

Balancing family with a successful career in Neuroscience

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Factors contributing to the career-family imbalance

After years of hard work as a student and postdoc, stressful negotiations and restless nights of agony regarding your academic future, you managed to secure a PI position and establish your own lab. And just when you thought you could relax a bit and enjoy some time with your family, or start a family, you find yourself facing a massive amount of responsibilities added to your research, that demand most of your time and energy. The challenge to balance a successful career with a happy family life is not a trivial one.

There is no doubt that the work load demands for young PIs are much higher than they used to be one generation ago. Young PIs are nowadays faced with increased teaching, administrative, lab organization, fundraising and publishing duties, not to mention public relations or outreach actions and, perhaps the most challenging task of all, that of managing people with very tight agendas of their own. For example, a common administrative issue that may not even enter the thoughts of a wanna-be PI is the amount of time required to deal with animal welfare. With the new European Legislation [1], Project License holders are often subjected to scrutiny and forced to deal with loads of administrative issues pertaining to animal welfare. Teaching, while emotionally and

scholarly rewarding, is another time consuming obligation. As the number of University students has increased massively over the last decade [2, 3], faculty staff and especially young PIs are often asked to assume very high teaching loads, which, combined with student consulting and examination duties, can occupy a very large portion of a PIs time. As a consequence, time devoted to research is necessarily decreased [4], with the exception perhaps of those employed in research Institutions, with little or voluntary teaching obligations.

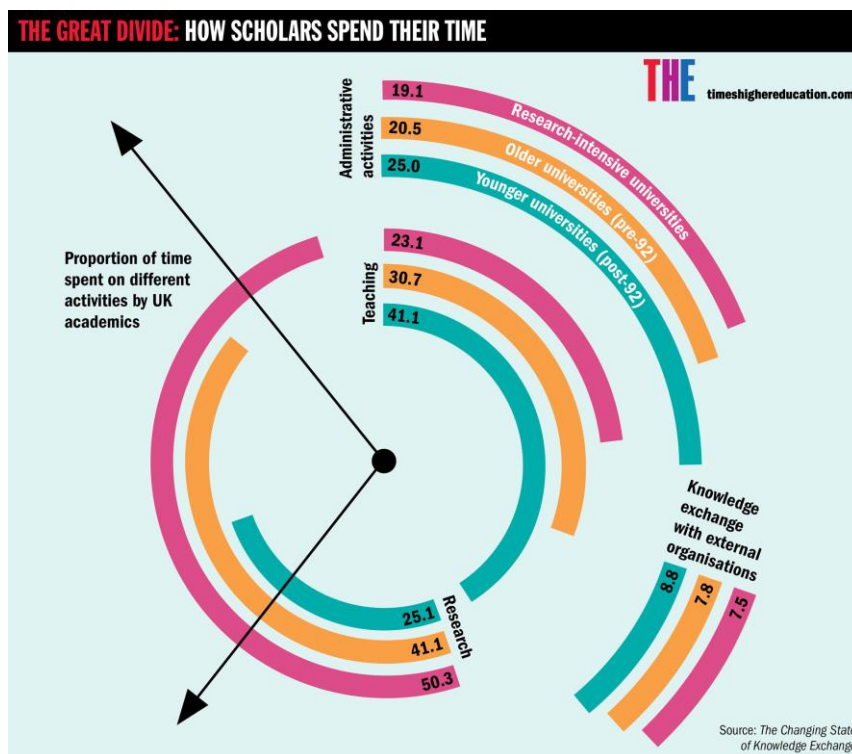


Figure 1: The figure shows how academics (not just young PIs) used their time at different types of universities in the U.K. during the period 2012 to 2015. In research-intensive universities (defined as those in the top decile for total research funding received), academics spend more than half their time on research, double the proportion spent at younger universities. Scholars at younger universities prioritize teaching, but also have a larger administrative burden than elsewhere (a quarter of academic time versus a fifth at older and research-intensive universities). At all types of institutions, knowledge exchange plays second fiddle to other tasks. The data come from a survey of more than 18,000 academics by the National Centre for Universities and Business [5].

