

Editorial

Prajval Shastri and Sudeshna Mazumdar-Leighton, Guest Editors

From countless stars in the Universe to uncountable microbes on Earth, this issue brings to you an array of articles on the lives of clouds, stars, black holes, and sub-atomic particles, asking the right questions about urban ecosystems, use of an archaeological monument as a teaching device, morphing carbon into ‘Buckypaper’, and a kick-off of a series of four articles on defying gravity in the cosmos. And so, while this issue is no different from any other in intent, it is ‘special’ because it has an all-female authorship.

Such a ‘special’ issue should not have been necessary.

As is well-known, however, there is a wide gender gap, in the sciences as well as in other arenas, globally as well as in India. Science faculty in Indian universities, (*i.e.*, trained science PhDs) have about 45% women. Yet, this fraction is not matched in elite research institutions, in institutional leadership, in awards and honours, and also, it turns out, in the authorship of *Resonance*, which is under 16% even over the last three years. What are the reasons for this gap? Is it tenable to explain it as due to a paucity of women scientists who can competently write popular science articles?

This question led to genesis of the idea that a special issue with an all-female authorship would be a worthwhile experiment. Our proposal in Sep’ 2016 for an issue to go with International Women’s Day received thumping support from the editorial board. We decided to orient towards the physical sciences that have a very large gender gap. Nevertheless, the very first emails seeking articles received ready assents! The disciplines covered in this issue span both the pure and applied sciences, and have particle and fluid physics, astrophysics, hydrology, chemistry, and molecular ecology.



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Our Featured Scientist is Lise Meitner, an extraordinary physicist who discovered nuclear fission – The Classics feature carries a reproduction of her paper in *Nature* – and the world has never been the same since. Sadly for Meitner, like for many scientists of her time and after who happened to be women, acknowledgement was far from proportional to their contributions to humanity.

This brings us to the other aspect of this issue, which touches upon social processes within the practice of science. A review of Keller's *The Mirage of a Space Between Nature and Nurture*, brings an interesting book on metaphors leading to gendered science. We glimpse more unsung heroes through a review of the Hollywood film *Hidden Figures*. The film industry rarely chooses science as their back drop, which in this case is NASA's early space explorations. It is an inspiration, and raises issues for reflection that could be relevant to the Indian context too.

In the feature Face to Face, we bring you an interview with Melissa Franklin, a particle physicist who was involved in the discoveries of the top quark and the Higgs Boson, and whose experiences, were, to say the least, surprising. And finally, we bring a cartoon by Kanika Mishra, who is the creator of a cartoon series *Karnika Kahen*, and from a field that also has a large gender gap!

Needless to say, this issue would not have come about without the strong support of all involved – unequivocal endorsement of the editorial board, strong support from the editorial team, thorough, and quick reviewers (not all women!), astrophysicist Caitlin Casey who generously gave her time to write a film review, as did Melissa Franklin, for the interview in Face to Face.

Finally, we must applaud the authors not only for the effort they put in to write, but also for taking the risk of being tagged by their gender. It is indeed a risk, because our professional ambience looks upon women who work towards gender equity as wanting to get favours for themselves, and they are vulnerable to the quality of their work being questioned on that count besides.

While this is the first issue of *Resonance* that has deliberately foregrounded gender, we hope that of necessity, it will be the last.

