

EDITORIAL

The European Journal of Neuroscience's mission to increase the visibility and recognition of women in science

Dana L. Helmreich,¹ J. Paul Bolam² and John J. Foxe¹¹Department of Neuroscience, The Ernest J. Del Monte Institute for Neuroscience, University of Rochester School of Medicine and Dentistry, Rochester, NY 14642, USA²MRC Brain Network Dynamics Unit, Department of Pharmacology, University of Oxford, Oxford, UK

It is truly disheartening that in the year 2017, it remains the case that name recognition and awareness of women scientists are absurdly low in the public sphere (Zielinski, 2011; Swaby, 2015). After Marie Curie, few people can name a single other female scientist. Trailblazers such as Rosalind Franklin or Barbara McClintock, for example, are simply not in the public conversation. Here at EJN, we are deeply concerned about this unacceptable situation and feel that it is important that we make a strong proactive effort to increase the visibility of women scientists throughout our community. We propose to do this by starting a new feature series entitled 'Profiles of Women in Science' that will focus on leading women scientists from EJN and our parent organization, the Federation of European Neuroscience Societies (FENS). It will include a short biography and insights into their careers, motivations, lifestyles and advice for a young scientist trying to make their way in this very competitive time.

The topic of 'women in science' is a multifaceted, complex and often controversial issue. Historically, science has been considered a 'male' pursuit (Kaatz *et al.*, 2014; Callier, 2016), and the low percentage of females in scientific, academic and research positions certainly reflected this bias. Encouragingly, data indicate that the proportion of women scientists, and particularly those pursuing science Ph.D.s., has increased over recent decades, but it remains the case that women still hold a minority of decision-making and top-level academic positions. Some have described this as the 'leaky pipeline' problem (Etzkowitz & Ranga, 2011), encapsulating the fact that there is a progressive tendency for women to leave the field during the transition years from college to a senior science position. There is, however, discussion about whether this is still a valid metaphor (Etzkowitz & Ranga, 2011; Miller & Wai, 2015). We must keep in mind the variables being measured when discussing this topic: Is it the number of Ph.D.s. compared to the number of undergraduate degrees? Or Ph.D.s. to faculty positions? What type of science? Is it physical STEM (Science, Technology, Engineering and Mathematics) arenas or life sciences? Also, do these numbers reflect a generational issue? Is it just a matter of time for the newly minted female Ph.D.s. to reach senior decision-making positions?

It is important to note that choosing a different career path, or 'dripping' out of the pipeline, absolutely does not mean that the Ph.D. and training have been for naught. Work/life/personal goals/

finances/temperament/ambitions all need to be kept in balance. The self-discipline, motivation, analytical skills and attention to detail required for successful completion of a Ph.D. can fruitfully be applied to many other enriching avenues. This is particularly relevant to neuroscience, as the number of Ph.D.s. in neuroscience has risen faster than any other biomedical research field, and academic careers present an increasing number of challenges (Akil *et al.*, 2016).

On the other hand, these considerations do not mitigate the fact that there is evidence that women are under-represented in just about every arena needed for promotion and advancement in academic sciences. In the United States, at the post-doctoral level, elite male faculty members employ fewer female trainees than elite female faculty members (Sheltzer & Smith, 2014). In the EU, females comprise ~ 50% of Ph.D.-level students in science and technology and make up 45% of science and technology entry-level academic staff, but only 21% of top-level positions (European Commission, 2015). A similar situation exists in the United States; females complete ~50% of life science Ph.D.s., but only 36% of assistant professors and 18% of full professors in the life sciences are female (Nelson & Brammer, 2010). Internationally, female scientists can also be under-represented as peer reviewers (Lerback & Hanson, 2017) and invited speakers at meetings and conferences (<https://biaswatchneuro.com>) (Mandavilli, 2016). There are even data indicating that grant funding success is influenced by gender (EU: European Commission, 2015; United States: Kaatz *et al.*, 2014). To top it off, as a group men in STEM fields, compared to their female counterparts, are much less willing to accept data showing that there is indeed a gender bias within STEM, thus perpetuating the cycle (Handley *et al.*, 2015).

Part of this skewing may be explained by implicit biases – stereotypes that can influence our actions and beliefs at a subconscious level. One way to combat implicit biases is exposure to counter-stereotypes, to unlearn the stereotype (Casey *et al.*, 2012; Callier, 2016). It is to this end that we launch this new feature in EJN: profiling women in EJN and FENS. It is our hope that the new 'Profiles of Women in Neuroscience' series will bring well-deserved recognition and accessibility to successful women throughout our community. This also dovetails with our publishing house's mission to support and promote a more diverse research environment, and with our own efforts here at EJN to improve the transparency and openness of the peer review system (Foxe & Bolam, 2017). The rewards from this effort will no doubt be both encouragement and empowerment for young female scientists, and also enrichment and enhancement of science as a whole.

Correspondence: Dana L. Helmreich, as above.
E-mail: Dana_Helmreich@URMC.Rochester.edu

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