At the other end, the impressive technological advances of the last few decades have enabled new knowledge to be rapidly disseminated online (even on mobile devices [6]), increasing not only the number and speed of new discoveries but also the competition between research teams around the globe. A negative consequence is that more and more research labs, and especially the ones headed by young PIs, are forced to operate on much higher speeds in order to publish their discoveries ahead of competing labs. The increased pressure stems primarily from the fact that the increased number of trained researchers observed over the past years has impinged on a rather small number of PI positions [7], thereby creating bottlenecks in the postdoc-to-PI transition phase and/or the tenure-track-to-tenured PI phase. As a result, young PIs are under extreme pressure to achieve excellence in order to secure one of these few positions [8]. Excellence is typically evidenced by publishing in journals with high impact factors (although this particular criterion is increasingly questioned by many, including the FKNE [9-11]), securing prestigious personal grants, being an invited speaker at prestigious international scientific meetings, serving on selection committees of prestigious grant agencies or academies *etc.* To achieve all the above, young PIs need to work long hours, often so long that for many of them having a family or a hobby seems like a distant dream.

To those that already have a family when they become a PI, things are also complicated by increased family demands. These are again much higher than they used to be one generation ago and include primarily increased housekeeping and childcare responsibilities. The reasons are numerous. In most families, both partners are employed in order to secure a high quality of life in terms of family financials but also to achieve personal career objectives. As a result, the amount of time devoted to family duties and/or activities by both partners is significantly smaller than several decades ago, when most women opted to be stay-home moms. This becomes even more problematic in the case of dual careers. If both parents are scientists, the problem of finding a job in the same city is a particularly challenging one (see section on Dual Careers below) and often partners are forced to leave in different cities and spend long hours commuting. As a result, childcare demands are even higher for the parent who assumes the role of the main caregiver, usually the mother.

The modern educational and/or social life of children is also more demanding with respect to extra-curricular activities. The majority of young children are engaged in sports, foreign language training or other recreational activities from a very early age. This phenomenon of keeping the kids “busy” with educational or recreational activities adds to the workload of parents that have to find the time to plan, drive, wait for the child to finish the activity and generally to ensure that their children adhere to the social norms. If you factor in the costs associated with such activities, which is usually additional to an already too expensive childcare, financial demands on young PIs become a serious burden. Unfortunately, despite the general increase in the cost of living across all European countries over the past few decades, the salaries of academics have not increased accordingly. In fact, in countries under economical crisis, like

Cyprus and Greece, the salaries of academics have decreased by 20-40% [12], within the last 6 years, making it difficult to sustain a decent quality of life. As a result, considering third persons to take care of children is not an option for many PIs.

All of the above put serious constraints on the amount and quality of time young PIs devote to their families or themselves. The consequences are numerous and can jeopardize both career and family life.

The consequences

The aforementioned difficulties impinge on the non-elasticity of time and the unfortunate lack of superpowers amongst young PIs. When one has two passions: family and neuroscience (or science in general) it is often difficult to manage each endeavour so as to remain scientifically competitive in the ever challenging field of neuroscience [13] while getting this feeling of accomplishment/fulfilment as a parent and partner. And this is even worse for female scientists who often choose, or rather are forced to choose, family over a career in science.

Obviously, dedicating time to family results in spending less time in the lab, which, instead of being a no brainer situation, inevitably slows career progression under the current mind state of the scientific community. Taking care of your partner (who must be understanding to live with a scientist, see later, but also deserves to be given the time and care they expect from the person they share their life with) and your child/children is indeed time demanding, more so than some may acknowledge.

