



Delivering net-zero,
transforming postdoctoral
development.

Equality, diversity and inclusion in research planning, proposals and practice

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C-DICE

Introductions

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Agenda



- Definitions – what do we mean by equality, diversity and inclusion?
- EDI in research planning – funder expectations and small group discussion of research scenarios
- EDI in proposals – how might you incorporate EDI into a grant application?
- EDI principles in practice – how do you put into practice what you planned and proposed?
- Q&A

- Opening reflection: Why is it important to consider EDI in your research?

EDI is an essential part of a healthy and lively research environment, because the greater the diversity of individuals and ideas in research, the more exciting, innovative and relevant that research can be.

Starting point: protected characteristics

It is against the law to discriminate against anyone because of a [protected characteristic](#):

- age
- gender reassignment
- being married or in a civil partnership
- being pregnant or on maternity leave
- disability
- race including colour, nationality, ethnic or national origin
- religion or belief
- sex
- sexual orientation

<https://www.gov.uk/discrimination-your-rights>

E.g., while **65%** of the STEM workforce in the UK are white men, only **27%** are women of *any* ethnicity. Disabled people of all ethnicities are underrepresented. <https://www.britishscienceassociation.org/Handlers/Download.ashx?IDMF=d7899dce-22d5-4880-bbcf-669c0c35bda6>

Equality / Equity

Equality

Treating everyone the same and giving everyone access to the same opportunities.

Equity

Creating fair access, opportunity and advancement for people from under-represented groups.

No single definition of ED&I. All definitions used in slides are from the UKRI glossary: <https://www.ukri.org/publications/ukri-glossary-of-edi-terms/ukri-glossary-of-edi-terms/>

Additional useful definitions from the University of Edinburgh can be found at <https://www.ph.ed.ac.uk/equality-diversity-and-inclusion/about-edi/what-does-equality-diversity-and-inclusion-mean>

- The fundamental point of **equality** is fairness: it's ensuring that individuals, or groups, are not treated less favourably because of their protected characteristics
- Equality also means equality of opportunity; that is, ensuring that anyone who may be disadvantaged gets the tools they need to access the same

opportunities as their peers.

- But treating everyone equally does not fully account for the fact that everyone is different and approaches a situation from their own unique starting point, **equity** does account for this.

Diversity

[**Recognising** and **valuing**] Individual differences between groups based on: abilities, age, disability, learning styles, life experiences, neurodiversity, race or ethnicity, class, gender, sexual orientation, country of origin, cultural political or religious affiliation [and/or] any other difference that exists.

Diversity is about recognising, respecting and celebrating each other's differences in the broadest possible sense.

Inclusion

The **process** of bringing people that are traditionally excluded into decision-making processes, activities or positions of power. It enables individuals or groups to feel safe, respected, motivated and engaged.

This involves actively creating an environment where everyone feels welcomed and valued and where everyone has the opportunity to participate – it doesn't mean that they *have* to participate, but they should be able to do so if they want to.

Inclusivity is about enabling and acknowledging contribution.

Why does this matter for your research?

Equal, diverse and inclusive environments foster exciting, innovative and relevant research. There is both a moral imperative not to exclude anyone from participating in or benefitting from research, as well as practical considerations around funder expectations.

Funder expectations, e.g.:

“The Academy strives to create cultures in which everyone can thrive, and we believe that diverse perspectives enrich our collective performance. **What does diversity and inclusion mean to you, and what are you and your team doing to address it?** Consider your team, collaborators and universities, the implications on your research design and topic and the overall contribution this will have on your success.” (RAEng Fellowship)

“EPSRC **expects that equality and diversity is embedded at all levels and in all aspects of research practice** and funding policy.” (EPSRC Programme Grant)

<https://www.ukri.org/councils/epsrc/guidance-for-applicants/types-of-funding-we-offer/programme-grants/>

<https://raeng.org.uk/programmes-and-prizes/programmes/uk-grants-and-prizes/support-for-research/research-fellowships/how-to-apply>

EDI in Research Planning

1: Develop an approach to embedding equality, diversity and inclusion (EDI) in the research lifecycle

2: Implement good practices in recruitment and/or selection processes to ensure diverse teams

3: Ensure diversity and inclusivity in all activities. For example, events, sandpits, summer schools and networking

4: Create an inclusive and accessible environment

5: Ensuring career progression and training for all members of the team

6: Inclusive research

[EPSRC's EDI expectations](#)

EPSRC EDI expectations: <https://www.ukri.org/wp-content/uploads/2022/03/EPSRC-240322-EPSRC-EDI-ExpectationsTable-FullVersion.pdf>

Scenario 1

HVAC and refrigeration systems project

You are employing a supermarket as a case study to implement a scheme that will enhance Heating Ventilation and Air Conditioning (HVAC) and refrigeration systems. To do this, you need to employ a postdoctoral research assistant. How would EDI considerations affect the process of recruiting for this position?

