# Draft Good Research and Innovation Practices (GRIP) Policy

NB. This text comprises only the policy elements, excluding the supplementary information, advice and guidance (full version can be seen here).

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# Policy Introduction and Definitions

## What is this Policy for?

The University aims to enable and support ambitious research and innovation activities of exceptional quality, that are carried out with honesty, rigour, transparency, care and respect and accountability.

The GRIP policy supports this goal by setting out best practice to achieve research and innovation excellence, through the promotion of integrity, collaboration, inclusivity and responsible conduct, and is designed to complement our Strategic Plan. The policy also sets out the behaviours, values, and norms that represents a positive research and innovation culture. These are in line with our priorities to create a supportive environment that fosters collaboration, increases equality, diversity and inclusion, and promotes wellbeing and sustainability. These values cohere towards our ultimate goal of achieving a positive and lasting impact on the world through our endeavours.

The policy also aligns with our public commitments to national and international Concordats, sector agreements, and to research funders, professional societies, regulators and publishers. The wide breadth of our research and innovation activity spans across disciplines and while this policy presents general best practice guidelines, it may need to be supplemented by other research and innovation-related policies, guidelines and principles. Links to additional guidance are provided within the relevant sections. These policies may not cover every scenario that may arise, but the University trusts its researchers and innovators to exercise their professional judgement in line with the principles of this policy and to raise and discuss any issues that arise.

The University acknowledges that good practice regarding the conduct of research and innovation is constantly evolving, with the emergence of new tools and models in how the outcomes of activities can be disseminated, and evaluated, and in how contributions are acknowledged and recognised. The University encourages its research and innovation community to keep up to date with these developments, and where possible, utilise them to enhance the visibility of, and trust in, our activity. This policy will be periodically reviewed to reflect such developments.

## Definitions

### Research

We use the Frascati Manual definition of research which is characterised as *"creative and systematic work undertaken in order to increase the stock of knowledge – including knowledge of humankind, culture and society – and to devise new applications of available knowledge"*. This work must be novel, uncertain, rigorous, systematic, transferrable or reproducible, and effectively shared.

### Innovation

We define Innovation as activity that enables the maximum possible positive impact of our research on society and the economy, that is achieved through developing effective partnerships and knowledge exchange. This activity uses the outputs from our research to explore and advance economic prosperity, health and well-being, sustainability, and the culture of our communities, from the global to the local. Innovation must be carried out responsibly to ensure that unintended negative impacts are avoided, that barriers to dissemination are minimised, and that the positive societal and economic benefits of our research are fully realised.

### Must and Should

Where a policy section says that researchers and innovators:

- '**Must**' do something, it is mandatory for you to follow this part of the policy.

- ‘**Should**’ do something, it is recommended that you follow this part of the policy, but there may be circumstances where you can justify not doing so, or only doing so partially.

**Who does this policy apply to?**

This policy applies to anyone conducting or supporting research and innovation activity under the auspices of the University. This includes members of staff through to students at undergraduate level who are carrying out research as part of their studies, as well as anyone not directly employed by the University but with permission to carry out research and innovation activity on its behalf. It also includes researchers with honorary contracts and anyone publishing with an affiliation at the University. Professional Services staff must support researchers to uphold this policy.

It is the responsibility of all of those leading and undertaking research and innovation activities, and those supporting them in any capacity, to adhere to this policy, and to raise awareness of it, where possible.

**How to use this policy**

This policy comprises of 4 sections:

1. **Policy introduction and definitions**
2. **Research and innovation culture at the University**
3. **Planning and carrying out research and innovation activities**
4. **Outcomes of research and innovation activities**

Within each section are a number of policy topics that set out expectations for our research and innovation community carrying out activity within those areas. These do not necessarily need to be addressed in a linear fashion, as some topics will have differing relevance depending on the type of activity being considered.