With children comes increased workload at home, shorter nights, and the inevitable sleep deprivation that impedes your cognitive performance. Even if, like all the others who have become parents you have been surprised to find yourself accommodating this new family life by increasing your productivity while in the lab, you still have to take time off when called by the nursery, for which you spend a considerable amount of your salary (50% in UK, 20-25% in Greece, 25-30% in Germany or 10-15% in Spain [14, 15]), calls you in the middle of the day to pick up your child who is ill. You have to manage the social rhythm of these small beings whose day is much shorter than yours, nursery or school starting relatively late in the morning and finishing relatively early in the afternoon. And you do not want your partner to be the one exclusively on whom the family life and underlying chores falls down. This is even more problematic when your partner is also an academic, as it is the case for 30% of scientists [16] because there are, after all, very few opportunities for joint hiring, thereby challenging even more the already stretched family/work balance of the couple.

Therefore, as a young PI, with family, or, expecting a baby, you cannot compete anymore with your former self, the one who spent 80 hours/week in the lab, generating all those data or publications. But does it matter, for you are not a post-doc anymore, and these are no longer the standards against which you should gage your commitment:

as a young PI you have to adjust your parameters to this new activity of yours, that is to establish your lab [17, 18]. And this is exactly the time of your career at which you need the most support from your host institution, which tends to ignore that it is very challenging, and distressful to be a young PI who needs not only to establish themselves scientifically, while dealing with new administrative and teaching duties, but also to secure the quality of life for their growing family. At that stage, lack of adapted support, from the host institution, such as affordable on site quality day-care, reduced teaching load, flexible hours, realistic expectations (one cannot maintain high level of excellent scientific output while investing a lot of time and energy setting up a lab), many scientists, too often women, become de-motivated and/or are forced to decide on priorities, family coming first.

This, alongside the paucity of grants factoring in legitimate family-related career-break, for both men and women, and the typical absence of leverage to extend the duration of grants when a member of staff goes on maternity/paternity leave, is one of the underlying reasons why very few women reach high level positions in academia compared to men.

Some young investigators have coped with this pressure by constantly postponing building up a family, having children older in order to secure a job position as a PI. In women, this may result in potential pregnancy complications, which will further impinge on the quality of life. Beyond this, putting one's life on hold to secure a PI position fosters the development of work-aholism, characterized by a progressive narrowing of social interactions, loss of friends who cannot really understand such commitment and eventually result in social deprivation. We are all somehow workaholics because our research activity is not just a job, it is a passion, but it should not come at the detriment of our personal life. Especially when it yields to a dramatic reduction in quality of time spent with family and friends, or insufficient parenting, which may cause problems in parent-children relationships and ultimately children's emotional well-being.

At the end of the day, failing in finding the right work/life balance will bring unmanageable stress and anxiety, feelings of guilt towards your family when working from home or staying too late in the lab, or towards the lab when taking time with your family. If the first solution is about getting rid of this guilt [19], here are some potential avenues better to manage your work/life balance as a young PI.

Solutions: how to balance career & family

At work: Efficiency

Since time at work is shorter as a young PI with family, you better make the best out of it! In other words: Maximize your efficiency and strengthen your focus. There are

several excellent guidebooks [20, 21], papers [22] and blogs [23] out there dealing with this issue, of which at least one should be consulted. Furthermore, some institutions also offer tailored lab-management courses, and so do extra-institutional organizations such as EMBO [24]– it is highly advisable to attend such a course. Therefore, the below list is not exhaustive, but a consensus of what the authors have agreed upon to be of highest priority in order to advance your career all the while being an integral – and present – part of your family.

