

Gender Equity Considerations for Tenure and Promotion during COVID-19

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AS THE EFFECTS of COVID-19 emerge over time, it has become clear that the pandemic holds important implications for gendered inequalities in a variety of realms, including academia. Long-standing inequalities in both paid and domestic work appear to be exaggerated during the present pandemic circumstances in ways that disproportionately hinder the productivity of academic women. Stories in both news and social media abound of female scholars struggling to balance work and care demands while the productivity of their male colleagues rises (see, e.g., the twitter hashtag #coronapublicationgap). This commentary reviews emerging research in care and academic work during the COVID-19 pandemic to investigate evidence of this discrepancy in the research outputs of female and male faculty since the pandemic began severely affecting social life—in approximately March 2020. While it is still too early to get a complete picture of the pandemic's impact, evidence from research initiation reports, preprint servers, and journal submissions points to clear gendered differences—differences that are expected to become more pronounced over time and which will impact academic women's career advancement in years to come.

Importantly, the inequalities shaping women's and men's academic careers are not new; they existed well before COVID-19 hit North American universities in March. Gender differences in academic success are

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long-standing and have been documented across disciplines in academia, with BIPOC female faculty being especially penalized.¹ They include disparities between men's and women's representation in faculty positions, publication rates, citations, recognition, and salary that regularly favor men over women (Council of Canadian Academics 2012; Huang et al. 2020; King 2008; Ortega-Liston & Soto 2014; Timmons 2016). Existing research stresses that these differences are not reflective of differences in the merit of male and female scholars, but rather, systemic barriers impeding the productivity of female academics throughout their careers such as the structure of career absences (Cameron, White, and Gray 2016), the peer review process (Witteman et al. 2019), resource and grant allocation (Duch et al. 2012), service demands (Hanasono et al. 2019), implicit biases and stereotypes (King 2008), work climates (Milkman, Akinola, and Chugh 2012), and family and household responsibilities (Mason et al. 2005).²

These systemic barriers, particularly those around family and household responsibilities, are being exacerbated during the pandemic period. Rising care demands created by COVID-19—specifically those brought on by remote working, a lack of childcare, and the virus' particular risk to aging populations—are disproportionately incurred by women and impede their ability to work. The starkness of gender differences in productivity and its visibility during this time provokes a rethinking of how faculty will be evaluated for tenure and promotion during the pandemic and beyond it. With or without a vaccine, the effects of this pandemic will reverberate for years to come, both in the physical disruptions brought on by intermittent lockdowns and school and daycare closures, as well as the psychological toll that regular isolation puts on individuals, children, and families. This report underscores that the impact of those burdens are not incurred equally. The COVID-19 pandemic serves as an opportunity and a provocation to rethink our established ways of evaluating academic success to acknowledge and ameliorate systemic differences in its enactment. Doing so can help pave a more equitable path forward. The remainder of this document reviews emerging research on the gendered corona publication gap and presents suggestions for Tenure and Promotion Committees at Canadian Universities to consider to mitigate this gap when evaluating faculty research during the COVID-19 period.

1. The barriers discussed here have been shown to be especially strong for black and Indigenous women and women of color, for whom gender intersects with racial inequalities to create multiplicative disadvantages (Ong et al. 2011; Wu and Jing 2011). A full review of how gender intersects with racialized inequities is beyond the scope of this review, and at this time, no research exists documenting the differential research outputs of racialized groups during COVID-19. However, prepandemic research alongside anecdotal accounts during COVID-19 offer evidence that the disparities identified in this commentary are very likely exacerbated for Black and Indigenous women and women of color during the pandemic (Goodwin and Mitchneck 2020; OCUFA 2020a).

2. These barriers have also been shown to disproportionately push women into short-term and contract forms of academic work (Foster and Birdsell Bauer 2018)—a group of workers who are especially precarious at this time as they hold little in the way of rights, protections, or remuneration to help weather periods of economic uncertainty (O'Keefe and Courtois 2020).

LITERATURE REVIEW

Gender Disparities in Research Productivity during COVID-19

The period of the lockdown has been relatively short compared to normative research timelines, making it difficult to determine the precise impact of the COVID-19 pandemic on women's productivity; however, data from journal submissions, preprint servers, and databases logging the initiation of new research projects offers some indication of present productivity and indeed point to gendered disparities over the past few months.