# Research and innovation culture at the University

## Collaboration, collegiality and team science

You **must** promote a collaborative and supportive culture through respectful and inclusive collaborative working.

At the University, this encompasses:

- **Generous research leadership**: this is fundamental to a dynamic research and innovation environment. Generous research and innovation leaders **should** facilitate forms of collaboration that recognise the aspirations of all team members and values their contributions. This includes supporting leadership opportunities for less experienced collaborators, and consideration for succession planning.
- **Inclusive research and innovation:** you **should** recognise that different stakeholders and collaborators bring with them different priorities, commitments and expertise that span intellectual, pragmatic, professional and policy priorities. This approach takes account of, and respects, disciplinary differences.
- **Recognising that tensions may arise:** you **should** use these opportunities as resources for change and conversation rather than problems. You **should** be mindful that competing drivers and priorities can be held in place through negotiation and collegial ways of working; ensuring that the ambitions of different collaborators are valued, respected and addressed. For example, non-academic collaborators will often have their own objectives and priorities that you **should** recognise and attend to.
    - **Equality, Diversity and Inclusion should inform high quality collaborative research.** In order to promote collegiality and partnership; you **should** consider the ways in which diverse representations of gender, race, age, place, disability, sexuality and class improve the quality of the research.

- **You should avoid tokenistic forms of collaboration and partnership** and explore workable models of co-production where collaboration truly brings in the perspectives, skills and expertise of academic and non-academic collaborators and where collaborators are appropriately remunerated for their work.
- You **must** anticipate, reflect on and engage with the ethical and societal issues involved in research and innovation activities. Where appropriate, this may include engagement with stakeholders and the public.

## Generous research leadership

Research leaders, particularly those well-established in their fields, **must** act generously. This entails leading selflessly, putting others' first, leading for others' development and benefit, rather than for your own individual gain or kudos alone.

These attributes are an important part of our **Academic Career Pathway (ACP)** framework which recognises that generous leadership is manifested not just in a separate 'citizenship' category, but across all the different constituents of the research endeavour – e.g. grant capture, impact, outputs.

As a generous research leader you **must**:

- **Demonstrate a commitment to nurturing the research careers of others,** investing time to understand the developmental needs of colleagues in the team (for example, understanding the ACP, the Concordat to Support the Professional Development of Researchers, and effectively engaging in SRDS processes).
- **Ensure that credit, reward, and recognition for research achievements are shared, acknowledged and correctly attributed**.
- **Build strong levels of openness and trust** among colleagues, including the willingness to openly share networks, contacts and information to benefit those earlier in their career.

- **Demonstrate self-awareness and reflection** of gaps in your own leadership style, capacities and skills and seek to ensure these are compensated for in the building of research teams and the contributions and empowerment of others.

## Environmental impact/net zero

Research and innovation needs to consider its environmental impact and ways to change our practice towards net zero.

You **must** take all possible steps to reduce the environmental impact of research and innovation activities, in line with current norms about what is acceptable and what is not acceptable from a sustainability perspective.

Consideration **must** be given to the following:

### 1. Use of buildings

How we use buildings affects energy and resource consumption. You **must** ensure that the use of space and energy is maximised for research and innovation purposes and evaluate the sustainability of infrastructures.

### 2. Travel

University travel is a sector-wide challenge, but you can influence travel decisions, starting with reflecting on whether travel is necessary. You **must** establish a scale of priorities for travel which is necessary for your outcomes (e.g., fieldwork), travel which enhances the dissemination of findings (e.g., conferences), travel that contributes to building partnerships (e.g., University meetings), and finally, travel that contributes to scholarship (e.g., editorial meetings or research funding committees). Where possible, you **should** provide options for online attendance to events to reduce the need for others to travel. However, it is important to recognise that the needs will differ at different career stages and moments during the cycle.

### 3. Reduce, reuse and recycle

You **must** actively participate in schemes to reduce, reuse and recycle waste. When possible, for example, you can aim to prioritise lower emission choices by looking into the food provider, the packaging available, and the manner in which it is provided.

