

Lost ground: Female academics face an uphill battle in post-pandemic world.

Tricia Stadnyk¹ and Kerry Black²

¹Dept. Geography, University of Calgary, Calgary AB, T2N 1N4

²Dept. Civil Engineering, University of Calgary, Calgary AB, T2N 1N4

In a post-COVID World, how long will it take for things to return to 'normal'? This is a question posed universally across every discipline, country, and gender. In a profession where advancement is tied to the number of publications, where equity and diversity discrepancies have only just come to the surface, and where 'normal' was only just beginning to include an equitable place and space for female researchers, female academics will arguably have a long road ahead. Early evidence highlighted in a recent article in *Nature* suggests that signs are already pointing to a decrease in productivity for female researchers. This, for many, comes as no surprise.

Diminishing diversity

As a female Professor, particularly in the applied sciences, your career has already been marked by a need to justify your place at the table, working faster and harder than others to be seen as equal, and sitting on three or four times as many hiring committees as your male counterparts as a result of equality, diversity and inclusion (EDI) measures to ensure selection by representative peers. In recent years, there has been a notable shift in the academic environment, with a stronger push toward equity and diversity, flexibility in parental leave and its implications on productivity, and more quantifiable EDI metrics used within universities often required to secure government funding. Therefore, for many of us, there was a measurable sense that things were becoming, well, more...equal.

COVID-19 has changed all of that, not in the short term, but for the long term. If we are not cautious about how we proceed following the pandemic, the result will be fewer females in leadership positions, fewer female voices at the table, and a growing gap in gender inequality. Diminishing diversity in the workplace will have significant and far-reaching impacts on not only skillful training and idea generation, but also on recruitment, particularly of female trainees (i.e., '*you can't be what you can't see*' as described by Murabit, 2020), creating a vicious negative feedback loop for generations to come.

Partners of women leaders and academics necessarily play a more active role in childcare. Despite this, inequalities are emerging out of necessity during COVID times. We are academics, our partners are professionals. Today, the majority of professional workplace meetings are still occurring during 'working hours', including coordination with staff members and supervisors. For partnerships that are a mix of academia and professionals, childcare responsibilities often fall back on the academics to accommodate work hours because the lifestyle is largely self-driven and flexible. For partnerships formed of two academics, we still see a greater proportion of household responsibility falling, in many cases, to females. As female academics, we are often planning the home schooling lessons and schedule, delivering the more tactile-learning

science and art modules to our kids, and overseeing family itineraries. It is fair to say that, like many women, we are the household coordinators, but with a lot more happening at home – there is a lot more work to do.

Our friends and colleagues in other professions echo these sentiments, reporting the same behaviours and roles: more of the household coordination tasks, planning and organization is falling on them, even though there may be two parents working from home. Unlike our academic lifestyle, their work schedule is far less flexible, and they are quickly reaching their breaking point. How long can we continue to manage this delicate balancing act? All reports indicate that this pandemic lifestyle is not a sprint, but likely a marathon.

A problem of output-based assessment

In academia, productivity is measured by numbers of publications that a person produces and highly qualified personnel (HQP) that they mentor; statistics that are quoted over the long-term and that stay with you for your entire career. Even a one-year blip is enough for a candidate to lose a position or to be ranked lower among their peers. These statistics are used not only during the hiring process, but also for internal promotion, salary increases and merit awards. Many universities have already responded with policies that provide an extra year for tenure and promotion applications; presumably taking the pressure off junior academics worried about the “incompatibility between childcare and academia” and how this dilemma will affect their career prospects. While this is a good start, it is not enough, and does not support those who have already achieved tenure and promotion.

The problem runs a lot deeper than that, however, when you consider we will now compete against colleagues whose careers are bolstered by this “highly productive” period of time: working from home, in relative isolation, with little else to do other than write and submit papers. Major journals around the world have already reported a 25% increase in submission rates, which is sadly accompanied by a distinct (and unprecedented) flattening of female-led or co-authored submissions (Flaherty, 2020). This is not the type of “flattening the curve” we were aiming for as a society.

The emerging supportive policies and gradual progress within academia in recent years that was helping to level the playing field were the incentives to stay in the game. Increased competition with hyper-productive colleagues feels like an insurmountable challenge to many other academic women now, and will most certainly impact future hiring, student recruitment, internal promotion and awards, and competition for research chairs and other reputable positions. We fear that, if not dealt with proactively by our higher education institutions, we will be dealing with a burst rather than merely a ‘leaky’ pipeline (Ogden, 2012).

This applies well beyond academia. Colleagues who work in industry fear that taking your foot off the gas in the workplace now to accommodate more flexible childcare, or even suggesting different meeting times because of “childcare” responsibilities, will be evidence in support of termination during times of fiscal austerity. It has been said that balancing career, childcare,

home schooling and household duties and still maintaining one's physical and mental health is an impossible challenge – one that we should not pressure ourselves into thinking is achievable. Something must give – but women should not be asked to choose between their families and their careers or future career prospects.

More than just 'a woman's' problem

It is important to emphasize that this is not *exclusively* a woman's problem: it is a family values and work-life balance problem. Many of our male colleagues in academia also find themselves in the same, precarious position: stepping up at home, taking an active role in childcare and household planning, the preparation and delivery of daily home school lessons, meals, and cleaning tasks. It will be a stronger debate with male voices at the table on this issue and one that our leaders are more apt to listen to and act on.