Early evidence of gendered disparities in productivity has come from journal submissions. Reports from journal editors in the fields of International Studies, Political Science, Economics, Medicine, and Philosophy indicate that while overall journal submissions have risen since the pandemic hit, the proportion of those submissions authored by women, and especially sole-authored by women, in most cases has dropped. In particular, the editors of the four International Studies Association journals (*International Studies Quarterly*, *International Political Sociology*, *International Studies Review*, and *International Studies Perspectives*), as well as those of *British Journal for the Philosophy of Science*, *Comparative Political Studies*, and *Review of Economic Studies* have all reported smaller proportions of submissions by women within the first two months of the pandemic compared to prior to it (Fazackerley 2020; Flaherty 2020; Fuchs-Schündeln 2020; Wiegand et al. 2020). Additionally, while a report published by the *American Journal of Political Science* saw a slightly larger proportion of pandemic submissions by women, the proportion of sole-authored papers by women during this period fell, indicating that while female academics are still submitting manuscripts for publication during the crisis, they are submitting less of their own work than men (Dolan and Lawless 2020). The exaggerated disparities found in sole-authored publications are similarly found in other journals (Fazackerley 2020; Flaherty 2020; Wiegand et al. 2020). Lastly, in the field of medicine, Andersen et al. (2020) analyze the proportion of women publishing papers dedicated to the COVID-19 pandemic in medical journals and find that the proportion of papers with a woman first author during this period was 19 percent lower than for papers published in the same journals in 2019.

These findings offer some indication that gender inequalities are shaping COVID's impact on academic productivity; however, apart from publications dedicated to COVID itself, journal submissions are not the best indicator of productivity during COVID because they generally rely on a vast amount of work completed before the pandemic hit. Other researchers have turned to preprint servers as indicators of present research productivity. Many academics today post their in-progress or submitted research to these servers, so analyzing how the number of submissions to these servers varies by gender offers valuable insights into gendered

differences in academic productivity at the moment. In addition, preregistration reports—or reports filed by researchers to record the initiation of new research—can indicate of the extent to which new projects are being initiated by men and women, respectively.

A number of studies have analyzed preprint and preregistration databases from a variety of disciplines, and together, offer evidence that the pandemic is disproportionately hindering the productivity of female scholars (Amano-Patiño et al. 2020; Cui, Ding, and Zhu 2020; Frederickson 2020; Myers et al. 2020; Shurchkov 2020; Vincent-Lamarre, Sugimoto, and Larivière 2020a; 2020b; see Peters 2020; Viglione 2020 for a summary of many of these studies). For example, Frederickson (2020) analyzes two popular preprint servers in the STEM fields—ArXiv and bioRxiv—for differences in men’s and women’s submissions between March and April 15, 2020. Frederickson’s analysis shows that the proportion of men submitting to both these servers, as sole-authors and as co-authors, is growing faster than that of women when compared both to the months leading up to COVID and during the same period in 2019.

These trends also seem to hold true beyond the STEM fields. Analyzing the posting of preprints/working papers by female economists to seven databases, Shurchkov (2020) similarly found a 12 percent reduction in the posting of preprints and registered reports in March 2020 and a 20 percent reduction in April. Shurchkov hypothesizes that this drop will continue to grow in the coming months as many of these projects were likely in the works prior to the pandemic. Amano-Patiño et al. (2020) reveal similar findings among economics pre-prints. In addition, they also find that female economists are much less likely than men to be working on new projects related to the COVID pandemic—the proportion of female authors working on this new research is only 14.6 percent, whereas comparably, female authors usually make up about 20 percent of research in these databases.

Vincent-Lamarre, Sugimoto and Larivière (2020a, 2020b) expand the disciplinary scope of this analysis further by analyzing 11 preprint repositories and 3 platforms used for registering reports that indicate the initiation of new projects. Their analysis points to disparities in a variety of realms. First, when analyzing all 11 preprint repositories, they observed lower submission rates overall from women for March and April 2020 compared to both the preceding two months in 2020 and the same two months of 2019. Variations nonetheless existed by preprint repository, with the biggest drops in women’s submissions observed in EarthArXiv, medRxiv, NBER, and notably for the field of sociology, SocArXiv. In addition, they saw female authorship increasing prior to the pandemic—in January and February of 2020—in arXiv and bioRxiv, but then observed a drop in these repositories to match rates of the previous years during March and April. Third, the authors found that preregistration similarly dropped for women in two of the three repositories examined.

Importantly, Vincent-Lamarre et al.'s (2020a, 2020b) research also points to likely differences in the impact of the pandemic for female academics at different career stages. Their research reveals that there was a larger reduction in paper submissions where women were the first authors compared to those where they were the last authors. Given that the norm in many of the disciplines represented in these repositories is to assign the first authorship to a more junior scholar and the last authorship to a senior scholar, this trend suggests that the pandemic may disproportionately affect women in the early stages of their careers. This corresponds with growing calls to acknowledge the disproportionate impact of the COVID-19 lockdown on early career researchers as a whole, for whom disruptions in their careers could have compounding effects in years to come (Husby and Modinos 2020). Importantly, Vincent-Lamarre et al. (2020a, 2020b) note that the largest drop in early career female submissions was in COVID-related research. Given that this research is likely the best indication of work that is being conducted since (and in response to) the pandemic, this—along with similar findings by Amano-Patiño et al. (2020) and Andersen et al. (2020)—quite clearly demonstrates the differential impact of gender on academic productivity during COVID-19.

