

Improving diversity in natural and environmental science: guidance for outreach

Context

There is a persistent under-representation of ethnic diversity in natural and environmental science courses, and a corresponding under-representation of ethnic diversity across university departments in the UK and abroad. This under-representation must be addressed, both as a fundamental injustice, and because a lack of diversity stymies innovation and comprehensive environmental understanding.

This outreach guidance has been developed from a student-led internal review of outreach practice at Northumbria and Newcastle Universities, and a rapid evidence review of EDI outreach practices. It builds on key findings from reviews of existing practice and evidence from outside the institutions and offers suggestions for approaches and ways of working. It should have value to institutions, departments, academics and others involved in outreach.

Information about the underpinning evidence base can be found in the linked Rapid Evidence Review.

Outreach can only be part of the solution

The lack of diversity in Natural and Environmental Science is a 'wicked problem' and cannot be detached from systemic and historical factors.

Outreach should avoid deficit thinking. Under-representation in natural and environmental sciences is not the fault of the young people who aren't entering the field or staying within it. It is due to bigger societal and structural challenges which still need to be addressed.

On its own, outreach cannot resolve the challenge of under-representation. It can however be a valuable part of a wider solution. Any solutions involving outreach must also recognise the complexity of the challenge.

Outreach is most likely to be effective in improving representation when it uses **strategic approaches**, is **evidence-based**, and when the **responsibility** for outreach is collaborative and collective.

STRATEGIC APPROACHES

Individuals are undertaking outreach and public engagement activities, but this isn't coordinated or joined up. Outreach is often undertaken without consideration of wider diversity challenges.

To effectively increase ethnic diversity in Natural and Environmental Science, outreach should follow a strategic path aligned with broader institutional diversity efforts. Focus areas could include:

- **Making a long-term commitment:** Sustained outreach programs are crucial for attracting and retaining ethnic minority students. These programs should be adaptive to ongoing feedback and changing dynamics to ensure engagement and inclusion.
- **Partnership and community-building:** Establish and maintain relationships with ethnic minority communities to ensure outreach is relevant and engaging. This could involve understanding community needs and interests, direct collaboration or co-design.
- **A targeted approach:** Identify which groups to target and ensure your core messages are clearly tailored for this group — think about the purpose, what you want to convey, and your intended outcomes.
- **Providing institutional support:** Allocate appropriate resources and workload for outreach strategy development, potentially establishing dedicated teams or roles for coordination.

By adopting these strategic recommendations, outreach efforts can become more organised and impactful, playing a critical role in broader diversity initiatives.

1) EVIDENCE BASED

There is no clear evidence of what works to improve EDI through outreach. Evaluation of outreach activities is rarely reported at all, and even more rarely with rigour.

Effective outreach to enhance EDI in natural and environmental science is hampered by a lack of clear evidence on successful strategies making it difficult to identify best practices.

Focus areas could include:

- **Building knowledge:** Implement systems to track and monitor diversity. Collect data on participation and outcomes to provide insight into current diversity challenges and measure progress.
- **Developing robust evaluation frameworks:** Establish comprehensive frameworks such as logic models and theories of change to assess the impact of outreach activities. This involves systematic evaluation and documentation to understand what constitutes effective EDI-focused outreach.
- **Committing to evaluation and dissemination:** Actively evaluate activities and report findings, including successful outcomes and challenges faced. This highlights effective practices but also fosters a culture of learning and improvement across institutions.

By prioritising these elements, universities can build a strong evidence base that informs future outreach efforts, leading to more meaningful and sustained advancements in diversity and inclusion.

2) RESPONSIBILITY

Outreach is often undertaken by those with an interest or passion, without funding, support or recognition from institutions or funders.

Outreach initiatives often rely on individuals who are particularly passionate about diversity, equity, and inclusion, frequently operating without sufficient institutional support or recognition. Relying solely on individual staff or student ambassadors, especially those from minority backgrounds who may already face workload challenges, places an unfair burden on them. This approach can lead to their disengagement, potentially undermining long-term diversity goals. Focus areas could include:

- **Collective responsibility:** Institutions should foster an environment where the responsibility for outreach and diversity initiatives is shared collectively across departments and roles, rather than resting on a few committed individuals. This can help distribute workload more evenly and integrate DEI efforts into a broader institutional framework.
- **Institutional support:** Universities could provide formal support and resources for outreach activities, moving beyond volunteer efforts to ensure sustainability and effectiveness. This support should include administrative backing, dedicated coordinating roles or teams for outreach across the institution.
- **Appropriate compensation:** Individuals involved in EDI efforts, especially those from ethnic minority backgrounds, should be fairly compensated for their contributions. This compensation recognises the value of their work and encourages ongoing participation.

Adopting these measures ensures that outreach is effectively managed and that those contributing to these critical efforts are adequately supported and valued, helping to drive sustained progress in EDI.

In conclusion

Adopting the approaches above will help to improve diversity and inclusion through outreach and public engagement in natural and environmental science.

It is important to note that funders of natural and environmental science outreach are key players in tackling this challenge. They can set the strategic direction of outreach and public engagement through the specific scopes of funding calls. They can allocate appropriate long-term, funding opportunities aligned with EDI efforts to ensure institutions are supported to achieve their ambitions.