

Fixing Academia's Childcare Problem

Academia in the United States has a childcare problem. Getting established in an academic career as an independent investigator takes a lot of time, beginning with attending graduate school. In 2021 the average age of PhD recipients in science and engineering fields was 31. Most academics pursue further training through postdoctoral studies before applying to faculty or research positions. Even then, it takes time to establish a productive research group and attract grant funding. For those in biomedical fields, for example, the mean age at which PhD scientists received their first National Institutes of Health Research Project, or R01, grant was 43 in 2020, and only 10% of such awardees are 35 years old or younger. This lengthy training interval coincides with the time most people consider having children and starting a family. But because of a lack of support for new parents during this period of intense training, many of them are leaving academia. In 2022 there were reports of a shortage of postdoctoral candidates, with PhD graduates choosing to directly enter the private sector, which offers better compensation and benefits. This will severely affect the US science and technology workforce and the country's competitiveness globally.

This lengthy training period to become an independent investigator is characterized by long hours, low salaries, and a lack of job security. Graduate students and postdocs are supported by stipends or grant-provided salaries that are often well below standard costs of living—in 2020 more than a quarter of graduate students in the United States reported food or housing insecurity. Resources for caregivers are scarce in the US system as a whole: the United States spends only half of what other wealthy countries spend on early childhood education. The result, as shown in a 2019 study, is that nearly a quarter of new fathers and almost half of new mothers in the US science, technology,

engineering, and mathematics (STEM) workforce were reported to leave full-time employment after the birth of their first child. In academia, women with children are less productive and more dissatisfied with their jobs than their male peers due to a lack of family-friendly policies, including accessible childcare.

Lack of childcare support options for early-career academic researchers is holding back America's economy, competitiveness, and equitable improvements to standards of living by pushing skilled talent out of the STEM workforce. Leaders in the scientific community have made the case that the United States must bolster its STEM workforce by being more inclusive of women, underrepresented groups, socioeconomically disadvantaged people, and others. Supporting parents should be seen as a key aspect of this inclusiveness. Research shows that supporting new parents aids in employee retention across sectors and industries. To truly support a robust, inclusive academic STEM workforce, the federal government and other funders, as well as institutions themselves, must do more to support graduate students, postdocs, and early-career faculty who are also parents. Taking steps to provide or support affordable and accessible childcare options is critical.

Providing childcare bolsters workforce productivity and retention

To be viable for early-career researchers, childcare options must be both accessible and affordable, and there are challenges with both. While access to childcare may depend in part on geographic location, data from the National Center for Education Statistics show that the share of four-year public institutions with childcare centers declined from 55% in 2005 to 49% in 2015; the share is around the same in 2021. According to a national study by the Center

for American Progress, the average yearly cost of care for an infant was about \$16,000 in 2021. Many graduate students have yearly stipends of less than \$30,000.

When coupled with the intense work culture of academia that rewards productivity at the expense of a work-life balance, these data help explain the longer-term trend that female faculty tend to have fewer children, are more likely to be unmarried, and have higher divorce rates than their male peers. The lack of accessible childcare is a crisis that has long been ignored. It took the shock of the public health restrictions brought on by the COVID-19 pandemic, which suddenly closed schools and daycare centers, to reveal the fragility of support for childcare systems in US academia. The pandemic directly impacted productivity: the number of scientific papers published decreased during the public health measures—especially for mothers (even if both parents were home), and even more so if children were five years old or younger.

Other sectors have recognized these ongoing problems and taken steps to alleviate them, with promising results.

Fixing the childcare problem on campus

On many campuses, an on-site childcare facility is economically unfeasible due to high operational costs and strict regulations. The childcare industry includes caps on the ratio of care providers to children and requires extensive training and certification for providers. According to the National Coalition for Campus Children's Centers, most funding for campus centers comes from parent fees, along with a mix of contributions from institutional funds, donations, and student and faculty associations.

The use of internal institutional funds for childcare depends heavily on the resources of the institution and the strength of shared governance to lobby for allocations, both of which vary greatly. Even top private research universities have dropped the ball: at Columbia University, for example, a 2018 survey found that a large portion of graduate student parents reported dissatisfaction with support for families, with nearly half reporting having missed classes or exams and 90%

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Case studies of private companies suggest that providing subsidized on-site childcare as a benefit to employees positively affects employee attitudes and retention while also improving productivity and mental health and reducing absences. And in the public sector, Congress spent \$12 million in taxpayer funds to create a subsidized childcare facility at Capitol Hill. Members of Congress recognized that on-site childcare is essential to retaining talented staffers. Beyond that, the Federal Election Commission allowed candidates running for federal office to use campaign funds to pay for childcare.