- 1) Organize, organize, and organize! Organize your days, weeks and months in a productive way. This requires a lot of planning and foresight, but if you anticipate deadlines and other tasks in advance, you can decrease those last-minute work shifts drastically, which will improve your quality of life and increase the time you can spend with your family. Define to-do lists, but define them in such a way that they are actually doable. Nothing is more frustrating than having to deal with to-dos that never get done. Include private items on your to-do list – such as time dedicated to your children, partner, extended family or simply yourself – those are equally important as your work tasks.
- 2) Delegate as much as you can. If you have an administrative assistant, delegate as much of the chores unrelated to science to him/her. These can include the most trivial things such as hotel reservations, travel organization, standard response emails, which individually do not take up much time, but when combined amount to a time commitment that is not negligible. Delegation can also concern the science itself. Invest into hiring excellent postdocs (and graduate students), who can work independently and do not require a micromanaging type of supervision. This does not mean that you should provide no supervision, but the supervision can be done less frequently. This can be difficult, specially when starting your own laboratory and projects and experiments require a lot of your personal supervision but slowly more independency should be incorporated. Additionally, postdocs and PhD students themselves can delegate in order to have more time to think critically about their science and projects. Why not delegate the genotyping, cultures and tedious quantifications to technicians or long-term lab interns you trust? The same applies for ordering: your assistant or technician can do that so that you have more time for brainstorming, reading, grant writing etc.
- 3) Learn to say no! Although it is flattering and alluring when you first start your lab to get invited for presentations at other institutions and conferences, decide for yourself whether it is really worth going or not. Not everything is. Yet, if you decide to go, plan your trips carefully and spread out over the year so that travelling time – which is usually time off your family, and almost always more work for your partner – does not gain the upper hand (also see the different perspectives on this issue from a female and a male PI point of view). Invitations to other institutes usually do not come with an expiration date. It is important to accept that you simply cannot do as much as people without a family; and that's totally fine!

At home: Recreation

Time at home should be time off work, to enjoy your family and to relax your mind. It is true that, especially when you are a PI, there are urgent unexpected issues that need to be sorted out but try as hard as you can to have some true off time. Below you can find some recommendations based on our own experiences:

- 4) Avoid working from home, especially on weekends and during holidays. What is most distressing for your family is that you are only physically present, but absent-minded. Give yours and yourself some quality time. Real breaks are essential and beneficial for your mind – so when you are at home, be at home, not at work; those emails that so desperately need to be checked can wait until later.
- 5) As valuable as time spent with your family is, it is equally important to allow yourself some time off, which can be dedicated to physical exercise, your hobby, your friends, your favourite pass time activity (although this might differ between women and man, see the female-male perspective on this point). Only when you have time to nurture yourself, will you be 100% with your family and a 100% at work.
- 6) Share family responsibilities with your partner. One option is to design a to-do list, assign responsibilities, and divide the chores as you do at work. An alternative is to share all the duties with your partner and kids so that you spend time together that can be different and fun, such as cooking! (See female-male perspective). Nevertheless, get help from a nanny or a cleaning lady if you can afford it. Your parents, if they live close by, also make for excellent babysitters.
- 7) Anticipate important deadlines and travel times as much in advance as possible. Communicate them with your partner, and plan together for the increased workload and stress during that time. Organize external help during that time if possible.

Lastly, although time and work should ideally be strictly split, it is important to share your work excitement and sorrows with your partner, and to share your family excitement and sorrows with your lab. Your partner – and your lab – will notice if you are not 100% there because something preoccupies you. Being a parent is intrinsic to our nature, it's not weird! Most of the people have kids and a demanding work so they will understand your worries and difficulties.

How to balance work and family – a female/male perspective

As female and male PIs might feel different about the topics discussed in this article, we let a mother (GL-B, who has two children ages 3 years and 10 months, and has a Tenure position from the Spanish Research Council (CSIC) and a father (JG, who has two children ages 4 and 2, and is assistant professor on tenure track) answer some questions individually.

How do you and your partner distribute family chores?