When interpreting these studies, it is important to recognize the heterogeneity of gendered experiences. Many female academics do not have children or other dependents, and some may have access to childcare at this time. In addition, some male academics are primary or co-equal caregivers in their families. Other women are single mothers. These models also generally assume that academics are living in heterosexual, two-parent family forms, when we know that family compositions vary significantly beyond it. In other words, not all female academics are equally constrained in the COVID-19 pandemic. However, what this does mean is that the above findings very likely underestimate COVID-19's impact on academic mothers since they represent women as a whole. Indeed, a survey of 4,500 Principal Investigators at American and European research institutions found that gender and having young children were the biggest predictors of research disruptions during the COVID-19 pandemic (Myers et al., 2020; see also Roberts, Kothe, and Wieden 2020).

In addition, it is important to acknowledge that the above studies rely on approximations of gender based on authors' names using name-gender algorithms. These algorithms have limitations in their potential to misgender or leave out authors—especially authors of color—in their analyses. While these algorithms do not accurately capture authors' gender in all instances, they have been shown to draw from data sets that are big enough to overcome these limitations and still offer insight into gender inequity.

Gender, Work, and Care during COVID-19

Research in the areas of gender, work, and care can help explain these disparities as the inequalities that inform them during the present circumstances are exaggerated versions of existing inequalities. As discussed, they largely stem from the disproportionate time women spend doing unpaid care and emotional work, both at home and within their departments. This section presents a brief overview of these disparities while introducing recent research exploring their manifestation within the pandemic.

Research expectations in higher education have been shown to favor those who can defer child and elder care, largely men who have partners performing full-time domestic labor and childcare (Mason et al., 2005). Those who are not able to defer care and domestic tasks therefore face added challenges to fulfilling those expectations. Long-standing evidence demonstrates that women perform significantly more domestic labor and care work than men, including in academic households (Bianchi et al. 2012; Mason et al. 2005; Shollen et al. 2009). For example, a study of medical faculty found that women spent 12 more hours per week on family and household responsibilities than their male colleagues (Shollen et al. 2009). In addition, male faculty are up to four times more likely than female faculty to be partnered with a stay-at-home spouse who engages in domestic work full-time (Schiebinger, Davies Henderson, and Gilmartin 2008:13). Female faculty (especially female faculty of color) have also been shown to perform more unpaid, emotional labor in universities such as through their disproportionate departmental and institutional service demands and the emotional labor they perform in the service of their students (Babcock et al. 2017; El-Alayli, Hansen-Brown, and Ceynar 2018; Guarino and Borden 2017; Hanasono et al. 2019; Mitchell and Hesli 2013; O'Meara 2018; Sprague and Massoni 2005). These demands create added obstacles for female faculty while navigating tenure and promotion expectations.

How do these inequalities play out during COVID-19? Anecdotal evidence suggests that work-family conflicts hindering female faculty's career advancement are exacerbated during COVID-19 because women's care responsibilities, for both their families and their students, becomes heightened under the emotional strain of the pandemic (Alon et al. 2020; Boncori 2020; Buckee 2020; Costa 2020; Goodwin and Michneck 2020; Jedd et al. 2020; Malisch et al. 2020; Minello 2020; Peters 2020; Pettit 2020; Staniscuaski et al. 2020). No research currently exists documenting the service or work-family demands of academics in particular; however, recent survey research into the division of labor among families more broadly during the pandemic offers insight into how gender shapes work-life balance at home among heterosexual parents with children.

Early research by Carlson, Petts, and Pepin (2020) of parents in the United States indicates that COVID-19 is both exacerbating and reducing

gender inequalities in the domestic division of labor among heterosexual couples with children. As with before the pandemic, mothers are holding primary responsibility for housework and childcare in most families during this time. For those mothers who are shouldering most of the domestic work, many report their time in that work has increased due to the addition of homeschooling responsibilities. However, the authors also argue that “the proportion of families where moms are primarily responsible for domestic labor have decreased substantially while the proportion reporting equal sharing of housework and childcare has increased” (9). This means that in many families, fathers are increasing their domestic workload in ways that likely reduce these burdens for their female partners. However, the authors also warn that these findings must be interpreted cautiously as “greater exposure to domestic work may also lead fathers to perceive that they are spending more time in these tasks than they actually are” (9). Indeed, the authors find that mothers and fathers disagreed substantially about the extent of fathers’ increased work (see also Cain Miller 2020). Schafer, Milkie, and Scheibling (2020) report similar findings within the Canadian context. They show that among two-parent opposite-sex families with children, the percentage of parents agreeing that housework and childcare was divided equally has risen modestly since the pandemic hit, but also that mothers’ and fathers’ reports varied significantly.

Research into parents’ time spent in paid work during the pandemic adds important complexity to these findings. Looking at dual earner heterosexual parents, Collins et al. (2020) find that mothers with children under 12 have reduced their work hours four to five times more than fathers (by about 5 percent or two hours a week, while fathers work hours generally remained stable). Similarly, Andrew et al. (2020) reveal that among families with two heterosexual parents, mothers are more likely than fathers to have left paid work due to the pandemic, and among those with both parents still in paid work, mothers have seen a larger proportional reduction of hours spent doing that work than fathers. They also find that mothers are more likely than fathers to spend their work hours simultaneously trying to care for children (see also Topping 2020 for a review of this research). The authors argue that “the combined effect is that in lockdown, mothers in two-parent households are only doing, on average, a third of the uninterrupted paid-work hours of fathers” (para. 4). In addition, mothers in this study were much more likely to be interrupted during their paid working hours than fathers: almost half (47 percent) of the time mothers spent on paid work was combined with other household or care activities, compared to 30 percent of fathers’ paid-work time.

