

## Chapter 6: Mums, Academia Needs You!

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I was a curious kid and loved animals and nature, so studying biology was an easy choice for me. While taking courses at university, I soon discovered that my true passion was evolutionary biology. Evolutionary biology helped me understand the “hows” and “whys” of the enormous biodiversity of our planet, especially its origins. I devoted my entire career to studying how living organisms adapt to their environment and to changes in it. To study this question, I use experiments in the laboratory, sequencing technologies, computational approaches, and diverse species, ranging from microbes to mammals. For example, in a recent publication, we investigated whether species could adapt to temperatures above their upper thermal limit. To do so, we grew bacteria in the laboratory at higher and higher temperatures and observed how they adapted. Our study revealed that, although our model organism adapted quickly to high temperatures, it was unable to adapt to temperatures one degree above the upper thermal limit.

For most of my career, I was very naive and did not realize that being a woman in science is tough. But that changed when I became a mother. In my case, motherhood coincided with starting my own very small group as a Swiss National Science Foundation (SNSF) Ambizione fellow. I had an easy pregnancy; I was working at full capacity until the day before my daughter was born. I had a relatively easy recovery and, soon after the delivery, my brain was able to start thinking again about work. I was lucky to have a very supportive and empathetic research assistant. During my maternity leave, she would come to my home to plan and discuss experiments, and she would do it once my partner was back

from work so he could take care of the baby while we spoke and planned experiments. Thanks to the support of my partner, I also wrote the PRIMA grant during my maternity leave. He would come from work and fully devote himself to our daughter so that I could have time to write. Days when our daughter only wanted my arms, my partner would write down what I dictated while I held our baby. Once my maternity leave and our accumulated holidays ran out, our daughter started attending the nursery. We were lucky and got a place at the university nursery, which was very flexible and accommodating and only five minutes away from my office, so I could go and breastfeed my daughter when she was hungry. The nursery was also a way to meet other academic parents with similar aspirations and challenges, with whom we could easily talk and share experiences and advice. So, during the first few months of motherhood, I quickly realized the crucial importance of having a good support network, including life partner, team members, other parents with similar life experiences, and good childcare service.

But, despite having a good support network, motherhood brought with it many changes in the way I used to do science. It meant having fewer hours in the day to dedicate to science, working at times when my productivity was not at its highest (I am an evening person), and attending conferences or after-work networking events required more organization than previously. Still, I felt that I could manage motherhood and an academic career relatively well. But that changed with the birth of my second daughter, which coincided with the first months of my PRIMA grant and the start of the COVID-19 pandemic. My second daughter slept terribly until she was almost two years old, and it took me a long time to recover mentally from the second pregnancy. I was exhausted and I had difficulties focusing and thinking clearly. It was very hard for me to accept that I did not have enough time and energy to write grants and papers, work on projects, and lead my team as I had planned. I had to learn the hard way to accept my limitations and set priorities. This meant making difficult decisions, such as missing grant deadlines to focus on the PRIMA project, my team, and my family. I held on as best I could and hoped that at some point my brain would return to normal. Fortunately,

once my second daughter started sleeping better, I began to recover mentally, finally free of my post-pregnancy brain fog and back on track.

Before becoming a mother, I was well aware that science is very demanding and requires a lot of energy, but now I know that motherhood is also extremely demanding. Having two children under the age of five while building my group, developing a novel research line, and being in the middle of the COVID-19 pandemic has been extremely difficult, and I have had to sacrifice having time for myself. Through my journey as an academic mother, I have had to learn to live with the constant feeling that I cannot devote the necessary time to either science or my daughters and that I am neither a good scientist nor a good mother. But now that my daughters are a bit older, this feeling is starting to fade. Being a researcher mother teaches a very important lesson to my daughters: women can follow their passion and have a career in addition to having children. Moreover, being a mother gives me very useful qualities for science, such as patience, calmness, empathy, and time-management skills.

Unfortunately, motherhood often coincides with key moments in the academic career, such as the last postdoc years, applying for faculty positions, or starting a group. And motherhood can add additional difficulties to an already complicated point in the career of a researcher, such as problems during pregnancy, postpartum depression, lack of sleep, hormonal problems, or miscarriages. In recent years, big steps have been made to make the academic career less hostile for mothers. For example, European Research Council (ERC) grants automatically extend the eligibility window of researcher mothers by one year and a half for each child, and the DORA declaration is helping to take career breaks into account when one is evaluated for competitive calls. I myself noticed the positive change: a grant reviewer wrote that my maternity career breaks had to be taken into account to explain the decline in my publication record and that I should not be penalized. But I was also recently asked why my publications have decreased in number over the last few years. The sign of the change in mentality is that I did not have to respond to that comment; a male researcher responded for me to point out that I had two children in two years in the middle of a worldwide pandemic.

Despite these improvements, we still need to implement further measures that take into account the difficulties of being a mother in an academic career and that make science more inclusive and welcoming for mothers. Many women leave academia after their PhD or postdoc. We need more mothers in leadership positions in academia to show that it is possible to be an academic mother. Moreover, the more women there are in academia, the easier it will be to implement policies that support the needs of academic mothers. But I think there should be measures not only for mothers that want to pursue an academic career, but also for researchers with families or with care duties in general. Some measures are easy to implement, such as allowing flexible working hours and remote working, or scheduling by default meetings, seminars, and networking events during regular working hours, so that family responsibilities do not limit attendance and opportunities to network. Another relatively easy measure is to ensure that grant deadlines do not overlap with school holidays, which is a serious disadvantage for parents with young children. A more difficult measure to implement is financial support for families with children or care obligations. An example of such a measure is the Flexibility grant awarded by the SNSF, which aims to better reconcile work and family time by partially covering the cost of childcare and/or the costs of hiring a support person to reduce the working hours of the recipient. While Flexibility grants are a remarkable measure, doing science involves mobility, and most researchers live far away from their families, which means that their local support network is usually reduced. I envision a financial scheme that would function as an annual stipend per researcher to cover, for example, train or plane tickets for grandparents to care for children while at a conference or a job interview, a babysitter to care for sick children, or the costs of hiring a support person (for science-related or household issues); it could also partially cover regular childcare costs. Finally, extensions beyond the duration of the maternity leave should be granted to women researchers who have become mothers while being awardees of a grant covering their salary. As I have already mentioned, the ERC acknowledges the career delays that having children causes for female researchers, but it would be very useful to extend the length of the grant if a child is born

during the grant itself. The introduction of such measures worldwide would be a game changer; it would promote inclusiveness in science, which would lead to a more diverse scientific environment. Merit and scientific brilliance do not depend on gender or nationality; a more diverse workplace boosts productivity and creativity by increasing the range of different perspectives, skills, experiences, and approaches to problem-solving. Diversity is therefore key to nurturing excellence, and science would benefit enormously from a more diverse environment. Let's embrace diversity and let science be driven by the curiosity and passion of all scientists, regardless of their background!