GL-B: *My partner is also a scientist, an Associate Professor at the Department of Physiology in a local University and a junior scientist at the same Institute where I am. Our kids go the school and day-care 5 days per week until 5pm. We usually do not split duties; we like to spend time together with the kids. Both of us go to pick them up, do the shopping, prepare the dinner and try to play with them every afternoon.*

JG: *My partner works 80% in industry and the kids go 4 days a week to a day-care near where we live. During a regular week when I'm not travelling, we split the work at home fifty-fifty, from grocery shopping, dropping the kids and picking them up at day-care, to putting them to bed and getting up at night. When I'm travelling, my partner does more of the above. Additionally, to alleviate our work, we have hired an aid for laundry and cleaning.*

How do you reconcile your travel commitments with your family life?

GL-B: *Since I am a mother, I try to minimize my scientific commitments as much as possible but I still accept a few. Almost every month I have something abroad. What I do is to cut the trip in length as much as possible even if this involves not staying the entire duration of the meeting or the event I am attending. However, there is an important physiological difference here between men and women. When you have a baby and you are breastfeeding and you want/have to attend an important meeting, this is brave. Not only to have to leave your baby for those days but to be at the meeting and have to express milk every 4-hours day and night, this is really hard. That's one of the reasons why I started to take the family with me when travelling; especially when trips are long. I did this a couple of times already and it was fantastic. I could attend the important events perfectly well and also spend time with my family. Many scientists do that nowadays trying to combine commitments abroad and family duties. It makes your trip definitely happier!*

JG: *As long as my travels are overnight stays, this doesn't create any additional work for my partner. However, when my absences due to travel are longer, I clearly depend on my partner's goodwill. It is obvious that such absence represents an additional workload for her, in addition to being more sleep-deprived (usually, we alternate from day to day who is responsible for getting up at night). So, when I get back I try to compensate by allowing her some time off, and by looking after the kids several nights in a row.*

Do you feel guilty towards your family when you travel?

GL-B: *This is a difficult point. In some ways I feel guilty because my kids ask me why I am going away and do not stay at home; I am a mummy and this is a very strong feeling. It does not matter what age they are, they miss their mother and this is hard. However, it's also an opportunity to relax a bit, disconnect and refuel my energy.*

JG: Yes and no. No, because it's part of my job and because I like to meet different people and to exchange science. Yes, because each travel is more work on the shoulders of my partner, and the older the kids get, the more I have to explain them why I'm doing this. And since the concept of travelling for work is not an easy one to grasp for them at their young age, I feel sometimes quite bad when I notice that they miss me. On the other hand, it's always very nice to come back, and I feel that I have more energy for them than if I hadn't done the travel.

In addition to time off work that you spend with your family, how important is time off work that you have to yourself?

GL-B: *It is important but I do not have much time for myself! And probably this is a combination of things. On one hand my kids are still pretty young but also I have the feeling that in general mothers have more tendency to prefer spending more time with the kids that doing things for their own. This does not mean that is better (on the contrary) but I feel that this is the case. As kids will get older and less demanding I will definitely try to spend more time for myself or for my myself and my partner which is also important.*

JG: Very important. As a matter of fact, I usually don't have the feeling that my working days end when I get off work and arrive at home. Work – albeit a different kind – continues until the kids are sound asleep, after which I am usually pretty much exhausted. Thus, as much as I love them, I value time off my family as well. These can be trivial things like going out with friends, watching a movie or playing sports. Whenever I do this, it feels refreshing and afterwards, I'm usually more relaxed both at work and at home.

What is more important? Your family or your career?

GL-B: *This is a very easy question as when you have children and a family I believe that there is no other possible answer. The family, of course. I had my first kid when I was 36, my second at 39. My career was kind of a race against nature. I had to perform a successful postdoc, get a stable position into the Spanish system, which is not easy, and get a competing running lab with a reasonable funding. Of course, you can have kids at any time of your scientific career it's just that it would be harder to achieve your goals as aforementioned.*

JG: The family. My credo is that although I will work hard to become successful as a PI, there is a clear limit to this. Since there is no guarantee for success or tenure, I won't let it happen that I will have to look back at my years as an assistant PI and have to tell myself that I was never there for my partner and kids, that I didn't see them growing up.

