

Mothers rebuild: Solutions to overcome COVID-19 challenges in academia

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Amy Marcarelli, associate professor of biology at Michigan Tech, sees diversity, equity, and inclusion through her lens as an ecosystem ecologist. She is one of 13 co-authors on a paper that outlined how to support mothers in academic careers during and after the pandemic. Credit: Sarah Atkinson/Michigan Tech

Over the summer and fall, paper after paper revealed that mothers are

one of the demographics hardest hit by the pandemic. From layoffs and leaving careers to do caretaking, to submission rate decreases and additional service projects, the data were clear, but the follow up less so. Many of the problems are not new and will remain after the pandemic. But a new paper, published this week in *PLOS Biology*, outlines methods to help solve them.

"In the spirit of the well-worn adage 'never let a good crisis go to waste,' we propose using these unprecedented times as a springboard for necessary, substantive and lasting change," write the 13 co-authors, led by researchers from Boston University and hailing from seven institutions, including Michigan Technological University, University of Connecticut, and University of Houston—Clear Lake. The team's goal: Solutions for retaining mothers in science during and after COVID-19, especially parents who are Black, Indigenous or people of color.

"The news was reporting these studies as if they were a surprise," said Robinson Fulweiler from Boston University, one of the lead authors alongside Sarah Davies, also of Boston University. Fulweiler adds, "There's already been a lot of data gathered about this issue. But there have been no solutions. Our level of frustration peaked. We decided we need to make a plan to fix things."

The paper offers specific solutions to different groups that can enact change:

- **Mentors:** Know university parental leave policies, support and model a "healthy work-life teeter-totter" and keep mentees with child care duties engaged and involved in lab, department and multi-institution activities.
- **University administrators:** Look up 500 Women Scientists, rethink tenure procedures and timelines, listen, provide course releases and avoid making "gender- or race-neutral policies

because the effects of the pandemic are not neutral across race or gender."

- **Scientific societies:** Consider how to keep parts of virtual conferences with lower costs, expand governing board diversity, expand networking opportunities and continue supporting early-career members, especially researchers who are Black, Indigenous, and people of color.
- **Publishers:** Expand editorial boards and, during the pandemic, incentivize submissions through fee waivers for mothers with child care duties and keep extending deadlines for review and revisions.
- **Funding agencies:** Streamline paperwork, ask for COVID disruption statements and look into supplemental and short-term bridge awards.

Mothers in the Pandemic

Amy Marcarelli, associate professor of biological sciences at Michigan Tech, helped lead the paper's section addressing professional societies. When the pandemic hit—and Marcarelli had less than five days to shift all her classes and research to remote formats—she was wrapping up a two-year strategic planning process with the Society for Freshwater Science that included a deep dive into effective and fair practices for diversity, equity and inclusion. She sees the work through her lens as an ecosystem ecologist.

"Some of my most recent work has been around cascading and indirect effects and how effects viewed on short time scales may have very different outcomes at long time scales," Marcarelli said. "What I've learned from that research is that you can't abstract a single characteristic of an organism and expect that to explain its ecological role. And [in academia] we try so often to treat ourselves as researchers—and not as mothers and partners and daughters and

leaders—and that's to the detriment of all of us. It's to the detriment of us as individuals but it's also to the detriment of our academic system because if we don't treat people as whole people then we fail them."

Marcarelli emphasizes that she feels like she has been lucky during the pandemic; she secured tenure several years ago, her kid is older, Michigan K-12 schools reopened in September, and her mom, who was furloughed, helped with spring schooling and summer child care. While the extra service projects and retooling research, instruction and life were not easy, Marcarelli recognizes that not everyone's situation has been like hers.

The most pressing change Marcarelli sees is to rethink tenure extensions: "We have to figure out how to make motherhood and tenure compatible, not just extend tenure—it's not a solution." She adds that the greatest challenge will be money. "These are inequities, but they are not inequities that everybody sees. And during a time of what is going to be an extended budget crisis in a lot of higher ed, that's going to be the hardest part. But it's the part that has to be solved because good intentions only get us so far."

Marcarelli says the conversation that sparked the *PLOS Biology* article started on Twitter, a lively back-and-forth on how to shift the dialogue to a solutions mindset.

"At the same time, several of us were working on big service activities around how to improve conditions for all different axes of diversity in our departments and universities, in our societies," she said. "We had invested a lot of thinking and real work that was going into small reports and small-scale documents that weren't going to be read widely."

The team's service work, lived experiences and hope informed the *PLOS Biology* paper as much as their research and collaboration.

"Part of the motivation for writing this article is that in some ways the pandemic provides a window into why this is important, why we need to do the hard work of dismantling these systems," Marcarelli said. "Quite frankly, it's an opportunity."

More information: Robinson W. Fulweiler et al, Rebuild the Academy: Supporting academic mothers during COVID-19 and beyond, *PLOS Biology* (2021). [DOI: 10.1371/journal.pbio.3001100](https://doi.org/10.1371/journal.pbio.3001100)

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