

LGBTQ+ scientists: UK-US inclusion in STEM

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Belinda Colston¹, Abigail Powell¹, Lauren Esposito² and Arti Agrawal³ discuss the challenges for LGBTQ+ scientists and inclusion in the UK-US STEM landscape through an intersectional lens

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The STEM professions continue to be dominated by white, heterosexual men and characterised by a stereotypically masculine culture with the expectation of heteronormative identity. The exclusionary and hostile environments often encountered in science, technology, engineering and mathematics (STEM) disciplines have persistently excluded women, ethnic minorities, disabled people and those who identify as LGBTQ+.

We have known for some time now that women face barriers in STEM with regard to stereotyping, bias, and limited career advancement opportunities. Evidence also points to systemic racial discrimination in the sciences and in engineering, resulting in the under-representation of people from Black and minoritised ethnicities, as well as high levels of attrition. The exclusionary and hostile environment is characterised by a lack of role models, bias in funding systems and promotion practices, an absence of KPIs around D&I and a general culture where implicit and explicit racism, sexism and homophobia are accepted and rarely challenged. Regarding scholarly research, most academic studies focus on gender inequalities in STEM.

Under-representation of LGBTQ+ scientists

More recently, research has focused specifically on the under-representation of LGBTQ+ scientists and engineers, as well as high attrition rates (the 'leaky pipeline'). Research by the Institute of Physics, Royal Astronomical Society and Royal Society of Chemistry in 2019, for example, found that:

- Many survey respondents are hesitant to answer questions about gender and sexual orientation, even when data are collected anonymously, potentially indicating concerns for workplace safety;
- 28% of LGBTQ+ respondents had considered leaving the workplace because of the climate or discrimination towards LGBTQ+ people; Nearly half of those who were trans had considered leaving for similar reasons;
- Almost one-third of respondents said they had witnessed exclusionary behaviour, and one in five LGBTQ+ respondents had personally experienced harassment or other exclusionary behaviours, compared to one in ten heterosexual respondents;

- The majority of respondents (60%) thought that organisational policies and practices were supportive of LGBTQ+ staff, but 17% felt they were at best lacking and at worst discriminatory. Women, non-binary and trans respondents were less likely to find policies supportive, highlighting the need to disaggregate data where possible; and
- Almost half of respondents (49%) agreed there was an overall lack of awareness of LGBTQ+ issues in the workplace.

As a result of the hostile, exclusionary working and learning environments we have created, the scientific world is now at high risk of losing its LGBTQ+ scientists. There are many reasons to challenge this exclusionary environment and make STEM more inclusive. First and foremost, enabling everyone to thrive in their workplace is a matter of fairness and social justice. Secondly, in the UK, at least, it is illegal to discriminate against groups or individuals with ‘protected characteristics.’ Thirdly, in what is sometimes referred to as the business case, increasing diversity and inclusion will help expand the talent pool, address skills shortages, and increase innovation due to increased diversity of thought.

Promoting equality, diversity and inclusion (EDI) in the workplace

A significant challenge across all areas of workplace EDI is that there is little evidence around what works to shift the dial in a positive direction, with few organisations evaluating practices and policies they may be implementing and few willing to share their evidence, particularly around what doesn’t work. Importantly, organisations such as the Royal Society of Chemistry, the Royal Academy of Engineering, and the Institution of Mechanical Engineers are increasingly sharing resources and toolkits to help other organisations in the endeavours to promote D&I. Many of the STEM professional bodies are signatories of the Science Council Declaration on Diversity, Equality, and Inclusion.

In the UK, the LGBTQ+ workforce is protected by the Equality Act 2010, which makes it illegal to discriminate against someone because of their sexual orientation or gender reassignment. In other countries, however, such protections may not exist or be uneven (for example, in the US) or the law may even criminalise homosexuality (for example, in Indonesia).

Existing LGBTQ+ and other diversity-focused research, however, typically focuses on observed inequalities in isolation. This does not reflect lived experience, where individuals often identify with more than one minority group. Our innovative research, funded by the Royal Society of Chemistry and the Department for Science, Innovation and Technology (UK Science and Innovation Network, USA), seeks to address this by considering the compounding effect of multiple, overlapping disadvantages and discrimination. In a partnership between the Eleanor Glanville Institute at the University of Lincoln and the California Academy of Sciences in the US and 500 Queer Scientists, the research explores how layers of marginalisation in STEM impact workplace experiences. We will also examine the policies and practices currently in place across the UK and US to

support LGBTQ+ STEM professionals. Findings from the research will be used to develop evidence-based inclusion strategies to improve the retention of LGBTQ+ scientists and engineers.

If you are working as a scientist or engineer or in another STEM profession in the UK, US or Australia and can spare a few minutes, you can [tell us more about your experiences of work in our climate survey](#). You do not have to identify as LGBTQ+ to participate, and you can skip any questions you do not want to answer.

We also want to hear from you if you are a STEM employer in the UK or US. You can tell us all about your organisation's approach to EDI and supporting LGBTQ+ staff in STEM by completing our short, anonymous [policy and practice survey](#).

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