

Student questions: Richard Pitt colloquium on “Family Matters: The Impact of Family On Postdoctoral Attrition From The Academy”

2/10/21

It was mentioned that there were questions asking couples about family getting in the way of work and work getting in the way of family, should the people of the couples be asked individually, is it more often that family is a larger factor for women?

We asked both men and women the questions about work-family imbalance such that men were asked about it in their families and women were asked about it in theirs. That means men were asked "do YOUR family responsibilities affect YOUR work" in the same way women were. Men didn't answer these questions any differently than the women who did, suggesting that even if what "family responsibilities" look like may differ, presumably, by gender, the work-family conflicts don't. This is the case for postdocs in both same-sex and opposite-sex relationships. Even adding children to the mix doesn't change this. Among our coupled respondents with kids, there don't appear to be differences between men and women in that 58% who say their family conflicts with their work responsibilities.

Are there inherent differences between the way men prioritize career vs. family and the way women prioritize career vs. family?

We asked the postdocs to complete the following sentence with options from a list of choices: "I desire a career that aligns with the personal value I place on ____ and ____ and ____." One of the eighteen values they could choose was "being physically and emotionally available to my family" and another was "financial gain/security." We predicted that single/coupled and male/female postdocs would differ in the percentages that chose those two values. There were differences between coupled and single postdocs: about 40% of coupled postdocs said caring for my family (10% single) and 30% said financial security (20% single). Men and women coupled postdocs did not differ: caring for their family was the top choice (of the 18 values) for both men and women at the same level (~40%). We didn't ask the question like you posed it (e.g., do you care more about your career than your family?), but we were—as gender scholars—kind of gratified to not see a gender difference in the question we did ask.

Since you have started this research and have put it into words, has there been any kind of update or progress in this area?

At this point, we have only done talks like this one, so we haven't *quite* put our findings into words yet. We are in the middle of producing a report that will be distributed to Postdoctoral Affairs Offices (OPA) at places like ASU and hope that what we say will impact the postdoctoral experience. At my prior institution, my research team had a feedback loop into our own OPA and did see progress in how postdocs processed the impact of their families on their decision making. For example, we began to have actual conversations about what in the postdoctoral experience, specifically, might cause work-family conflict (aka "role conflict") and if there are ways to reduce it from outside of the postdoc-PI or postdoc-partner relationship. As you might guess, it is really difficult to make institution-level changes (from the OPA) that can affect those more narrow expectations.

Why is gender diversity in S.T.E.M. academia desirable?

There are three main reasons as far as my team is concerned: diversity impacts innovation, implicit sexism, and imitation. Regarding innovation, while it is not true that EVERY woman who does science asks different questions, includes different variables, or considers different answers than men, on average we find that having more women scientists enables us to see things men scientists simply ignore. Commonly mentioned examples include engineers' modelling seat belts on men's bodies without ever considering women/children and biomedicine's longstanding problems due to excluding female subjects from studies. Scientists' propensities for "me-search" (read: research based on our experience, values, interests) leads to gendering of scientific innovation, a problem if we only have one gender doing all of the me-search science. Regarding implicit sexism, we organize our understanding of the world mainly by observation and interaction. We think that men are better in science because many of the images we have of scientists—especially non biologists—are men. Result? When we encounter a woman scientist, we judge her as less capable without even thinking about it. We're less likely to call on her in the lab, we're less likely to agree with what she says, we're less likely to hire her. More (and consistent) exposure to women in STEM undoes this. Regarding imitation, this same problem exists FOR THE WOMEN. They encounter the same messages, often in STEM classrooms before they encounter them in STEM workplaces. Even though women graduating from high school are as capable of doing (and majoring in) non-biological sciences as their male peers, they underestimate their abilities (turns out men overestimate themselves). Result? Women are less likely to speak up in the lab, less likely to argue when they know they're right, and are less likely to pursue further training and careers in STEM. With more women STEM "role models," more women will model their behavior (i.e., imitate) after them. Remember when *The Big Bang Theory* was just Leonard, Sheldon, Howard, Raj, and Penny (the only woman . . . and a waitress)? Imagine the benefits of both men and women encountering Amy (neurobiologist), Bernadette (microbiologist), and especially Leslie (experimental physicist) on later episodes of the show. I'm still celebrating that B'Elanna Torres (*USS Voyager*) was the rare, but still present, woman chief engineer in the Star Trek Universe. Oooof, I think I need to get to the next question

How/why do you think that pursuing a postdoc became the "cultural norm", when it requires so much more time and money than only pursuing a master's?

The too-long-didn't-read answer? Because pursuing a PhD and then postdoc isn't actually more expensive for most non-international STEM PhD students than getting a master's degree. The longer answers? The kind of people who "choose" to pursue a STEM PhD (and then postdoc) are, on average, not the same as people who opt out at the BS or MS levels. Many of them are similar to the undergrads I study who stay an extra year in undergrad double-majoring when they have enough AP credit to leave after their junior year; time and money aren't the concern. There's no rush—often because of socioeconomic status—to finish up your education and get out there in the world to make money. There is another issue though. It's probably useful for you STEM graduate students and postdocs to consider how truly inexpensive—relative to professions like medicine (MD), law (JD), and business (MBA)—pursuing both a PhD and a postdoc "feels" while you're doing it. While no one is making it rich in grad school, it is amazing how "comfortable" life can be for the average STEM PhD student (average 23-29 years old when they start) given the funding structure for PhD training. Most non-international STEM PhD students receive a stipend and tuition fellowship/scholarship for 4-5 years of training AND their

undergrad student loans are mostly frozen during that time; the “money” investment is mostly someone else’s (their graduate institution and the banks who lose accrued interest). Therefore, sticking around for the PhD and then pursuing a postdoc (NIH has a minimum \$53k postdoc salary) rather than “dropping out” at the MS level intentionally may feel like an easy decision. While “median salaries” for people with STEM master’s degrees are high, those aren’t “median STARTING salaries”. In engineering, for example, a brand-new MS will only get you about \$65k (especially with little experience) and you’d have to work all week for forty hours on assigned project(s) with little autonomy even if you’re leading a team. Why wouldn’t someone stay for more training—paid by someone else—if you believed “more years in school leads to more money on the back end”? Problem? Employers (academic and non-academic) recognize that, unlike physicians and lawyers, you’re not paying back thousands in loans (MD \$300k, JD \$145k) and therefore NEED a wage premium to account for your financial investment in human capital. Therefore, no one feels any obligation to help you recoup said investment; it wasn’t yours.

Thanks for your questions!