

A bullying problem reveals an astronomy and geophysics community in crisis

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A survey of astronomy and geophysics professionals has revealed prevalent bullying and harassment within the sector, with women and marginalized groups most likely to suffer. It is time for the community to face up to the issue and discuss ways of tackling it.

In April 2020, the UK’s Royal Astronomical Society (RAS) carried out an open and anonymous survey of members of the astronomy, Solar System science and geophysics communities about their experiences of bullying and harassment, and their perceptions of workplace culture. From the UK and elsewhere in the world 660 responses were received. The aim was to understand the likely extent of such undesirable behaviours, and which communities were most at risk from suffering from them in the workplace.

The [results show](#) a systemic bullying problem across our field, with 44% of all respondents having suffered workplace bullying and harassment at least once in the two years prior to completing the questionnaire. This percentage is broadly consistent with the UK University and College Union’s [2013 report stating](#) that 48% of their 24,030 respondents working in higher education had reported being bullied at work. However, this statistic greatly exceeds *Nature*’s global 2021 salary and job satisfaction survey of 3,200 scientists, where 27% experienced bullying in their present position¹.

The RAS survey results also showed that there was not a single demographic group, career stage or career path that has not suffered in the workplace, and perhaps unsurprisingly, that there were multiple marginalized communities that stood out as having suffered far more than their colleagues.

Sample sizes and intersectionality

In the reporting of the results, due to a low number of respondents in certain demographic groups (for example, Black people), some groups were combined to preserve anonymity. This situation will come as no surprise to colleagues, given the context that at the time of the survey there [were only 65 Black science professors](#) (out of 10,560) in the UK, and vanishingly few senior Black colleagues in astronomy and geophysics. Given these sample sizes, we were also unable to do any intersectional analyses (comparing the experiences of Asian women to white women, for example); however, we would expect to see the compounding effects of intersectional issues in a larger dataset.

We cannot determine if, for example, our Black colleagues’ experiences differ to those of our mixed-race colleagues, or indeed those of African heritage, compared to African–Caribbean. It is quite telling about the lack of diversity in our field that we cannot even identify the extent of the barriers that exist for our Black colleagues due to low

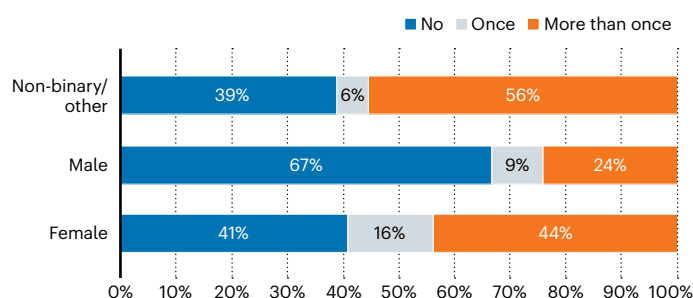


Fig. 1 | Frequency of bullying and harassment during the two years preceding the RAS bullying and harassment survey, disaggregated by gender.

Respondents were asked “Have you been subjected to bullying and harassment in your workplace in the last two years?”. Responses show women, non-binary, and gender-fluid respondents were the most likely to be bullied and harassed in the workplace.

representation; barriers that probably contributed to this low representation and pushed them away.

Gender and experiences of bullying

Our results showed that women and non-binary respondents were much more likely to be bullied than men, with 61% of non-binary and other gender respondents and 59% of women reporting being bullied and harassed in the past two years, compared to only 33% of men (see Fig. 1). This means that our women and non-binary colleagues are 50% more likely to be bullied in the workplace than men.

We also asked our respondents more detailed questions about how frequently they were bullied and harassed in the preceding twelve months. With these data we see that ‘non-binary and other’ gender respondents are the most at risk, with 16% bullied at least once per week and an additional 5% of them bullied every day. These proportions compare to only 3% and 1% respectively for men, and 6% and 1% for women.

Our findings suggest that the efforts of the many woman-focused initiatives in Astronomy and Geophysics, such as the International Astronomical Union’s [Women and Girls in Astronomy Project](#), and the dedicated awards for women in our field (such as the RAS’s own [Caroline Herschel medal](#) to honour women in astronomy in the UK and Germany) are offset by huge additional workplace hardships that many of our women face. These initiatives perhaps also do not represent – or enable – our non-binary and gender-fluid colleagues at all.

