STEM under a microscope: Where are the girls?

By Eleanor Mason, Science Editor (2016/17)
Tuesday 1 November 2016

THE ANNOUNCEMENT of 2016's Nobel Prize winners should have brought bags of inspiration for many science students, especially those who are currently lacking motivation. A Nobel Prize to many scientists is the prestige equivalent of an Oscar to those in the film industry. However, similarly to 2015, a noticeable lack of women claiming a prize in either of the Physics, Chemistry, Physiology or Medicine categories, deems likely female scientists may lose hope in ever claiming a prize. Since the birth of the Nobel Prize in 1901, 881 individual Laureates have been awarded, in which only

Image: Free Stock Photos. Just fourteen per cent of those employed in STEM are female.

twelve women have won a Nobel Prize in Physiology or Medicine, four in Chemistry and two in Physics. Furthermore, in one recent analysis, it was revealed that women occupy only 14 per cent of jobs in STEM fields, and a recent journal in Nature revealed that relatively few women make it to top positions in science, and even fewer are asked to speak at conference meetings, or asked by journalists for a quick scientific opinion. The prevalent gender gap in STEM subjects should be questioned; why is it very few women seem to be in the limelight of scientific research?

It is undisputed that gender gaps exist in many career areas. The fields of primary education, childcare, nursing, secretarial and administrative positions are primarily dominated by women, with a higher percentage of men employed within the construction, project management, mechanics and professional cooking industries.

A report in Nature concluded that science remains institutionally sexist; women scientists are still paid less, promoted less and are less likely to win grants, despite some progress. Scientific careers were historically thought of as male driven. Take Hertha Aryton, born in 1854. She studied maths at Cambridge but as a woman she was not eligible for a degree, meaning she had to study in London to gain her BSc. However, attitudes towards women and education have progressed significantly since then. To fight gender gaps that are still rampant today, a group of frustrated neuroscientists have created a group called BiasWatchNeuro in an attempt to solve the gender biases of academic conferences. The group have analysed over 90 conferences and found some interesting results: one talk on memory in health and disease, which according to the National Institute of Health's grant-winner list is a subject with a 42 per cent women base rate, only had two female speakers out of 17 – just 12 percent. Although not a conscious decision to exclude women, it may be explained by social psychology that determines our

unconscious biases. Although, with BiasWatchNeuro spreading the word on the issue, progress is being made in some conferences.

From an educational perspective, there are roughly equal numbers of males and females studying Chemistry at A-Level, but males dominate in other STEM subjects, except Biology. At undergraduate level, males dominate Engineering and Technology, Computer Science and Architecture courses whereas females dominate in Medicine, Veterinary Science and agricultural subjects, according to a 2014 WISE paper. At postgraduate level, the number of women appears to decline throughout STEM subjects. Fewer than 14 per cent of those employed (including all health care professions) are female. Maybe the issue is not that not enough women are studying science at university, but fewer are continuing into scientific careers, or more are dropping out in the early stages of their career.

There is a glimmer of hope. The University of York's Chemistry department became the first UK Department of Chemistry to obtain Gold Athena SWAN in 2007. The Biology Department holds Gold and Physics Silver. The Athena SWAN awards recognise commitment to tackling inequality in higher education. The award celebrates positive practice in recruiting, retaining and supporting the careers of women in STEM fields.

So, should we leave it to natural progression, or are groups such as BiasWatchNeuro fundamental for improvements necessary for the representation of women in science, and to ensure female role models are easily accessible for aspiring scientists? If so, could this be applied to other sectors where gender gaps are prevalent?

Most Read Discussed

1. A closer look at Pot Noodles
2. The York flood fiasco: Where did all the water come from?
3. Fishing methods are devastating seas
4. Revolutionary biotech to combat deadly diseases
5. World Penguin Day: Overfishing and climate change impacts penguin populations
6. What is the environmental impact of print media?

Write for Nouse Science

Get in touch with the editors

Join the Facebook group

More in Science

Revolutionary biotech to combat deadly diseases

Could a snake have legs?

Climate change is producing deadlier disasters

Fishing methods are devastating seas

Poaching is driving vulnerable species to the brink

Microplastics: are they as bad as we feared?