Regarding household and care work, Andrew et al. (2020) find that during the pandemic, mothers recorded looking after children for an average of 10.3 hours per day—2.3 more hours per day than fathers. They

were similarly performing 1.7 more hours of housework per day than fathers. However, this research also indicates that fathers have increased the time they spend on domestic labor and childcare. It shows that on average, fathers are now spending twice as many hours on childcare as they were during 2014 to 2015, showing that they are now taking on a greater share of household responsibilities than they were prior to the crisis.

Together, these studies point to a few trends in paid and care work among heterosexual couples: fathers do seem to be increasing the amount of time they spend in care and domestic work; however, mothers still perform much more of that work than fathers, and it is more likely to impede on mothers' paid-work time than fathers'. In addition, mothers spend much more of their paid-work hours simultaneously caring for children or their households. This latter discrepancy is especially important for academics for whom focused, uninterrupted time is crucial to success.

CONCLUSIONS AND SUGGESTIONS FOR ACTION

The full extent of COVID-19's impact on gendered disparities in productivity among academics will take time to emerge. However, the early research highlighted here offers a preview of the issues involved—issues that are long-standing but exaggerated now as people's work and domestic lives have amalgamated and gendered disparities have become more visible. The COVID-19 pandemic represents a moment where equity issues hang precariously in the balance. This research points to the necessity of universities to consider how their evaluation systems can take into account gendered inequities in labor distribution that negatively affect academic women, and particularly those caring for school age and younger children, elders, and other dependents with special needs.

Drawing from existing recommendations derived from research centers and communications across North America (ASA 2020; Centre for Work Life Law 2013; Cohen Miller 2020; Gonzalez and Griffin 2020; Kaufman 2020; Malish et al. 2020; McKinley and Stephen 2020; OCUFA 2020a; Stawser 2020; Stoye 2020), this report identifies 10 strategies that tenure and promotion committees and university administrators can consider to address the disparities outlined in this report. As a whole, these recommendations highlight the need for institutional flexibility and creative decision-making to account for the needs of instructional faculty that are caring for children, elders, and/or other dependents with special needs. Through their application, Canadian universities can work toward building academic infrastructure that encourages the success of diverse groups while acknowledging systemic differences in their ability to do so.

- (1) Provide tenure-track faculty with a one-year *extension on their tenure clocks* to provide additional time to meet tenure criteria, offering the opportunity for faculty to *opt out* if desired.³
- (2) *Allow nonessential scholarship to be paused* during the pandemic and consider “hold harmless” *notifications in tenure and promotion applications* that inform tenure and promotion committees that they should lower the standard for promotion for that period. This could also include reevaluating discipline-specific metric indicators and timely progress standards for tenure and other evaluations.
- (3) Provide faculty (and especially junior faculty) with care demands *more research and teaching support and greater flexibility to utilize that support*. This could include, for example, setting up temporary discretionary accounts to hire RAs or support staff for those with added care burdens during the pandemic, or allowing faculty research accounts to support caretakers.
- (4) *Limit meetings* wherever possible and *optimize the efficiency* of those that remain in place.
- (5) *Waive nonessential service for those with caregiving demands* until there is a COVID-19 vaccine. This includes, for example, curriculum review and reform, peer teaching reviews, and nonessential faculty meetings.
- (6) *Waive teaching evaluations* for COVID-19 semesters.
- (7) Encourage a *community response* to faculty support—where faculty help one another, especially those with little or no care demands offering support to those who do (e.g., by taking on more service work or offering to guest lecture in classes). Identify and advance support systems within departments and universities for those with care demands.
- (8) Utilize *language* that recognizes the impact of the pandemic on academic parents, and mothers in particular, in departmental and university communications. This entails recognizing and communicating that we are doing “business as best we can” rather than “business as usual” or “at a standard of excellence.”
- (9) *Clarify expectations* for faculty during this time to minimize the added stresses that come from the uncertainty surrounding how the pandemic will impact their administrators’ expectations of their performance.

³ While common, tenure clock extensions on their own are not a panacea for faculty inequities. They have been shown to possess a variety of negative implications for female faculty because they ultimately end up excluding female faculty from positions and grants that require tenure and decrease their long-term earning potential, especially for those who have taken more than one extension (e.g., for parental leave). Men and women have also not been shown to utilize leaves in the same way, with women more likely to engage in caregiving full-time and men to produce scholarship (Antecol, Bedard, and Stearns 2018; Malisch et al. 2020; Manchester, Leslie, and Kramer 2013).