### 4. Procurement

When you consider supply chains and procurement, you **must** include sustainability in your selection criteria, when relevant, such as, circular economy principles to cut wastage.

### 5. Sustainability

You **must** commit to sustainability practices within the University and in relation to the wider University community, identifying further opportunities to walk together towards net zero.

## Researcher development

**Principles you must follow :**

- Acknowledge the researcher obligations under the Concordat principles of environment and culture, employment and professional and career development.
- Understand the University expectations and responsibilities of research staff to uphold the Concordat as listed in the Charter for Early Career Research Staff.
- Identify support for your own professional and career development engaging in a minimum of one day a month (7 hours) development which should be discussed at least annually through SRDS, including undertaking relevant SRDS training. Support is offered by the Researcher Development Team.

**Principles managers / supervisors of researchers must follow :**

- Acknowledge the managers of researchers obligations under the Concordat principles of environment and culture, employment and professional and career development.
- Adhere to the University expectations and responsibilities of line managers to develop their research staff to uphold the Concordat as listed in the Charter for the development of Research Staff by their line managers and the University.
- Undertake relevant leadership**,** management and equity, diversity and inclusion training and development opportunities so you can manage researchers effectively and fulfil your duty of care.
- Ensure all research staff are provided with a minimum of one day per month time allocation for professional career development supporting researchers to balance delivery of their research and their own professional development.
- Identify opportunities, allocate time and give recognition for researchers to develop their own research identity and broader leadership skills**.**
- Ensure career development conversations are held as a minimum annually, within SRDS and supervision meetings, and relevant SRDS and supervision training is undertaken.
- As a supervisor to PGR students, engage with ongoing professional development as a mandatory requirement of your role, forming part of the licence to supervise.

## Peer review

The University's requirements for Peer Review, whether internal or external to the University, are:

## 1. Undertaking Peer Review

When undertaking Peer Review, whether internally or externally to the University, you **must**:

1. Openly and honestly declare any real or potential conflicts of interest, and where appropriate, withdraw or decline involvement.
2. Be aware of the limits of your expertise in relation to the review. Avoid participating if the submission is outside your area of expertise, or if more marginal, clearly state the limits of your knowledge. You **must not** use generative AI in place of your own assessment. You **should** take part in any relevant training that may support the review process.
3. Respect the confidentiality of the peer review process and the rights of researchers to their original ideas, data, and analyses.
4. Set aside sufficient time to undertake the review in a rigorous and timely manner, and consider this when making decisions on peer review invitations.
5. Provide honest, rigorous, and engaged reviews that meet the requirements and criteria of the specific peer review process.
6. Undertake relevant training to increase understanding and awareness of the potential for bias.
7. Ensure that reviews are written respectfully, constructively and clearly, with appropriate justification of any recommendations or conclusions.
8. Raise any ethical or integrity concerns relating to the reviewed research with the appropriate body.

## 2. Designing and Managing Peer Review

The University and researchers, when designing and managing peer review internally to the University, **must:**

1. Consider the purposes of the peer review process, ensuring that its design matches its aims. Ensure that anonymity of reviewers and researchers is appropriate to the purposes of the peer review process, and that reviewers have suitable expertise for the task.
2. Ensure that there are procedures in place to identify, raise, and manage conflicts of interest.
3. Uphold principles of confidentiality, and ensure that reviewers are aware of their responsibilities.
4. Prepare and deliver suitable training in best practice for reviewers, including on the ethics of peer review and the potential for bias.
5. Evaluate internal peer review processes to ensure that they meet standards of fairness, equality, and accountability.

## Open research (Open science)

### What is Open research?

‘Open Research is the practice of making the processes and outputs of research transparent and freely accessible, whenever possible...’

The goals of open research are to support dissemination, interpretation and re-use of research; promote research rigour, reliability and reproducibility. This allows others to validate and contribute to our research, and plays a key role in promoting collaboration within, and across disciplines.