Experiences such as these are also not unique to our field: the Space Skills Alliance (SSA) carried out the UK’s [Space Census](#) in 2020, and found that 41% of women in the UK space sector had experienced discrimination, compared to only 10% of men. The SSA also found that women in the space sector were less likely to feel welcome than men (47% always felt welcome compared with 79% of men), with women in academia in the space sector feeling even less so (31% of women

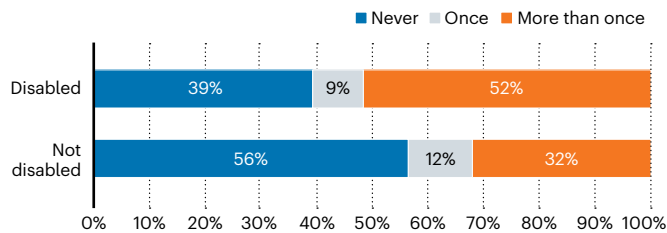


Fig. 2 | Frequency of bullying and harassment during the two years prior to the RAS bullying and harassment survey, disaggregated by disability. The responses show that people with a disability are most likely to have suffered bullying and harassment during the past two years.

compared with 70% of men in academia). *Nature's* 2021 salary and job satisfaction survey also found that academia has a larger bullying problem than industry, with 30% of academics reporting bullying in their current role, compared to 15% of those in industry¹.

That these fields have similar results does not diminish our responsibility to address the issue: we would argue that it demonstrates how culturally embedded – and even accepted – targeted bullying is within STEM and within academia as a whole, and therefore it must be a priority for the wider research and STEM community to tackle such systemic issues.

Disability and experiences of bullying

We found that respondents with disabilities were 40% more likely to be bullied and harassed in the workplace than their colleagues without disabilities. In the two years prior to the survey 61% of respondents with disabilities suffered bullying and harassment, compared to 44% of respondents without disabilities during the same period (Fig. 2).

Sexuality and experiences of bullying

Our survey also suggests that LGBTQ+ (we included trans colleagues in our gender analyses) astronomers and geophysicists are more likely to be bullied in the workplace than their straight/heterosexual counterparts, with 50% of gay or lesbian respondents bullied in the past two years, and 53% of bi respondents, compared to only 43% of straight respondents (Fig. 3). We also found the frequency of bullying that LGBTQ+ respondents suffered was higher, with 12% of bi respondents bullied at least once per week, compared to only 4% of heterosexual/straight respondents.

We cannot say for certain whether this bullying was targeted at their sexuality, as our respondents were not asked the nature of the bullying and harassment they suffered. We can, however, compare our results to the wider experiences of LGBTQ+ physical scientists in the UK, where 18% of LGBTQ+ physical scientists experienced exclusionary behaviour on the basis of their sexuality, compared to only 10% of non-LGBTQ+ respondents. This 8% difference is roughly in line with the difference between straight and LGBTQ+ respondents in Fig. 3, suggesting a similar level of targeted harassment and exclusionary behaviours in our community.

Ethnicity and experiences of bullying

Our data also indicate that Black, Asian and minority ethnic (in the UK described as BAME) astronomers and geophysicists are more likely to be bullied and harassed than white people, with 50% of Asian respondents and 51% of Black, mixed and other heritage respondents reporting being bullied in the past two years, compared to only 43% of white

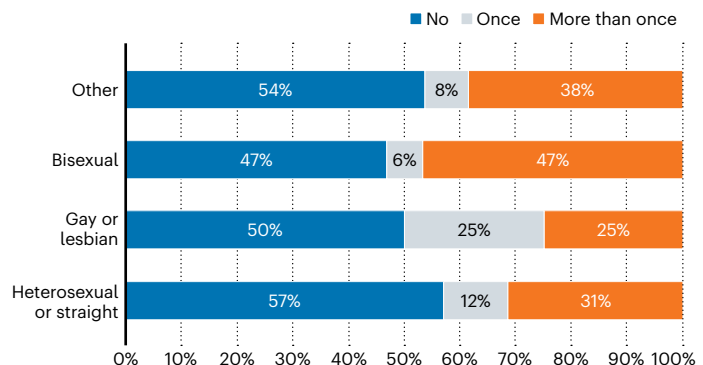


Fig. 3 | Frequency of bullying and harassment during the two years prior to RAS bullying and harassment survey, disaggregated by sexuality. The responses show that gay, lesbian, and bi people are most likely to have been bullied and harassed in the last two years.

respondents (Fig. 4). We also found that Black, mixed and other heritage respondents were more likely to suffer very frequent bullying and harassment, with 14% of these respondents suffering it at least once per week, and an additional 3% suffering it every day. This rate compared to only 4% and 1% of white respondents respectively, and 3% and 0% of Asian respondents.