- (10) Work toward *shifting institutional norms* around gender, work, and carework. This includes not praising men for their childcare responsibilities while penalizing women for it, informing faculty and students about the gender citation gap and its foundations, and normalizing the bleeding of caregiving and academic work (when, e.g., mothers need to pump breast milk at work or parents need to bring their children to campus). It also includes modeling work-life balance by being cognizant of how Emailing in the middle of the night, for example, may normalize overwork.

Importantly, faculty across Ontario universities have also expressed concern that university administrations have circumvented democratic, transparent, and accountable governance practices while making decisions during the pandemic. The Ontario Confederation of University Faculty Associations (2020b) has urged universities to *return to the democratic governance structures* that have long guided their operations by ensuring senate, academic council, and faculty consultation in their decision-making.

REFERENCES

- Alon, T.M., M. Doepke, J. Olmstead-Rumsey and M. Tertilt. 2020. "The Impact of COVID-19 on Gender Equality." NBER Working Paper No. 26947. Retrieved July 14, 2020 (<https://www.nber.org/papers/w26947.pdf>).
- Amano-Patiño, N., E. Faraglia, C. Giannitsarou and Z. Hasna. 2020. "Who Is Doing New Research in the Time of COVID-19? Not the Female Economists." *Vox EU*. Retrieved July 14, 2020 (<https://voxeu.org/article/who-doing-new-research-time-covid-19-not-female-economists>).
- American Sociological Association (ASA). 2020. "A Call to Higher Education Administrators Regarding Faculty Review and Reappointment Processes during the COVID-19 Crisis." Retrieved July 14, 2020 (<https://www.asanet.org/news-events/asa-news/asa-statement-regarding-faculty-review-and-reappointment-processes-during-covid-19-crisis>).
- Andersen, J.P., M.W. Nielsen, N.L. Simone, R.E. Lewiss and R. Jagsi. 2020. "Meta-Research: COVID-19 Medical Papers have Fewer Women First Authors than Expected." Preprint arXiv:2005.06303. Retrieved July 25, 2020 (<https://arxiv.org/pdf/2005.06303.pdf>).
- Andrew, A., S. Cattan, M. Costa Dias, C. Farquharson, L. Kraftman, S. Krutikova, A. Phimister and A. Sevilla. 2020. *Parents, Especially Mothers, Paying Heavy Price for Lockdown*. London: Institute for Fiscal Studies. Retrieved July 14, 2020 (<https://www.ifs.org.uk/publications/14861>).
- Antecol, H., K. Bedard and Stearns, J. 2018. "Equal but Inequitable: Who Benefits from Gender-Neutral Tenure Clock Stopping Policies?" *American Economic Review* 108(9):2420–41.
- Babcock, L., M.P. Recalde, L. Vesterlund and L. Weingart. 2017. "Gender Differences in Accepting and Receiving Requests for Tasks with Low Promotability." *American Economic Review* 107(3):714–47.
- Bianchi, S.M., L.C. Sayer, M.A. Milkie and J.P. Robinson. 2012. "Housework: Who Did, Does or Will Do It, and How Much Does It Matter?" *Social Forces* 91(1):55–63.