At the institutional level

Change does not come fast or easy to an institute's organization and habits. Therefore, if you have a choice, choose your institution carefully when deciding where to set up your lab. For instance, does the institution have childcare facilities on site? Are there facilities nearby? Is childcare subsidized? Beyond childcare, does the institution take into consideration maternity/paternity leave when imposing age-limits for young faculty? Does it allow for extensions in the tenure procedure with respect to maternity/paternity leave? In an ideal institution, not only would maternity/paternity leave be compensated, but also the amount of childcare provided by the PI be taken into consideration for tenure evaluations. Employers must accept that educating kids is a meaningful task that might cause lower scientific performance, sometimes for several years. In extension, could it be envisaged that institutes offer part-time work at the PI level, as it is commonplace in industry?

In Greece for example, mothers are given the opportunity to work less (2 hours/day) for a time period of 2 years after they return to work from labor/maternity leave (typically 4 months in private Research Institutes and up to a year in public Institutes/Universities). Unfortunately, since maternity obligations are not taken into account for tenure evaluations, the majority of young mothers chose not to use this part-time offer as this would come at a significant cost for their career progression. This initiative adopted by Greek institutions, while worth mentioning, teaches an important lesson: that part-time would be useful only in conjunction with respective criteria for career progression of PIs with families.

Beyond the institute

The FKNE aims at improving the career options for PIs who are also parents. Therefore, we argue that funding agencies should take maternity/paternity breaks as well as time invested into childcare into consideration when imposing strict age limits. The European Research Agency (ERC) is a nice example of a funding agency that considers both maternity (18 months per child) as well as paternity (time taken off) leaves and even time taken off from research for other reasons, including military obligations, sick leaves, medical training etc. Both Starting and Consolidator ERC grants factor these types of breaks into their calculation of age limits. Moreover, some national funding agencies, such as the Swiss National Science Foundation, already offer specific career-break grants for mothers, which should become commonplace among any funding agency, be it national or international. In the European Funding Frameworks (FP6, FP7, H2020) Marie Curie Grants are also known for accounting for maternity/paternity leaves while also providing the opportunity of Reintegration in research after prolonged time breaks. Given that childcare is more and more distributed among mothers and fathers, career-break grants – and age limit extensions – should be available more often for both mothers and fathers.

Dual careers: increased levels of complexity!

A large number of scientists (~30% with minor variations from country to country) have an academic partner [16]. Sharing intellectual interests and professional networks is perceived as “added value” to the partnership [25]. If one member of such academic couples gets a new (often better) position at another university, the couple ends up in a dilemma: should the partner stay and commute sometimes to the other end of the country, but pursuing your own career, or move to a new place, even if this could mean a professional step-back. The partner’s employment opportunities are one of the top ranking factors that influence the decision of accepting a new position. In reverse, it represents a critical factor for failed faculty recruitment and therefore, forced the institutions to rethink this aspect. While the proportion of academic couples did not change over the last 30 years, the rate at which universities are hiring such couples slightly increased. In contrast to the U.S., the awareness that absence of adequate job opportunities for both partners often results in “brain drain” is relatively recent in Europe. For example, in Germany the first meeting focusing on this topic, organized by the German Research Council and German Donors’ Association took only place in 2003 [26].

It is more than obvious that supporting dual-career couples represents a gain for universities. It is an added value for the institution, augmenting the diversity and gender equality. On a long run, it improves the life quality of academic couples (e.g. facilitation of sharing the family responsibilities and child care, avoidance of commuting) and by these means, their performance and commitment to the hiring institution. However, hiring of academic couples is a sensitive topic because it seems to challenge the ideals of academic achievement, such as open competition and merit. Certainly, no faculty wants to lower its standards and hire a “partner”. This notion is also reflected by the very low number of joint hirings and only slightly higher number of sequential hirings [16] both at European and U.S. institutions. The majority of dual-career academic couples working at the same university were independently hired, replying to separate advertisements for positions or meeting after hiring.