Providing access to affordable, on-site childcare could lead to similar gains in academia, including improving outcomes for children enrolled in such programs and increasing women's participation in the STEM workforce. Supporting on-campus childcare centers could improve retention of graduate students, postdocs, and early-career faculty. In England, institutions with more generous parental leave policies were able to retain more female professors. But translating this support into academia and making it the norm will require action by the federal government and other research funders, as well as by academic institutions themselves.

missing meetings and professional networking events for childcare-related needs. Some universities utilize their large endowments to provide childcare scholarships to tenure-track faculty, but since not all institutions can do this, a more equitable solution is needed.

One step the federal government should take is to build on the existing Child Care Access Means Parents in School (CCAMPIS) program, which provides funding to support institutions and their students who have significant enrollments of low-income undergraduate students. In 2016–17, according to the Government Accountability Office, this program helped around 3,300 student-parents pay childcare costs for about 4,000 children. The majority of eligible institutions also used the funds to provide both childcare and support services for parents, such as parenting classes and access to food banks. However, the program remains underfunded as evidenced by the long waiting lists: about 51% of all CCAMPIS-eligible children were on waiting lists for facilities, and of these, 65% were infants and toddlers. This program should be adequately funded and, moreover, should be extended so that enrolled graduate students are eligible.

Beyond its role in making higher education more affordable generally, the federal government is the largest funder of academic research at US universities and could build additional ways to subsidize childcare into grants, either through the indirect or direct portions of grant funding. For example, institutions could receive higher indirect cost reimbursement rates in exchange for providing evidence they have used funds to subsidize off-campus childcare or an on-campus childcare facility. While including human infrastructure as an allowable cost would require changes to the Office of Management and Budget's rules for federal awards, it would have benefits for both the government and institutions. Such a change could help federal agencies achieve priorities such as improving educational outcomes and building and diversifying the STEM workforce while making it easier for institutions to improve engagement and retention. However, a focus on indirect cost reimbursement would be less helpful for institutions that do not apply for many federal research grants.

shared costs between institutions and federal, state, and local governments. But such grants would support human rather than research infrastructure.

Given how US academic institutions vary in size, location, resources, and culture, there is no one-size-fits-all solution, which makes it essential that agencies provide as much flexibility as possible. But to sort through these options, it would be helpful for agencies to gather public input from the research community, including early-career researchers as well as established faculty and administrators. These agencies can then advocate on behalf of the research community to the federal government and Congress to create funding mechanisms to support new parents.

Institutions also have an enhanced role to play here. They can begin by evaluating their own suite of internal policies, such as parental leave policies and those surrounding allowable costs on grants, to be sure they are as friendly to parents as possible. Institutional associations such as the Association of American Universities, Association of Public and Land-grant Universities, and National Association of

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Agencies could also consider allowing adequate childcare expenses to be built into the direct costs of grant proposals, just as salaries, other benefits, and tuition waivers are. The National Science Foundation and National Institutes of Health have already taken some steps in this direction, but the allowed dollar amounts fall far short of childcare fees. Beyond raising the dollar amounts to account for actual costs, agencies should do more to make principal investigators aware of these options and to make it clear that proposals will not be penalized for taking advantage of them. One possible downside of the direct cost approach is that tying childcare costs to grant funding may leave students and postdocs whose funding lapses, or who receive funding from other sources—e.g., from their institution in exchange for teaching responsibilities—without the subsidy.

A third option is to create a special class of institutional federal grants focused on supporting the childcare needs of graduate students, postdocs, and faculty. To be a long-term solution, such grants must be large enough to potentially build new childcare facilities. These types of grants already exist for research facilities, usually utilizing

Independent Colleges and Universities can provide forums for developing and sharing best practices. Most federally funded graduate students and postdocs receive their funding from a small number of federal agencies. Dialogue among these agencies and institutions could help to break roadblocks and chart a course forward.

If the United States is serious about building a more inclusive STEM workforce and embracing the talents and expertise of the nation's diverse population, solving academia's childcare problem is an essential step. Beyond hindering achievement of these societal goals, lack of childcare is also affecting the country's competitive edge in STEM. During World War II, when faced with threats overseas, the federal government funded universal childcare to enable women to make up the shortage in labor while many men were fighting. Today society faces a different set of global challenges, and failing to address the lack of childcare in academia squanders potential and puts the United States at a disadvantage.

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