You **should** consider how these goals can be achieved for your own research. Examples of commonly used open research practices are study pre-registration, open study materials/resources, open data, preprints, and open access publishing.

Many of the benefits of open research arise from the process of working openly, rather than solely sharing the output. For example, improved research data management results from planning to share data early in the research process.

Where there is a choice between open and closed research practices, you **should** choose open practices (e.g. where there is an option to use proprietary or open source software, you should choose open source software).

**Disciplinary differences**

The University recognises the diversity of practices used by researchers and the additional challenges faced in areas where open research practices are less established. The implementation of open research will look different depending on the discipline or research practice. For example, some open research aspects may be normalised or mandated in your discipline. Conversely, some of these practices may not be directly applicable. As such, you **should** follow and contribute to developing best practice within your discipline.

For example, sharing data is not always legally, ethically, or technically possible. In this case, you **should** consider what could be shared - *as openly as possible, but as closed as necessary*. This could include sharing a subset of the anonymised data, creating and sharing metadata, and/or sharing other research materials/resources. Sharing these additional materials may not be the norm in your discipline, but could support the previously mentioned goals of open research.

**Stakeholder involvement and communication**

Conducting research more openly often requires working with multiple stakeholders in the research ecosystem including research support colleagues, collaborators, participants, funders, journals, data repositories, professional bodies and learned societies. You **should** contribute to advancing open research practice in their discipline through these networks.

Research participants are important stakeholders and, where possible, you **should** inform them about the outcome of research in which they have taken part, and acknowledge their contribution. Depending on the timescales of your research, it may be appropriate to give interim updates to participants. Details of this **should** be planned during the design stage of the research, and adequate funding included in your application. The Participant Information Sheet should contain details of how participants will be kept informed.

## Academic freedom and freedom of speech

You **must** familiarise yourself with, and adhere, to our Code of Practice on Freedom of Speech and Academic Freedom.

## Poor research practice and research misconduct

You **must** be transparent about issues, errors and shortcomings in your research and **must** encourage a culture in which research integrity problems can be discussed, resolved and learnt from. You **must** not victimise or act in detriment towards others who raise concerns.

Where there is disagreement on matters that could affect a project's integrity you **should**, acting reasonably and professionally, attempt to find a mutually acceptable solution. This may involve mediation from a mutually acceptable third party if you do not feel comfortable raising the issue yourself; this can be supported by colleagues in HR and/or the Research & Integrity Manager in Research, Partnerships & Innovation.

### Research misconduct

The University uses the Concordat to Support Research Integrity's definition of research misconduct, namely that "research misconduct constitutes the behaviours and deliberate actions that fall short of the principles in Commitment 1 of the Concordat, occurring at any point in the research lifecycle." and that "honest errors and differences in, for example, research methodology or interpretations, do not constitute research misconduct."

In contrast, Questionable Research Practices are defined as "minor infractions or research practices, including avoidable errors, which fall short of the definition of intentional research misconduct".

Where you suspect research misconduct may have occurred, you **should** report it under the relevant procedure. For cases involving members of staff, this is the Research Misconduct Procedure.

# Planning and carrying out research and innovation activities

## Designing research and innovation projects

You **should** use this checklist via the drop-down link below that has been adapted from a resource developed by the UK Research Integrity Office, which summarises the key points of good practice in research applicable to all disciplines. It is divided into three parts corresponding to different stages of a research project, from start to finish, although for simpler projects not all checklist items may be relevant or applicable. The checklist **should** be completed in conjunction with any relevant sections of the GRIP policy, and any other University guidance and/or external legislation appropriate to the project. You **must** maintain compliance with relevant

laws (including in overseas countries, where applicable) and comply with the contracted terms and conditions of your funder(s).