The link between diversity in the workplace and innovation through a broadening of viewpoints has been well established (Nielsen, 2017). Based on this, we fear the implications of this pandemic will be far reaching and long lasting within society. If there are not solid, concrete measures put into place now to mitigate the disproportionate impact on careers of those responsible for childcare, we stand to lose more diversity within our future workplaces. All employers need to ask themselves what they will do to bridge this widening gap – and vocalize that as incentive for people to stay in the game – if they would like to preserve diversity, creativity and innovation within their workplace.

A path forward

It is one thing to recognize and vocalize the issues related to EDI in the workplace, which COVID-19 is helping to push to the forefront. It is yet another to act upon these issues, and to tackle the complexities resulting in systemic inequity within the workplace. The tragedy greater than the COVID-19 pandemic itself will be a failure to recognize and act on the increasing inequities going forward. The question is, what can be done? Conversations with colleagues over the past month have brought to light two things: (1) a growing recognition and acceptance of inequities, and (2) an urgency to act upon it.

Short-term measures, such as not including 2020 metrics in future comparative evaluation, or increasing tenure-track position terms, can assist with levelling the playing field such that those who were unable to produce are not penalized for their short-term decrease in productivity, and those who were hyper-productive do not unreasonably benefit from this productivity. This, however, does not address the inherent time lag associated with publishing and the fact that a decrease in productivity can impact publication for more than one year, or the compounding impact of citations in years to come. For example, Clark and Hanson (2017) demonstrated that the true impact of a publication, in some fields, may span decades with respect to citation indices.

Longer-term solutions are needed, and it is our position that the issue is not COVID-19 but rather with academic evaluation itself. What is needed, and long overdue in academia, is a radical shift toward less quantitative and more qualitative metrics. The very idea of this will not sit well with some colleagues, but it should not be interpreted as a call for lack of rigour in evaluation, but rather a shift in what we value or prioritize as valuable and skillful training in academia.

We propose that skillful leadership is not measurable by quantitative metrics (citations and impact factors) alone but should include investment in and emphasis on ‘soft skills’, or non-technical training (i.e., communication, influencing, and empathy), skills that EDI groups often emphasize in their training and yet remain unquantifiable as success metrics. One example is informal mentorship of our undergraduate students. Female academics can spend a significant amount of time mentoring students on specific jobs, careers, and how to effectively communicate and problem solve with employers and their peers. Time spent often results in recruitment of these students as research assistants, and later as graduate students. At a minimum, it creates lasting mentor-mentee relationships that bridge the crucial gap between academia and industry. The cost, in this case, is a significant proportion of time that remains ‘unaccounted’ for, but which nevertheless makes a demonstrable impact on the outcome of our students and trainees - and arguably – on society. It is also noteworthy that many of these informal encounters occur with female students, which again points to the crucial role that female leadership plays for recruitment and retention of females within STEM professions (Gewin, 2018).

These informal mentorship opportunities are only one example of outcome-based metrics, and they are inherently difficult to track and quantify; we must find a place and space for documenting these encounters. Not only do they underpin recruitment, but they are crucial to effective mentorship and training. What separates academia from industry is our time investment in learning and education. So, should every hour spent educating students, whether in the classroom or in a more informal capacity, not be counted? Perhaps it is time to measure academic success based on outcome rather than on output.

Creating space for more qualitative metrics that demonstrate skillful leadership is essential to preserving EDI within academia and other professions. We must question how academia contributes to the successes in student training, a question which is becoming increasingly important for universities and institutions to justify as well for future budgets. If we want to succeed in preserving and fostering EDI, then we must learn to view success through different and more diverse lenses.

Acknowledgments: The authors would like to extend our thanks to Jim Buttle, Heath McCoy, Kinga Olszewska, and Michael Platt at for their editorial contributions to this article.

References

Clark, M. P., and Hanson, R. B. 2017. The citation impact of hydrology journals, *Water Resour. Res.*, 53, 4533–4541, doi:10.1002/2017WR021125.

Gewin, V. 2019. Women can benefit from female-led networks. *Nature: Career News*. *Nature* **566**, 145. doi: 10.1038/d41586-018-07878-w

Flaherty, C. 2020. No Room of One's Own. *Inside Higher Education*.
<https://www.insidehighered.com/news/2020/04/21/early-journal-submission-data-suggest-covid-19-tanking-womens-research-productivity> [Accessed 27 April 2020]

Minello, A. 2020. The pandemic and the female academic. *Nature: World View*.
<https://www.nature.com/articles/d41586-020-01135-9> [Accessed 27 April 2020].

Murabit, A. 2020. You can't be what you can't see. *United Nations Chronicle*.
<https://www.un.org/en/un-chronicle/you-can%E2%80%99t-be-what-you-can%E2%80%99t-see> [Accessed 5 May 2020].

Nielsen, M.W., Alegria, S., Börjeson, L., Etzkowitz, H., Falk-Krzesinski, H.J., Joshi, A., Leahey, E., Smith-Doerr, L., Woolley, AW, Schiebinger, L. 2017. Opinion: Gender diversity leads to better science. *PNAS* 114 (8): 1740-1742. doi.org/10.1073/pnas.1700616114

Ogden, L.E. 2012. Leaky pipelines for Canadian women in research. *Nature Newsblog*.
<http://blogs.nature.com/news/2012/11/leaky-pipelines-for-canadian-women-in-research.html> [Accessed 5 May 2020].