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# How to Level the Playing Field for Women in Science

***The 'baby penalty' in academe could be eased with four key reforms***

By Mary Ann Mason

Brian Taylor

The good news: Many more women than ever before are completing Ph.D.'s in the sciences. Back in 2000, when I was appointed the first female dean of the graduate division at the University of California at Berkeley, I was delighted to learn that about half of the incoming doctoral students in the biological sciences—and more than 30 percent in heavily male fields like chemistry and engineering—were women. However, I also noticed that in most of the science departments where young women were eagerly enrolling, very few of the faculty members were female.

Today we know a lot more about what happens to women in the sciences after they receive their Ph.D.'s. My Berkeley research team has spent more than a decade studying why so many women begin the climb but do not make it to the top as tenured professors, deans, or presidents. We followed thousands of graduate students through their careers and extensively surveyed and interviewed faculty members, postdocs, and administrators, both at universities and at federal agencies.

Our most important finding is that family formation damages the academic careers of women but not of men. Having children is a career advantage for men; for women, it is a career killer. And women who do advance through the faculty ranks do so at a high personal price. They are far less likely to be married with children. We see more women than we used to in visible positions, like presidents of Ivy League colleges, but we also see many more women than men who are married with children working in the adjunct-faculty ranks, the "second tier," and one of the fastest-growing sectors of academe.

Our study also identified interventions that could help change that disheartening pattern. Some of these policies are now in place at some universities and are being promoted by some federal agencies. We are at a critical point, where the story could change dramatically: The "baby penalty" could be wiped out, or at least greatly ameliorated, by these four reforms: better child care (in many forms), effective dual-career policies, childbirth accommodations, and compliance with Title IX's prohibition on pregnancy discrimination.

***1. Better (and more) child-care options.*** The No. 1 complaint of mothers at most colleges and universities is inadequate, overpriced child care. It is a major reason why mothers drop out of the academic pipeline. Any reform, including private fund raising for better day-care facilities, would be welcome.

But some immediate actions can be taken at relatively low cost. At Berkeley we offer emergency backup child care for all faculty members and recently became one of the first universities to extend a highly subsidized version to graduate students and undergraduates. This enormously popular, well-vetted service can be used when graduate students need to participate in conferences, meet a deadline, or attend to any other professional obligation that mothers often must forgo.

As one doctoral student said, "Half of [my monthly income] goes toward two days of child care per week for my baby so that I can attend lectures and teach sections. That's difficult enough. Paying for extra care is out of the question. Because the university has started to subsidize backup care, I am able to have someone watch my baby when I have big deadlines looming. I can better meet my deadlines with a little extra care and don't have to let the quality of my work slide."

The National Science Foundation is also on board with dependent-care programs. It has announced that NSF awards may be used to pay the salaries of temporary employees hired to replace people who take a leave of absence to meet dependent-care responsibilities. In certain circumstances, the foundation will also allow grant money to be used to pay for regular dependent-care expenses.

***2. Effective dual-career policies.*** Young scholars almost always have to relocate to find tenure-track employment, so a dual-career couple must either live apart or hope to find two jobs in one location. Structural inequities also affect the two-body problem. Female scientists are likely to be married to male scientists, while male scientists, and there are far more of them, are likelier to have a spouse who works only part time.

One of the two bodies must defer, and that body is likely to be hers (we assume this happens with all couples, even if both members are female or male, but the federal data set only deals with married couples). According to the National Science Foundation's Survey of Earned Doctorates, 65 percent of married female Ph.D.'s acknowledged that spousal-career concerns affected their search for a permanent job, compared with 38 percent of married male Ph.D.'s.

Department chairs often say that the two-body problem is one of the thorniest they face in recruiting. Women often say it is the reason they dropped out of the science pipeline. "My husband has a job he loves," a Ph.D. told us in our research, "but it will require that we don't move. This limits my postdoc and career options so significantly. I think the chances of staying in the same city throughout the career and finding a tenure-track position are almost nonexistent. However, I am not sure how much I care anymore."