## Planning for impact

You **should** plan for impact at the start of your research and review these plans throughout projects to ensure that they are engaging with the most appropriate individuals/organisations/groups, and to allow the collaboration to identify the most appropriate activities to realise impact.
You **should** consider including building impact activities into your applications for research grants, for example, incorporating resources to enable public engagement.

### Identifying stakeholders & beneficiaries

You **should** identify those who are likely to benefit from the project (beneficiaries). These groups can help with mapping out routes to anticipated impacts and avoid any unintended consequences. Planning for long-term impact will also help identify stakeholders (non-academic individuals/organisations/groups) who may be key to delivering change externally. Early planning conversations with these groups can help incorporate their goals and any capacity building required to better utilise the outputs of the project (see the Equitable External Collaboration section for more information).

### Routes to impact

You **must** consider the most appropriate route to impact. Knowledge Exchange activities, including Public Engagement & Involvement, Commercialisation, and dissemination/promotion are all routes that can support you with delivering successful impact from your work.

Collaborating with other researchers outside of your discipline can be a beneficial way of expanding the potential scope or reach of your impact. You **should** talk to collaborators about whether interdisciplinary research may require ethical review.

### Public communication

When involved in public dissemination or discussions, you **must** be aware of the limits of your professional expertise. For example, during public discussions about the importance and potential application of research results, you **should** communicate within areas of your professional expertise and, if necessary, clarify when you are speaking as a professional and when you are speaking in a personal capacity.

### Measuring and evidencing impact

You **should** have early conversations with partners and stakeholders to agree how and when project outputs and outcomes are reported back. This can help manage expectations and maintain the relationship once the project is completed. You **should** also talk to partners about whether you would like them to provide you with information on their uptake and use of the project outputs and how this information will be stored and used.

## Handling competing interests

Throughout the lifecycle of a research project, you **must** disclose competing interests to your line manager or Head of School and discuss and document how these interests will be managed. In many cases, transparent declaration (for example, in grant applications, participant information and research outputs) and

open research practices will be all that is needed.  Where disclosure does not adequately manage the perceived risk to the integrity of the research, mitigations could include:

- Modifying the project's plan
- Delegating some research activities to an independent party
- Severing relationships that create competing interests
- Resolving not to act as a particular individual's supervisor
- Divesting or placing in trust certain financial interests
- Standing aside from any involvement in a particular project

## Ethical practice in research involving human participants, personal data and human tissue

You **must** follow ethical standards to protect the dignity, rights, safety and wellbeing of those participating in research, in line with the Ethics Policy Governing Research Involving Human Participants, Personal Data and Human Tissue.

Some funders also require specific processes in terms of ethical review, so you **should** seek advice and familiarise yourself with the terms and conditions of your grant awards.

You **should** be proactive in seeking out opportunities to develop your ethical knowledge through training and development, and familiarise yourself with the resources provided by the University.

The wide breadth of research undertaken across the University means that ethical issues may vary. As such, you **should** be aware of any specific ethical guidance relevant to your subject area and **should** consult with colleagues who have particular knowledge and expertise.

During the initial planning stage of their projects you **must** consider any ethical risks associated with your activities and how these can be mitigated. You **must** also ascertain whether formal ethical review is required. If ethical approval is required then this **must** be carried in accordance with the approval procedure. If there is any doubt about the need for ethical approval, then advice **should** be sought from your local principal ethics contact, and guidance is also available on the research ethics web pages. If you are a student then you **must** consult your supervisor in the first instance.

As research projects progress, new and unplanned circumstances can emerge that raise ethical issues that may not have been considered at the point of the initial ethical review. In such cases you **must** update project plans and seek advice, as it may be necessary to amend and resubmit the ethics application for further review to take account of the new circumstances.

**Health and social care related research**

If you are planning projects in UK health and social care settings, you **must** determine if your research falls under the remit of the University's Research Governance Procedure.