- Boncori, I. 2020. "The Neverending Shift: A Feminist Reflection on Living and Organising Academic Lives during the Coronavirus Pandemic." *Gender, Work & Organization*. <https://doi.org/10.1111/gwao.12451>.
- Buckee, C. 2020. "Women in Science Are Battling Both Covid-19 and the Patriarchy." *Times Higher Education*. Retrieved July 14, 2020 (<https://www.timeshighereducation.com/blog/women-science-are-battling-both-covid-19-and-patriarchy>).
- Cain Miller, C. 2020. "Nearly Half of Men Say They Do Most of the Home Schooling. 3 Percent of Women Agree." *The New York Times*. Retrieved July 14, 2020 (<https://www.nytimes.com/2020/05/06/upshot/pandemic-chores-homeschooling-gender.html>).
- Cameron, E.Z., A.M. White and M.E. Gray. 2016. "Solving the Productivity and Impact Puzzle: Do Men Outperform Women, or are Metrics Biased?" *BioScience* 66(3):245–52.
- Carlson, D.L., R. Petts and J.R. Pepin. 2020. "US Couples' Divisions of Housework and Child-care During COVID-19 Pandemic." Retrieved July 14, 2020 (<https://doi.org/10.31235/osf.io/jy8fn>).
- Centre for Work Life Law. 2013. *Effective Policies and Programs for Retention and Advancement of Women in Academia*. San Francisco, CA: UC Hastings College of Law. Retrieved July 14, 2020 (https://www.med.upenn.edu/focus/user_documents/Effective-Policies-and-Programs-for-Retention-and-Advancement-of-Women-in-Academia_000.pdf).
- Cohen Miller, A. 2020. *Promoting Equity and Inclusion for Mothers in Academe*. Inside Higher Ed. Retrieved July 14, 2020 (<https://www.insidehighered.com/blogs/university-venus/promoting-equity-and-inclusion-mothers-academe>).
- Collins, C., L.C. Landivar, L. Ruppanner and W.J. Scarborough. 2020. "COVID-19 and the Gender Gap in Work Hours." *Gender, Work, & Organisation*. <https://doi.org/10.1111/gwao.12506>.
- Costa, K. 2020. *Women's Emotional Labor in Higher Ed and the COVID-19 Crisis*. Women in Higher Education. Retrieved July 14, 2020 (<https://www.wihe.com/article-details/147/women-s-emotional-labor-in-higher-ed-and-the-covid-19-crisis/>).
- Council of Canadian Academies. 2012. *Strengthening Canada's Research Capacity: The Gender Dimension*. The Expert Panel on Women in University Research. Ottawa: The Council of Canadian Academies.
- Cui, R., H. Ding and F. Zhu. 2020. "Gender Inequality in Research Productivity During the COVID-19 Pandemic." Retrieved July 14, 2020 (<http://doi.org/10.2139/ssrn.3623492>).
- Dolan, K. and J.L. Lawless. 2020. "It Takes a Submission: Gendered Patterns in the Pages of AJPS." *American Journal of Political Science*. Retrieved July 14, 2020 (<https://ajps.org/2020/04/20/it-takes-a-submission-gendered-patterns-in-the-pages-of-ajps/>).
- Duch, J., X.H.T Zeng, M. Sales-Pardo, F. Radicchi, S. Otis, T.K. Woodruff and L.A.N Amaral. 2012. "The Possible Role of Resource Requirements and Academic Career-Choice Risk on Gender Differences in Publication Rate and Impact." *PLoS One* 7(12):e51332.
- El-Alayli, A., A.A. Hansen-Brown and M. Ceynar. 2018. "Dancing Backwards in High Heels: Female Professors Experience More Work Demands and Special Favor Requests, Particularly from Academically Entitled Students." *Sex Roles* 79(3–4):36–150.
- Fazackerley, A. 2020. "Women's Research Plummets during Lockdown—But Articles from Men Increase." *The Guardian*. Retrieved July 14, 2020 (<https://www.theguardian.com/education/2020/may/12/womens-research-plummets-during-lockdown-but-articles-from-men-increase>).
- Flaherty, C. 2020. *No Room of One's Own: Early Journal Submission Data Suggest COVID-19 is Tanking Women's Research Productivity*. Inside Higher Ed.

- Retrieved July 14, 2020 (<https://www.insidehighered.com/news/2020/04/21/early-journal-submission-data-suggest-covid-19-tanking-womens-research-productivity>).
- Foster, K. and L. Birdsall Bauer. 2018. *Out of the Shadows: Experiences of Contract Academic Staff*. Ottawa: Canadian Association of University Teachers (CAUT). Retrieved July 14, 2020 (https://www.caut.ca/sites/default/files/cas_report.pdf).
- Frederickson, M. 2020. "COVID-19's Gendered Impact on Academic Productivity." Github. Retrieved July 14, 2020 (<https://github.com/drfreder/pandemic-pub-bias/blob/master/README.md>).
- Fuchs-Schündeln, N. 2020. "Gender Structure of Paper Submissions at the Review of Economic Studies during COVID-19: First Evidence." Mimeo. Retrieved July 14, 2020 (<https://www.wiwi.un-frankfurt.de/profs/fuchs/staff/fuchs/paper/FemaleSubmissionsCovid19.pdf>).
- Gonzalez, L.D. and K.A. Griffin. 2020. *Supporting Faculty during & after COVID-19: Don't Let Go of Equity*. Washington, DC: Aspire Alliance. Retrieved July 14, 2020 (<https://www.mtu.edu/advance/resources/articles-books/supporting-faculty-during-and-after-covid.pdf>).
- Goodwin, S.A. and B. Mitchneck. 2020. *STEM Equity and Inclusion (Un)Interrupted?* Inside Higher Ed. Retrieved July 14, 2020 (<https://www.insidehighered.com/views/2020/05/13/ensuring-pandemic-doesnt-negatively-impact-women-stem-especially-those-color>).
- Guarino, C.M. and V.M.H. Borden. 2017. "Faculty Service Loads and Gender: Are Women Taking Care of the Academic Family?" *Research in Higher Education* 58:672–94.
- Hanasono, L.K., E.M. Broido, M.M., Yacobucci, K.V. Root, S Peña and D.A. O'Neil. 2019. "Secret Service: Revealing Gender Biases in the Visibility and Value of Faculty Service." *Journal of Diversity in Higher Education* 12(1):85–98.
- Huang, J., A.J. Gates, R. Sinatra and A.L. Barabási. 2020. "Historical Comparison of Gender Inequality in Scientific Careers across Countries and Disciplines." *Proceedings of the National Academy of Sciences* 117(9):4609–616.
- Husby, A. and G. Modinos. 2020. "Support Early-Career Researchers for Post-Pandemic Prospects." *Nature*. Retrieved July 14, 2020 (<https://www.nature.com/articles/d41586-020-01031-2>).
- Jedd, T. et al. 2020. "Scientist Mothers Face Extra Challenges in the Face of COVID-19." Scientific American Blog. Retrieved July 14, 2020 (<https://blogs.scientificamerican.com/voices/scientist-mothers-face-extra-challenges-in-the-face-of-covid-19/>).
- Kaufman, M. 2020. "Academic Moms Need Support during the Pandemic—Here's How." Medium. Retrieved July 14, 2020 (<https://medium.com/@mkaufman99/suggestions-for-supporting-vulnerable-academics-during-the-pandemic-moms-24f7d2481433>).
- King, E.B. 2008. "The Effect of Bias on the Advancement of Working Mothers: Disentangling Legitimate Concerns from Inaccurate Stereotypes as Predictors of Advancement in Academe." *Human Relations* 61(12):1677–1711.
- Malisch, J. et al. 2020. "In the Wake of COVID-19, Academia Needs New Solutions to Ensure Gender Equity." *Proceedings of the National Academy of Sciences*. <https://doi.org/10.1073/pnas.2010636117>.
- Manchester, C.F., L.M. Leslie and A. Kramer. 2013. "Is the Clock Still Ticking? An Evaluation of the Consequences of Stopping the Tenure Clock." *ILR Review* 66(1):3–31.
- Mason, M.A., A. Stacy, M. Goulden, C. Hoffman and K. Frasch. 2005. *University of California Faculty Family Friendly Adge: An Initiative for Tenure-Track Faculty at the University of California*. Oakland, CA: University of California. Retrieved July 14, 2020 (<https://ucfamilyedge.berkeley.edu/sites/default/files/ucfamilyedge.pdf>).