Provosts make many deals, often behind closed doors, and there is no standard playbook. Some offer split positions to a dual- career couple, but more are likely to play the "thirds" game, in which the university and the hiring department each offer a third of the salary to a second department to hire a "trailing" spouse.

There are no easy answers to the two-body problem and the havoc it wreaks on women's careers. At a minimum, a senior administrator should take charge of finding suitable employment for a trailing spouse and make sure the university's policies are clearly and publicly stated.

***3. Childbirth accommodations.*** In the past decade, most colleges and universities have moved toward flexible childbirth policies for faculty members (and many of those policies cover adoption as well). Stopping the tenure clock for mothers for a year is now fairly standard, although not always for fathers. Paid maternity leave is also the norm for mothers but not for fathers. In our study of member institutions in the Association of American Universities, 58 percent reported that they offered at least six weeks of paid childbirth leave for mothers, but only 16 percent provided at least one paid week for new fathers.

Many institutions offer some form of relief from teaching for childbirth, usually a semester. A very few, including the University of California, offer a part-time pre-tenure track for working parents. Workplace flexibility for both new mothers and fathers is critical. That could include paid parental leave, relief from teaching (in the UC system we offer a semester of teaching relief to new fathers and two semesters to mothers), stopping the tenure clock, and part-time work arrangements (with a right to return to full time).

***4. Compliance with Title IX.*** The most vulnerable years of a female scientist's career are the earliest: the graduate-student and postdoc years. The greatest leak in the science pipeline occurs before women obtain their first tenure-track job, and the major reason is childbirth. Specifically, according to the NSF survey, married mothers are 35 percent less likely than married fathers to obtain a tenure-track job. Single women without children, on the other hand, are almost as likely as men to get that job.

Graduate students and postdocs are the most likely to drop out, yet they receive little support and few benefits. Only a few institutions offer them paid leave for childbirth, or any other benefits. And only those postdocs who are officially considered employees receive benefits at all.

Universities are required to comply with Title IX for all graduate students and postdocs who receive federal funds. But few students know that they are protected against pregnancy discrimination under Title IX, and many universities seem unaware as well. When I give talks to various groups throughout academe, and ask who in the audience knows that Title IX includes pregnancy discrimination, only a few hands go up.

Properly enforced, the Title IX provisions fill the shortfall in campus family-friendly policies. Colleges and universities are in violation of Title IX if they fail to allow pregnant mothers a reasonable period of leave for childbirth or fail to guarantee that graduate students can return to their former positions as teaching assistants or postdoctoral fellows after maternity leave. Recent federal efforts to enforce compliance suggest that this Title IX protection will soon be better known.

Family-friendly policies make a difference. At the University of California, we have seen tremendous shifts since we developed the UC Family Friendly Edge program a few years ago. More than twice as many of our female assistant professors have children now as in 2003. Faculty members are making use of accommodations for childbirth at an unprecedented rate, and graduate students are routinely stopping the clock and taking paid maternity leave. At Berkeley we now get good ratings for being family friendly. Our policies are used as recruitment tools.

Many other institutions, too, have important success stories to tell. Academe, long the epitome of workplace inflexibility, is gradually becoming a benchmark for progress.

However, the federal agencies that support science and universities still have a great deal of work to do. In collaboration they could guarantee a baseline of family-friendly policies across the academic world that would encourage women to fulfill their dreams in science. We cannot afford to lose a major investment in our best and brightest minds.

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*Mary Ann Mason is a professor in the Graduate Division and co-director of the Berkeley School of Law's Chief Justice Earl Warren Institute on Law and Social Policy, at the University of California at Berkeley. She is the author, along with Nicholas H. Wolfinger and Marc Goulden, of the recently published Do Babies Matter? Gender and Family in the Ivory Tower (Rutgers University Press). The book's website is Dobabiesmatter.com. See also Toolsforchangeinstem.org for video presentations of their findings.*