## Managing research data and code, and FAIR principles

Managing research data is the responsibility of all researchers and additional support staff. It's important that everyone knows their responsibilities and expectations around the data they create or work on. You **must**:

- Create a data management plan. DMPOnline is a tool that helps with the creation of plans and has both funder based and generic templates.

- Manage personal data, including pseudonymised data, in line with the University's Ethical practice in research involving human participants, personal data and human tissue policy and data protection legislation.
- Consider any contractual or data licensing and sharing issues at the start of a research project and that the necessary agreements are put in place in a timely fashion and adhered to, including being aware of export control legislation.
- Consider the potential commercialisation opportunities in relation to the data, and whether advice in relation to intellectual property protection should be sought.
- Ensure ownership is transferred when staff leave the University, or move roles, so that any research data does not become orphaned (no current member of the University has access to the data). See Joiners, Movers, Leavers policy.
- Confirm that any tools or platforms that are used have been sufficiently checked and approved by the University, or secure such approvals.

In addition you **must** suitably store and document (both during and after a project) all data and make it available to others where possible. Doing so increases its potential impact and value, ensures adherence with funders policies, and brings data inline with the University's open research statement.

## Equitable external collaboration

You **should** work to ensure equitable partner involvement throughout the lifetime of a research or innovation project.

Some core features of equitable external collaborations for you to consider include:

**You should develop a shared understanding around the aims of the collaboration:**

Mutual understanding is a prerequisite for equitable collaborations. It also engenders trust, which is an essential component of successful partnerships. Partnership agreements can be developed and documented in Memorandums of Understanding (MOUs), which might include details on the aims and scope of project work, remuneration, confidentiality, Intellectual property, publishing and so on. You **should** consult the RPI Contracts Team who will be able to advise on the content and process. MOUs work best when they are revisited and adapted as partnerships develop.

**You should be flexible and willing to negotiate if circumstances change:**

Partnerships necessarily include collaborators from different personal and professional standpoints, with their own skills, priorities and expectations. Equitable partnerships are *sensitive to* and *accommodating of* this fact. You **should** work to enable flexible working environments that can be responsive to the shifting demands and expectations that collaborators face.

**You should ensure resources are effectively shared, including fairness in remuneration:**

Equitable partnerships deliver mutual benefits to all parties. The nature of benefits can vary widely. New knowledge and understanding may constitute a benefit, for example. However, it is equally important for partnerships to deliver tangible and material benefits, through fair funding and the sharing of resources. These elements **should** be agreed with partners at the planning stage of the project. The National Institute of Health Research (NIHR) has developed useful good practice guidance for payment and recognition in research.

**You should establish democratic ways of working to ensure stakeholders have a voice:**

Democratising partnership is about ensuring that all parties share *influence* over the direction and implementation of a project. You **should** recognise that partnerships are often characterised by asymmetries of power and resource that can compromise equity. You **should** establish democratic ways of working to create space for *all*

*parties* to be respected and enabled in ways that can influence a project's direction and priorities.

**You should reflect and act on any new ethical issues that arise as the collaboration develops:**

Ethics in practice 'go beyond' procedural ethics, by recognising the unpredictable and unfolding nature of relationships. Realising equitable partnerships requires an ongoing commitment to ethics so you **should** maintain a dialogue as partnerships develop. Achieving this might involve regular meetings, for example, to reflect collaboratively on the experiences of all collaborators and make any necessary adjustments to shared rules and expectations.

**International collaboration:**

International collaboration can raise particular challenges and require care to ensure that the core features of equitable partnerships are achieved in practice. Some of the challenges that can arise include real or perceived power imbalances (particularly if the research is taking place in a resource-poor setting); differences in laws, norms and customs; language barriers; and different incentive structures. Ensuring clear expectations and agreed understandings of roles and responsibilities are vital from the earliest stages. To ensure that individual and institutional reputations are protected, and that the international collaboration is effective in delivering its aims, you **should** regularly reflect on the progress of the collaboration and whether it is achieving its aims, and create spaces for open conversations about whether the partnership is being experienced in a way that feels fair and equitable to all participants. For those working in lower or middle income countries, for instance, there are several good practice guides that can shape ethical conduct.