So how to solve this dilemma? How to gain the “best” in their fields and solve the second hiring issue in an optimal way for the institution? Taking into account the national-, local-, field- and subject-specific features, a general solution is not available. However, it should be emphasized that for dual-career hiring the most relevant criteria is the quality, i.e. dual hiring works if both partners are well qualified. Depending on the qualification level, several types of positions can be considered for second hiring and universities proved to be extremely creative in this regard. Tenure-track or tenured jobs, lecturers, research associates are just few examples. Generally, several models for funding such positions exist, the most common using money from the departments of both first and second hire as well as from the provost’s office. Another alternative is that the institution provides funding for the second hiring for a few years, being expected that thereafter the own contribution of the partner covers the costs. A special case of dual-careers is when both partners are full professors. One could consider this

as the most beneficial situation for the university and therefore, the easiest to achieve. However, in practice, this is seldom the case, since with increasing level of qualification of the partner the amount of required resources and administrative constraints equally augment. Institutions often succeed a second hire if the partner fits to a mid-level faculty, yet a full professorship raises the previously mentioned controversy as to whether the qualifications would be sufficient if the person wasn't the partner of a just hired PI.

For dual-career couples the most striking question is how should the partner issue be raised? Taking into account that the strategies of supporting dual-careers are very diverse and vary from university to university, it would be good to start by getting information on the type of support that one can get (e.g. existence of dual-career programs or written policies for dual-career academic couples). In a second step, the partner issue should be raised when negotiating with the institution. Despite all difficulties and traditional gender stereotypes about work and family (e.g. women follow their husbands), such negotiations are the most productive way for obtaining dual-career support. However, one should be aware that institutions are not committed to offer such support. Besides the absence of binding commitment from the institutions, another negative aspect related to dual-career is that the second hire is often stigmatized as "less performant". Even if exceptions exist, it is commonly reported that the second hire is treated with less respect than the first one, being considered as "trailing spouse". This has serious implications, because it disrupts the professional interactions and, on a long run, the working conditions and productivity of an institution.

Despite these difficulties, dual-career hiring is certainly a win-win strategy both for the academic couples, because by these means they enjoy a better quality of life, and universities, because it enhances gender equality and competitive excellence. On the one hand, academic women more often than men have academic partners and more often than men refuse job offers if their partners cannot find suitable positions. On the other hand, dual-career hiring is a promising strategy for recruiting and retaining excellent scientists.

Conclusions

Balancing career with family is not trivial, yet it is certainly a demand of modern academia and the quest of most young Neuroscientists. Based on our own experiences and readings, we have discussed several ways of identifying the problems, finding possible solutions and ultimately succeeding in achieving a balance. In the end, success is about one's own criteria. There is no single solution to each of the identified problems and it is likely that we even missed many of the related problems. The best advice we can possibly offer is to make sure you adjust your own criteria, once obtaining all facts and constraints, before you start your family. Do not just give in to the system: resilience and self-appraisal with regards to the current standards is

what will help you find the right balance between the energy and time you want to put in your research and into your personal life. Both lives can and should be equally satisfying.

Acknowledgements

The FENS-Kavli Network of Excellence is supported by FENS, the Kavli Foundation, Alzheimer's Research UK, the European Molecular Biology Organization (EMBO) and Roche. P.P acknowledges funding from the European Research Council (StG 311435 dEMORY). DB is supported by the Wellcome Trust.

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Information about the authors

The authors are scholars of the FENS-Kavli Network of Excellence, a network of young neuroscientists, with the goal of fostering exchange – scientific or about science policy – between excellent junior/mid-career neuroscientists who are either currently working in Europe or received their academic training in Europe.

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who is full professor at a German university 600 km away, and she have a two years-old child and know much too well the frustration of commuting and dual-career negotiations.

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