arxiv.org/abs/2005.06303) [cs.DL]

Meta-Research: COVID-19 medical papers have fewer women first authors than expected.

Jens Peter Andersen, Mathias Wullum Nielsen, Nicole L Simone, Resa E Lewiss, Reshma Jagsi

Key Findings:

- Paper 1: Estimated that women's shares of first authorships, last authorships and general representation per author group are 23%, 16% and 16% lower for COVID-19 papers compared to 2019 papers published in the same journals.
- Paper 2: Women's estimated share of first authorships, last authorships, and overall proportion per paper is 19%, 5% and 8% lower in the COVID-19 sample



KEY FINDINGS - IMPACT ON COLLABORATION

Editorials, Opinions, and Commentary

Publishing in a time of COVID-19: A message to our readers, authors, reviewers and production team. Keith Baker, Claire A Dunlop, Edoardo Ongaro. August 1, 2020 Editorial
<https://doi.org/10.1177/0952076720939712>

- *Public Policy and Administration (PPA)*- The data (based on the submitting author's gender) – comparing submissions made in March, April and May 2019 and 2020 do not show any fall for women or men.

Women, Academic Publishing and COVID-19. Roger Awan-Scully and Claire Dunlop
May 28, 2020.

- *Political Studies Association* - "Our data (based on submitting author's gender) comparing submissions made in the five months of March through July 2019 and 2020 show an increase for both women (33%+) and men (22%+)."

It Takes a Submission: Gendered Patterns in the Pages of AJPS. Kathleen Dolan and Jennifer L. Lawless.

- *American Journal of Political Science*- Processed 108 manuscripts received from March 15th through April 19th which included 54 female and 108 male authors.
- At the manuscript level, 41 of the 108 papers had at least one female author. That's 38% of the total, which is slightly greater share than the 35% of manuscripts with at least one female author in the larger data set.



KEY FINDINGS - MENTORING & SPONSORSHIP

Mentoring in academia during and beyond Covid-19. Ailie Tam and Sarah Bell on behalf of the Geographies of Health and Wellbeing Research Group (GHWRG) and the Gender and Feminist Geographies Research Group (GFGRG) Mentoring Working Group

- The demand for mentoring and the impact of Covid-19
- The need to re-define mentoring and stimulate new practices to shape the academy
- Driving forward a mentoring agenda

Driving forward a mentoring agenda

- Supporting the development of peer mentoring schemes *outside* people's own institutions
- Opening up meaningful mentoring channels for those who are not benefitting from any kind of immediate institutional mentoring/sponsorship support;
- Bringing together people from different sectors with complementary sets of experience and insight to share with each other;
- Creating opportunities for smaller peer mentoring networks to develop around thematic interests,



KEY FINDINGS - MENTORING & SPONSORSHIP

Peer mentoring for professional and personal growth in academic medicine.

Cree-Green M, Carreau A-M, Davis SM, et al. J Investig Med 2020;68:1128–1134.

Review various models of peer mentorship, highlighting their respective advantages and disadvantages

- **Social Media Peer Support- Related Press Release**
Peer Mentorship Can Be More Effective, Accessible Than Traditional Mentorship in Academic Medicine. Kelsea Pieters, July 23, 2020. Press release from CU Anschutz Medical Campus.

“A physician Facebook group that I belong to with a few thousand others in the U.S. has been 2-5 weeks ahead of what’s in the news re COVID-related topics – sharing instructions on how to print ventilator splitters, heparin dosing, ventilator settings. Those groups just started booming, and they absolutely made a huge difference to patient care.”

- Programs within Professional Organizations and evolving the definition of “sponsorship”



KEY FINDINGS - PROFESSIONAL ORGS & NETWORKS

# of Prof. Orgs/ Networks	Sci	Tech	Engr	Math	Med	Networks	Combo
246	91	23	97	4	17	6	14

ADVANCE Research and Coordination (ARC) Network - www.EquityInSTEM.org

Town Hall Series: Ensuring Equity in COVID-19 Institutional Responses

American Society for Engineering Education www.asee.org

Interim report on COVID-19 and Engineering Education

Association for Public Policy Analysis and Management - <https://www.appam.org/>

Launches COVID-19 Member Resources, Data and Research Collaboration Hub

Society for Women Engineers - www.swe.org

Impact of COVID-19 on Women in Engineering and Technology



NEXT STEPS - PROFESSIONAL ORGS & NETWORKS

Towards Large-Scale Inter-Institutional Change

Membership, Conferences, and Events

- Shifting from a members-only to open-access Model
- Promoting women scholars as keynotes and distinguished lectures

Mentorship and Sponsorship

- Building peer-mentoring networks
- Sponsorship: Awards and other methods of recognition

Removing Monoliths

- Prioritizing working/affinity groups
- Making data-driven decisions





Facilitated Q&A