

Breaking down barriers

We celebrate four of the most inspirational role models pushing for diversity among astronomers.

Dame Jocelyn Bell Burnell (pictured, left) is deservedly back in the limelight. Last year the astrophysics community celebrated the 50th anniversary of her discovery of pulsars. Last month, on 6 September 2018, Bell Burnell received a Special Breakthrough Prize in Fundamental Physics for “the discovery of pulsars, and a lifetime of inspiring leadership in the scientific community.”

The story of the discovery has been told many times, including by Bell Burnell herself in *Nature Astronomy*. But the Breakthrough Prize also highlights her leadership roles in astronomy, physics and science more generally. As the first female president of the Institute of Physics as well as the Royal Society of Edinburgh, she worked hard to increase the number of women in STEM and to improve the conditions in academia for them so that more would stay. The prize comes with a US\$3 million purse, which she has donated to the Institute of Physics to fund PhD students who come from underrepresented groups in physics, such as women, ethnic minorities and refugees.

Bell Burnell has become something of a symbol of inequality — her PhD supervisor Antony Hewish won the 1974 Nobel Prize in Physics “for his decisive role in the discovery of pulsars”, though Bell Burnell was not so honoured. But she is magnanimous, saying, “I feel I’ve done very well out of not getting a Nobel Prize. If you get a Nobel Prize you have this fantastic week and then nobody gives you anything else. If you don’t get a Nobel Prize you get everything that moves. Almost every year there’s been some sort of party because I’ve got another award. That’s much more fun.” With this attitude, she

shows yet again why she is not only a role model for women but for every one of us.

And more female role models we need. In the UK, women account for 14.4% of the STEM workforce. While there is a vocal minority against diversity for the sake of diversity, the inequality speaks for itself. And just having a diverse workforce is not enough; the work environment must be inclusive so that everyone feels comfortable enough to speak and make a contribution. To this end, the inaugural *Nature Research Awards*, sponsored by the Estée Lauder Companies, aim to improve the gender balance by bringing the work of women to greater prominence.

There will be two awards, with one winner in each category, announced on 30 October 2018. Candidates for the Inspiring Science Award are all early-career academics who self-identify as women and have excelled in scientific discovery. The shortlist of five includes two astrophysicists: Cara Battersby (pictured, second from the left) and Mirjana Pović (pictured, third from the left). Battersby studies the formation of massive stars and stars clusters throughout the Milky Way, including within the extreme environment of the Galactic Centre. She also leads the advocacy group for the proposed Origins Space Telescope, which will *look for biosignatures in the atmospheres of Earth-sized exoplanets*. In addition to her research, Battersby is a devoted ambassador of astronomy, striving to increase the diversity of future scientists through programmes such as BiteScis (connecting graduate students with K–12 science teachers) and CU-STARs (retaining undergraduates from underrepresented communities through talks and outreach activities).

Also up for the Inspiring Science Award, Mirjana Pović works on the morphological classification of galaxies with an emphasis on active galactic nuclei. She also studies the putative relation between star formation and nuclear activity in galaxies. Based at the Ethiopian Space Science and Technology Institute in Addis Ababa, Ethiopia, she strongly supports the *use of space science and technology in the region to meet their development challenges*. Beyond Ethiopia, Pović works on joint research collaborations, student supervision, lecturing, regulation development and outreach in Rwanda, Uganda, Tanzania, South Africa, Kenya and Ghana.

The Innovating Science Award is for a person or group who has driven a grassroots initiative that has encouraged more girls and young women to engage with STEM subjects. Astrophysicist Marja Seidel (pictured, right) was on the longlist for her diverse outreach activities. Perhaps the most unusual of these initiatives is the *Cielo y Tierra project*. One expedition involved Seidel and Kira Buelhoff travelling on horseback or by paraglider to reach remote parts of Colombia with a pair of telescopes!

Although not every astronomer is as adventurous as Seidel, there are endless ways in which we can all inspire others to learn about the natural world and perhaps to become scientists themselves. If we are going to make more astonishing scientific discoveries, we will need as diverse a group of scientists as possible. We celebrate Bell Burnell and all the nominees of the Nature Research Awards for making a difference. □

Published online: 2 October 2018
<https://doi.org/10.1038/s41550-018-0606-x>



Credit: Jocelyn Bell Burnell photo, Geraint Lewis / Alamy Stock Photo; Marja Seidel photo, Marja Seidel.