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Women in Physics: an interview with Helen Gleeson

Helen Gleeson is an experimental physicist working in soft matter. She has held leadership positions in both the University of Manchester and the University of Leeds where she is currently the Cavendish Professor of Physics. The focus of her research is in the physics of liquid crystals, both from a fundamental and applied perspective.

Credit: Helen Gleeson

Helen is an advocate for inclusion and diversity. In 2009 she received an OBE recognition for her work encouraging women in Physics. More recently she has been partnering with the Institute of Physics and Research Councils to improve equity, inclusion, and diversity in Physics.

Why did you choose to be a physicist?
I had my first encounter with Physics in school, at about 13, and loved the way that it explained the world around us. My inspirational high school Physics teacher encouraged us along the path to discovery, and I decided that Physics was what I wanted to keep learning about. At university I especially liked the Physics "I could see", so I ended up researching optics and optical materials—liquid crystals.

What scientific developments are you most excited about?
I think that the most important thing we can do these days is focusing our knowledge and expertise on global challenges including climate change and healthcare. As a soft matter physicist, there are many examples where our work can make a difference—energy efficiency and harvesting, as well as cheap, accessible point of care diagnostics.

In your view, what are the issues women are facing in terms of diversity and inclusion in academia? What has been your experience?
There is very little diversity in the Physics population, which results in significant challenges in communicating what the negative experiences of minorities are—or even that they exist—to many of our colleagues. Throughout my career, I continuously experienced bias, including in the language used to describe women who have success or take up senior positions e.g. women are often described as 'bossy' or 'pushy' while men are 'assertive' or 'confident'. Bias is also a real issue in conferences—many still have extremely poor representation of invited women (or other minority) speakers, much worse than the demographic suggests is appropriate. A contributing factor is unconscious bias—invitations go to the researchers who are already highly visible. I've had some success in challenging this, but also a shocking lack of interest from some senior people who have the chance to influence and change this, but just aren't interested in the problem.

If you could change one thing (or two)—what would you change to increase the proportion of women studying Physics?
I think that the biggest difference could be made in schools, with more Physics teachers who understand that Physics is for everyone. There are many excellent and committed teachers, but sadly there are still some who are far from embracing diversity. This was recently illustrated by the debate that sparked when one head teacher suggested that the low proportion of girls studying Physics was because girls don't like Maths. If I could change this (and other) shocking views within some schools that are not supportive to women studying Physics, I would.

Have you had to make choices during your career in Physics due to outside influences?
I married a physicist and so one of the biggest difficulties for us was finding two jobs in the same geographical location. We spent two years mostly on different continents early in our marriage. This so-called two-body problem affects a lot of people; we spent a lot of time and energy trying to find jobs in the same place which we eventually did.

Were you in a minority at any stage of your career and did it make a difference?
I've been in a minority at all stages of my career. Yes, it made a difference, sometimes positive but more often negative. I've had to deal with harassment and discrimination on many occasions, which is soul-destroying. I've often been the only woman in the room and have been excluded from conversations in 'men only' places. I've been told that the only reason I got a job or promotion was because I was a woman. Sometimes being a minority can work in your favour, as you automatically stand out from the crowd. I have had some opportunities (such as being involved in committees and panels) that a man probably wouldn't have had at the same career stage. Although my career has been successful, the environment I've had to work in has often been unpleasant, and I've had to spend energy on dealing with bias and discrimination, which takes some of the pleasure away from teaching and research.

Have you engaged in changing systems to remove gender bias and act as gatekeeper?
I've tried to do this in numerous ways. When I began to take on senior roles (Dean for Research, Head of School), I was able to devise and implement family-friendly policies and approaches for sabbatical leave, parental leave and flexible working/timetabling, and also to ensure that inclusion and diversity had a high profile through, e.g. introducing codes of conduct. I've already mentioned trying to influence Conference Chairs to be more inclusive. I've worked with the Institute of Physics on numerous initiatives including Project Juno and its replacement, the New Inclusion Model. I currently chair the Bell Burnell Graduate Scholarship fund which supports students from minority groups in Physics to do or complete PhDs—that involves

rethinking postgraduate admissions and support. I now give talks nationally and internationally explaining the scheme. As an Engineering & Physical Sciences Research Council (EPSRC) Established Career and Equity Diversity and Inclusion (EDI) Champion, I have the opportunity to influence some decision makers, e.g. pointing out where better practice to support minorities should be implemented.

Do you have any advice you would like to share with women just starting out in the field?

Don't listen to those who try to undermine you, have confidence in yourself and your abilities and don't be afraid to call out bad behaviour. There are many people out there who are supportive and understand the barriers faced and overcome by minority groups so there is no need to be isolated. Try to ensure that you have a trusted group of colleagues, confidantes and friends who will support and advise you if you face tough situations. But most importantly, your gender has nothing to do with how good you are at Physics—go for it!

This interview was conducted by the editors of Communications Physics.

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