How do employers respond?

Readers may ask why our colleagues do not report the bullying they experience to the authorities. Are perpetrators not dealt with? In the UK there are high-profile cases where astronomers have reported their harassers and were forced to sign non-disclosure agreements (NDAs) by their universities². Instances like these may deter others from reporting, as they feel they won't be believed. A 2021 freedom of information request by [Al Jazeera's Investigations Unit](#) found that of the 1,403 sexual misconduct complaints made by students across 125 UK universities, only 487 were even investigated. Our universities are ignoring the survivors who do have the strength to come forward.

Our survey asked the respondents who had reported bullying and harassment how well they thought it was dealt with. Only 35% of our respondents were satisfied with how their report was dealt with, and 25% had their report ignored completely. We also asked all respondents if they thought their employer took sufficient action to prevent bullying and harassment or unwanted behaviours at work. Only 37% of respondents replied yes to this question.

How do we support our communities most at risk of bullying and harassment? The adage 'nothing about us without us' may be the answer here, and perhaps we should be recognizing the efforts of trailblazers such as Ashley Walker and their team (as the RAS recently has, in [awarding them the Annie Maunders Medal](#)). In founding Black in Astro Week in the USA, Ashley and colleagues started a movement that celebrates and amplifies the platform of Black people in space-related fields globally each year. If there are so few Black astronomers and geophysicists that we cannot even make a statistically sound dataset from their responses, we surely must do all we can to celebrate the enormous efforts of those who work so hard to bring the community together, as well as remove the barriers stopping them from entering in the first place.

The importance of making astronomy and geophysics inclusive and accessible to all is gaining visibility, and the answer to increasing

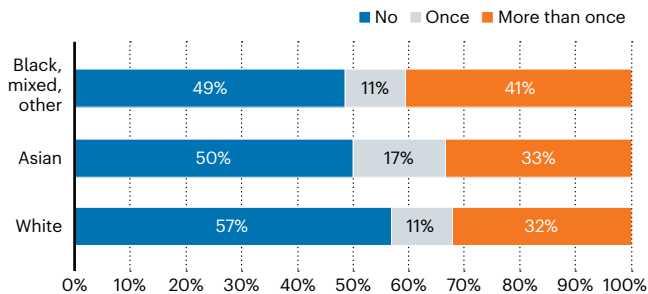


Fig. 4 | Frequency of bullying and harassment during the two years prior to RAS bullying and harassment survey, disaggregated by ethnicity. Ethnic groups were combined to preserve anonymity. The responses show that Asian, Black, mixed and other heritage respondents were the most likely to have been bullied and harassed in the two years preceding the survey.

and maintaining diversity does not lie in outreach and engagement alone. There have been amazing developments in how we engage the disabled community with astronomy, for example in developing tactile diagrams for people affected by blindness³. The global COVID-19 pandemic, as well as the ongoing climate crisis, has put the long overdue discussion of the future of conferences at the forefront of academia^{4,5}. Furthermore, grass-roots organizations are making huge strides in equity and visible representation, particularly harnessing social media and community efforts (for example [Leading Routes](#), [Black in Astro](#)), but we still do not see the same visibility – or enthusiasm – in leadership roles or decision-making.

However, if our marginalized colleagues are not treated equitably in the workplace, should we be encouraging them into our community, knowing that they will face such hardships? It may not be as trendy or sound as ground-breaking, but we believe we should be working as hard at removing and deterring bullies from the workplace as we are on making tactile Hertzsprung–Russell diagrams, and accessible hybrid conference platforms. Surely we should only be welcoming marginalized groups into the community if we genuinely believe that the community will be a welcoming and safe space for them?

Evidently, there is a bullying problem in our sector. It is a problem that exists within a culture of systemic bullying in academia; one that is sustained by NDAs put in place by universities, and the lack of serious retribution for proven harassers. The RAS report serves as a wake-up call that we must do better: we must overhaul our policies so that more robust procedures are in place to protect our colleagues, especially those who have had to overcome so many more barriers to join us in the first place. We have a social and moral responsibility to all take steps to ensure this is the case, for the benefit of us all.

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Competing interests

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