## Responsible use of facilities and resources

You **must** work collaboratively with specialists responsible for facilities and resources, complying with rules and guidance on access and involving them in the research and innovation process.

When accessing resources or facilities at the University, then responsible use of these would include:

1. You **should** contact the facility manager, or other responsible person, before use. Depending on the facility or resource, this could be at the grant writing and planning stage, or during project/experimental design. When writing grants for facility acquisition, you **must** contact your Head of School to obtain approval
2. If a grant is awarded, you **should** contact the facility manager/person responsible to inform them. Planning access to the resources in more detail is a key expectation of researchers
3. You **must** ensure that any safety documentation is completed by the person responsible for the work, and reviewed and approved by the Principal Investigator (and sometimes the H&S officer of the School). The responsibility for the work lies with the Principal Investigator and ultimately with the Head of School
4. You **must** ensure any users complete the relevant induction and training according to the local requirements of the facility
5. You **should** provide the facility manager/responsible person with any cost codes or other information required
6. You **must** follow the rules of the facility
7. You **must** let the Principal Investigator and/or H&S officer know if things go wrong: we understand that mistakes can happen, or instructions forgotten, so please inform us of anything (no matter how minor) that might happen
8. You **should** consult with the experts within the facility to optimise your results
9. You **should** credit the facility and its staff where appropriate when sharing your results. See CRediT – Contributor Roles Taxonomy (niso.org)

# Reproducibility

You **should** support reproducibility by documenting and sharing your research methods, analytical workflows and computational dependencies and follow best practices in planning and reporting research in a transparent and open way to support replicability and generalisability, as appropriate to your discipline.

### Method reproducibility

This requires that the research procedure deployed is recorded and shared in a way that allows others to repeat it. You **should** review the method description and share, via online repositories, documentation which will support methods' repeatability.

### Analysis reproducibility

This applies to research which produces quantitative data. Analysis done by code is easier to apply consistently, naturally documents itself, and is more easily shareable. You **should** demonstrate analysis reproducibility by sharing any code that you have used.

### Computational reproducibility

If you have used software in your research you **should** consider computational reproducibility. This is the idea that the software environment and dependencies will be captured so that a piece of software, such as a script for analysing research data, can be run in the future with the same outputs.

### Replicability

This is the idea that a phenomenon can be reproduced, using the reported method and analysis. You **should** support replicability of your results by following best practice in planning as well as reporting research. This includes statistical power analysis and trial registration, where appropriate.

### Generalisability

Beyond the more narrowly defined scope of empirical replicability is the idea of generalisability. Generally, though, you **should** support the audit, reapplication, testing, extension and adaptation of your research by following transparency and open research principles.

# Outcomes of research and innovation activities

In this section, research outputs refers to the outcomes of a research and innovation project, and can include (but is not limited to) publications in various forms, datasets, software code, performances and exhibitions.

## Authorship and acknowledgement

### Principles

You **should** discuss and agree (preferably in writing) how contributors will be credited on projects before any work is undertaken, and revisit those discussions if plans change.  All those who have contributed to the project **must** receive appropriate credit, regardless of their employment status and including collaborators outside academia.

Recognising the positive impact it may have on their careers, research leaders **should** be generous in offering opportunities to researchers to be named on outputs if they have made a contribution.

You **must** include 'The University of Sheffield' in your affiliations on research outputs; institutes and research centres can be listed in addition to this.

### Authorship

To be an author, you **must** meet the authorship criteria of the publisher and you **must** agree to take public responsibility for the entire output. This means that Generative AI tools cannot be considered authors. Where no other authorship criteria are specified by the publisher, the University uses the ICJME definition of authorship, which requires that an author has undertaken:

1. Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work
2. Drafting the work or reviewing it critically for important intellectual content.
3. Final approval of the version to be published
4. Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

You **must not** deliberately deny potential authors the opportunity to fulfil some of these criteria (for example, by avoiding seeking final approval of the version to be published from a researcher who satisfies the other three criteria).