- McKinley, M. and L. Stephen. 2020. *Labor Inequities for Faculty and GE Caregivers during COVID-19: A Call to Action*. University of Oregon Centre for the Study of Women in Society. Retrieved July 14, 2020 (<https://csws.uoregon.edu/labor-inequities-covid-19/>).
- Milkman, K.L., M. Akinola and D. Chugh. 2012. "Temporal Distance and Discrimination: An Audit Study in Academia." *Psychological Science* 23(7):710–17.
- Minello, A. 2020. "The Pandemic and the Female Academic." *Nature*. Retrieved July 14, 2020 (<https://www.nature.com/articles/d41586-020-01135-9>).
- Mitchell, S.M. and V.L. Hesli. 2013. "Women Don't Ask? Women Don't Say No? Bargaining and Service in the Political Science Profession." *Political Science & Politics* 46(2):355–69.
- Myers, K., W. Yang, T. Yian Yin, N. Cohodes, J.G. Thursby, M. Thursby, P. Schiffer, J. Walsh, K.R. Lakhani and D. Wang. 2020. "Quantifying the Immediate Effects of the COVID-19 Pandemic on Scientists." Retrieved July 14, 2020 (<https://arxiv.org/pdf/2005.11358.pdf>).
- O'Keefe T. and A. Courtois. 2020. "Who Does the 'Housework of the University' During a Pandemic? The Impact of COVID-19 on Precarious Women Working in Universities." *Gender & Society Blog*. Retrieved July 14, 2020 (<https://gendersociety.wordpress.com/2020/06/30/who-does-the-housework-of-the-university-during-a-pandemic-the-impact-of-covid-19-on-precarious-women-working-in-universities/>).
- O'Meara, K. 2018. *Undoing the Can of Worms*. Inside Higher Ed. Retrieved July 14, 2020 (<https://www.insidehighered.com/advice/2018/06/27/how-make-faculty-service-demands-more-equitable-opinion>).
- Ong, M., C. Wright, L. Espinosa and G. Orfield. 2011. "Inside the Double Bind: A Synthesis of Empirical Research on Undergraduate and Graduate Women of Color in Science, Technology, Engineering, and Mathematics." *Harvard Educational Review* 81(2):172–209.
- Ontario Confederation of University Faculty Associations (OCUFA). 2020a. "COVID-19 and the Academy: What Will the Pandemic Mean for Ontario's Universities, Faculty, and Students?" Retrieved July 14, 2020 (<https://ocufa.on.ca/assets/2020-05-20-OCUFA-Submission-COVID-19-and-the-academy.pdf>).
- Ontario Confederation of University Faculty Associations (OCUFA). 2020b. "Working Together to Build a Vibrant Future for Ontario's Universities." Retrieved July 14, 2020 (<https://ocufa.on.ca/blog-posts/working-together-to-build-a-vibrant-future-for-ontarios-universities/>).
- Ortega-Liston, R. and I. Rodriguez Soto. 2014. "Challenges, Choices, and Decisions of Women in Higher Education: A Discourse on the Future of Hispanic, Black, and Asian Members of the Professoriate." *Journal of Hispanic Higher Education* 13(4):285–302.
- Peters, D. 2020. "Women Academics Worry the Pandemic is Squeezing their Research Productivity." *University Affairs*. Retrieved July 14, 2020 (<https://www.universityaffairs.ca/news/news-article/women-academics-worry-the-pandemic-is-squeezing-their-research-productivity/>).
- Pettit, E. 2020. "Being a Woman in Academe Has Its Challenges. A Global Pandemic? Not Helping." *The Chronicle of Higher Education*. Retrieved July 14, 2020 (<https://www.chronicle.com/article/Being-a-Woman-in-Academe-Has/248852>).
- Roberts, L., U. Kothe and H. Wieden. 2020. "Parenting Researchers—An Invisible Divide." *EMBO Reports*. <https://doi.org/10.15252/embr.202050738>.
- Schiebinger, L., A. Davies Henderson and S.K. Gilmartin. 2008. *Dual-Career Academic Couples: What Universities Need to Know*. Stanford, CA: Michelle R. Clayman Institute for Gender Research. Stanford University. Retrieved July 14, 2020 (https://gender.stanford.edu/sites/g/files/sbiybj5961/f/publications/dualcareerfinal_0.pdf).