Always ask yourself '**how**' you will address an issue or implement change. Recognising a need is the first step but this should be followed with the intention to act on it.

Scenario 2

Decarbonisation of heating and homes policy group

You are part of a team researching policies to encourage people to decarbonise their homes predominantly through reducing energy consumption used for heating. How would EDI considerations affect your recommendations for policy change?

Always ask yourself **'who'** will be affected by your actions. Avoid assumptions about their needs and requirements, take the time to research and understand the impact of different circumstances.

Group activity

In your breakout rooms, reflect on the EDI considerations, possible barriers to inclusion, and the steps you could take to address them in one of the following research scenarios:

- Antimicrobial coatings
- Sensor-based human technology
- Complex shapes
- Quantum optics and photonics
- Autonomous vehicles

The full details of each scenario are on Mural. As a group, make some notes on Mural about how you would address the situation you've been given.

EDI Scenarios

1. Antimicrobial coatings

You have worked with a microbiologist to patent an antimicrobial surface coating that will reduce the spread of infections. To determine the marketability of this patent, you decide to create a focus group of potential industry partners and clinical and commercial users (potential customers). How would EDI considerations affect the recruitment and delivery of this focus group?

2. Sensor-based human technology

You are conducting research that concerns human interactions with technology, specifically sensor-based human technology. To conduct this research, you need to recruit participants to test this technology. How can you implement good practices in recruitment and/or selection processes to ensure diverse participation and how could you ensure their participation is recognised?

3. Complex shapes

You have conducted research with a PhD student examining novel representation techniques for complex shapes using algebraic geometry and approximation theory. As a result, you have been invited to present a poster at an international conference. You also plan to publish the findings after the conference. How would EDI considerations affect the creation of the poster and the subsequent publication?

4. Quantum optics and photonics

You are a field expert in quantum optics and photonics and have decided to set up a conference to network and showcase the research in your group. This conference will include keynote speaker presentations, sandpits and an open call for papers. How would EDI considerations affect the organisation and delivery of this conference?

5. Autonomous vehicles

You and your team are working on technology that will

automate the driving function of a car to remove people's variability in driving style with the aim of optimising energy usage over individual journeys. In your part of the project, you are using machine learning and artificial intelligence to investigate when a car should stop in an emergency. What EDI considerations should you consider to prevent your algorithm being biased?

EDI in Research Proposals (statements)

“Diversity and inclusion (D&I) are integral to how I have established the xxx Group at yyy. The group hosts 27 people from various backgrounds, countries, ethnicities and gender[s]. The group ethics are founded upon fairness, respect and integrity, and it is expected that everyone work together and support each other as the team expands.

Inclusion and acceptance are essential. D&I is more than ethnicity and gender, it is about being fair to everyone no matter who they are. Everyone has different skills, and my approach is to work with every individual to understand how their full potential can be reached, and to incorporate them into the team, so that they can grow as people and as researchers with an inherent support network.

A key part of D&I is mentoring and providing role models. [. . .] There are many different career paths in research, having both industrial and academic experience for providing examples when exploring different career options is helpful. [. . .] Inspiring students by showing the value of the work and their contributions to progress underlines that innovation often comes from collaboration and not competition.”

General rule: EDI statements should be concise and comprehensive, explaining both your **motivation** and your **plan for action** across the project as a whole (with concrete examples).

There is no such thing as perfect example, all have strengths and weaknesses.

This statement responds to the question ‘What does diversity and inclusion mean to you, and what are you and your team doing to address it?’

- The language is positive and inclusive, the idea of being a role model is important, and the vision is clear.
- But there need to be some more practical steps to achieve the vision (in addition to mentoring).
Whenever you propose to do something think ‘how’ you will do it. There is a balance required between understanding and conveying the ethos of EDI and

acting on it.

- If you find the word limit is a challenge, focus on concrete examples over more generic statements

EDI in Research Proposals (embedding)

Context/research environment:

Generic statement: “The Department of xxx at University yyy holds an Athena SWAN Bronze Award and our major partner leads an EPSRC Inclusion Matters award, dedicated to improving EDI within engineering and physical sciences.” [referencing current work in your department is okay but not enough in itself].

Project specific: “Our team will draw on existing expertise in this area to promote a culture of inclusivity through fair access to opportunities and training, ‘open doors’ policies, and ensuring every team member has a career development mentor in addition to their line manager.” [bring it round to **what** you will do]

Project/team management:

“Team members will be supported to become champions of EDI values through training and development in EDI policies by taking courses xxx, yyy and zzz, which include an emphasis on allyship and microaggressions. EDI will be a standing item on regular project meetings, all of which will be held at family-friendly times. Reverse mentoring will pair senior project staff with those from underrepresented groups to provide learning opportunities and to actively address challenges and enhance inclusivity.”

Context can be useful, e.g. the ‘generic’ statement above, but only if it’s then related to your own project/actions.