- Shafer, K., M. Milkie and C. Scheibling. 2020. "The Division of Labour Before & During the COVID-19 Pandemic in Canada." <https://doi.org/10.31235/osf.io/24j87>.
- Shollen, S.L., C.J. Bland, D.A. Finstad and A.L. Taylor. 2009. "Organizational Climate and Family Life: How These Factors Affect the Status of Women Faculty at One Medical School." *Academic Medicine* 84(1):87–94.
- Shurchkov, O. 2020. "Is COVID-19 Turning Back the Clock on Gender Equality in Academia?" Medium. Retrieved July 14, 2020 (<https://medium.com/@olga.shurchkov/is-covid-19-turning-back-the-clock-on-gender-equality-in-academia-70c00d6b8ba1>).
- Sprague, J. and K. Massoni. 2005. "Student Evaluations and Gendered Expectations: What We Can't Count Can Hurt Us." *Sex Roles* 53(11):779–93.
- Staniscuaski, F., F. Reichert, F.P. Werneck, L. de Oliveira, P.B. Mello-Carpes, R.C. Soletti, C.I. Almeida, E. Zandona, F.K. Ricachenevsky, A. Neumann, I.V.D. Schwartz, A.S.K. Tamajusuku, A. Seixas, L. Kmetzsch. 2020. "Impact of COVID-19 on Academic Mothers." *Science*. Retrieved July 14, 2020 (<https://science.sciencemag.org/content/368/6492/724.1>).
- Stoye, E. 2020. "How Research Funders Are Tackling Coronavirus Disruption." *Nature*. Retrieved July 14, 2020 (<https://www.nature.com/articles/d41586-020-01120-2>).
- Strawser, M. 2020. *Navigating the New Professoriate*. Inside Higher Ed. Retrieved July 14, 2020 (<https://www.insidehighered.com/advice/2020/06/02/how-academic-administrators-can-help-faculty-handle-increased-expectations-while>).
- Timmons, V. 2016. "Closing the Gender Gap at Canadian Universities." *Policy*. Retrieved July 14, 2020 (<http://www.policymagazine.ca/pdf/21/PolicyMagazineSeptemberOctober-2016-Timmons.pdf>).
- Topping, A. 2020. "Working Mothers Interrupted More Often Than Fathers in Lockdown—Study." *The Guardian*. Retrieved July 14, 2020 (<https://www.theguardian.com/world/2020/may/27/working-mothers-interrupted-more-often-than-fathers-in-lockdown-study>).
- Viglioni, G. 2020. "Are Women Publishing Less during the Pandemic? Here's What the Data Say." *Nature*. Retrieved July 14, 2020 (<https://www.nature.com/articles/d41586-020-01294-9>).
- Vincent-Lamarre, P., C.R. Sugimoto and V. Larivière. 2020a. "The Decline of Women's Research Production during the Coronavirus Pandemic." *Nature Index*. Retrieved July 14, 2020 (<https://www.natureindex.com/news-blog/decline-women-scientist-research-publishing-production-coronavirus-pandemic>).
- Vincent-Lamarre, P., C.R. Sugimoto and V. Larivière. 2020b. "Monitoring Women's Scholarly Production during the COVID-19 Pandemic." Retrieved July 14, 2020 (<http://shiny.initiativesnumeriques.org/monitoring-scholarly-covid/>).
- Wiegand, K., D. Lisle, M. Murdie and J. Scott. 2020. "Journal Submissions in Times of COVID-19: Is There a Gender Gap?" *Duck of Minerva*. Retrieved July 14, 2020 (<https://duckofminerva.com/2020/05/journal-submissions-in-times-of-covid-19-is-there-a-gender-gap.html>).
- Witteman, H.O., M. Hendricks, S. Straus and C. Tannenbaum. 2019. "Are Gender Gaps Due to Evaluations of the Applicant or the Science? A Natural Experiment at a National Funding Agency." *The Lancet* 393(10171):531–40.
- Wu, L. and W. Jing. 2011. "Asian Women in STEM Careers: An Invisible Minority in a Double Bind." *Issues in Science and Technology* 28(1):82.