EDI in Research Proposals (embedding cont.)

Events/outreach:

Generic statement: “We will promote an inclusive culture at all events [. . .]” [go on to say **how** you will do this]

Project specific: “[. . .] by using transparent and inclusive processes to select speakers for our workshop series and proposed conference, paying attention to the accessibility of venues and minimising barriers to participation (including those related to caring responsibilities and cost).”

Dissemination/publication:

“In keeping with our commitment to the principles of open science, the software we will produce will be open source, made freely available via GitHub, and the data behind it will be held in an open access repository to facilitate reuse and ensure reproducibility by other researchers.” [positive language and concrete examples]

“We will promote the work of our team at a special event organised for International Women in Engineering Day. Team members proactively engage with relevant EDI groups, such as Equal in STEM, Women in Science and Engineering, oSTEM, LGBTQ+ STEMinar and BEaMS.” [This is a long list of examples; engage with events like this if they are relevant to the project but think carefully about them. Be realistic, not tokenistic.]

General rule: explain **how** you will address EDI in every section of your application to reflect the project lifecycle. Tailor it to your project just as you would do for impact activity (referring to your institution’s EDI policy is not enough).

As with the previous page, these are not examples of what to write, rather they are examples of things that have been written. That doesn’t make them exemplars. Always make your discussion of EDI relevant to your project, just as you would if you were designing impact activities.

EDI in Research Practice

- EDI considerations do not stop once you have been awarded funding
- Make space to talk about EDI in your team, with your supervisors/supervisees, with advisory boards and collaborators, and with research users
- Remember that no one has all the answers – creating a more inclusive research environment is a continual listening and learning process

Summary points:

EDI is everyone responsibility - be an explicit and active supporter of EDI

Recognise our own role in the EDI space – what can I do to remove barriers. Be prepared to always learn from others.

Everyone's voice is valuable – value all views and support to enable all view to be heard.

Fairness is everyone has access/support that is appropriate.

The underlying principles of EDI through working with colleagues from adverse background inclusively allows creativity to flourish and through this innovations to flow.

Allow the space and time to think. Could outcomes come from good planning.

What negative impacts and don't make assumptions. Sense check via EDI champions – nobody has all the answers

Use various process to support EDI, e.g. diverse panels, appropriate language, etc. How will things land – watch the negative impact.

Use a system approach for a balance and support.

Avoid tokenism

How to implement EDI in practice is key. Make sure this is clearly thought though and

be prepare to adjust plans when things need changing, through monitoring,

- Good actions come from good planning
- Creativity comes from difference
- Always think about 'how' you act to create positive change

Any questions?

Your next steps

Take some time after the session to reflect and think about your next steps:

- Has your response to the opening question ('Why is it important to consider EDI in your research?') changed?
- What are you going to **start**, **stop**, or **continue** doing in your research practice as a result of the session?

As you plan your next project ask yourself the following questions:

- **What** are the EDI implications of every aspect of your project? (not just recruitment, but the whole lifecycle: people management and training, meetings, events, activities, equipment use, accessibility, data sets, reasonable adjustments, working with collaborators, publishing and disseminating research, etc.) [note – this is not a finite list]
- **How** will you mitigate barriers in all of these areas?
- **Why** is it important that you act in this way?

Useful links

Further reading:

- Willis, Mehta, and Davis, '[Twelve Principles Trainees, Pls, Departments, and Faculties Can Use to Reduce Bias and Discrimination in STEM](#),' *ACS Central Science*, 6 (2020), 2294–2300
- British Science Association, [The State of the Sector: Diversity and Inclusion in the STEM Industries in the UK](#) (2020)

Toolkits:

- <https://www.edi-toolkit.org/>
- <https://www.rdsresources.org.uk/edi-toolkit>

Glossary:

- <https://www.ukri.org/publications/ukri-glossary-of-edi-terms/>

Funder policies:

- <https://www.ukri.org/about-us/policies-standards-and-data/good-research-resource-hub/>
- <https://www.ukri.org/about-us/epsrc/our-policies-and-standards/equality-diversity-and-inclusion/expectations-for-equality-diversity-and-inclusion/>

Planning research and events:

- <https://www.sshrc-crsh.gc.ca/funding-financement/nfrf-fnfr/edi-eng.aspx#4a>
- <https://www.lms.ac.uk/adviceondiversityatconferencesandseminars>



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Upcoming C-DICE Events and Opportunities

Sustainable Construction Masterclass Series (cont'd) – 9 Nov onwards

Dragons' Den – Designing a Business Case in a Day – 9 Nov

Research Technology Development Workshop – 24 Nov

ECR Net Zero Conference – 30 Nov to 1 Dec

Video Impact Workshop – 1 Dec

Interview Skills workshop (supporting Fellowships) – 14 Dec

C-DICE Fellowship Info Webinar – 11 Jan 2023

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