You **must not** use any of the following practices:

- Ghost authorship, where individuals who have made substantial contributions to the output and meet the criteria for authorship are omitted from the list of authors, unless that individual's life is put at risk by being named as an author.
- Gift authorship, where individuals who do not meet the criteria for authorship are added to the list of authors.
- Guest authorship, where individuals who have made little or no contribution to the output are added to the list of authors in an effort to boost its credibility.

If relevant, you **must** make decisions on the ordering or designation of authors in a fair and transparent way; if appropriate, research groups **should** consider varying these between multiple outputs to avoid undue prominence getting accorded to particular authors, such as those whose last names come first in the alphabet.

In the output, you **must** acknowledge those who have made a contribution to the project but do not meet authorship criteria.

You are encouraged to use the CRediT taxonomy to describe contributions to your outputs.

**Investigatorship**

You **should** list researchers who have made a contribution to the design of a project and are involved in the management of the project throughout its lifecycle as investigators on projects, for example on grant applications. The Principal Investigator takes overall responsibility for the delivery of the project.

## Publications and licensing

You **should** follow the University's commitment to Open Research which sets out expectations on making research outputs openly available. For journal articles, monographs, book chapters and conference proceedings you **must** follow the University's Research Publications and Copyright Policy, which means you **should** make these outputs open access as soon as possible and with a Creative Commons licence. Under the University's commitment to DORA, in assessing publications, the content of an output is considered much more important than its venue of publication or associated metrics. You **should** therefore choose the most appropriate venue for your publication based on its content and potential audience rather than using, for example, journal-based metrics such as the Journal Impact Factor.

## Effective IP management

You **must** work together with the University research community to manage research intellectual property (IP) effectively, ensuring its protection while maintaining accessibility and integrity.

### Your responsibilities

Researchers play a crucial role in optimising the impact of their work and you **should** contribute by:

- Taking into account your ambitions for publication, knowledge exchange and commercialisation in your Data Management Plan.
- Prioritising the integrity and accessibility of research IP.
- Actively seeking guidance from the Library, Research Support, Knowledge Exchange, or Commercialisation Teams as needed to ensure appropriate intellectual property protection is in place when engaging in conversations, collaborations or seeking grant funding.
- Being mindful and respectful of restrictions imposed by your funding agreements, collaboration partnerships and national security requirements.
- Supporting the formal registration of IP, where appropriate.
- When publishing articles, conference proceedings and monographs, seeking to retain copyright of your research rather than signing it over to a publisher.

## Assessing research quality

When assessing the aggregate quality of research from an individual researcher or research group, assessors **must**:

1. **Assess the things we value**

We assess research to achieve a specified purpose and to reach good decisions in line with our definition of research excellence. You **must** choose your assessment criteria and approach in support of this purpose, rather than relying on things that are easy to measure. As a signatory of DORA, you **must** assess research on its own merits rather than on the venue in which it is published.

2. **Base your assessment primarily on expert judgement**

   You **should** only assess research in areas in which you have disciplinary expertise. You **must** only use metrics and indicators to inform this expert judgement alongside relevant qualitative material. You **must** not use artificial intelligence technologies to replace this expert judgement.

3. **Give people a fair chance**

   Recognising that metrics and indicators are not neutral and can reflect biases in academia and wider society, you **must** plan how factors such as disciplinary differences, gender, ethnicity, varying career paths and work patterns **should** be considered in assessment. You **must** only use comparators and benchmarks that are appropriate and realistically achievable for the assessed population.

4. **Consider all forms of scholarship**

   In line with DORA, you **should** consider the value and impact of all research outputs, not just publications, and to consider a broad range of impact.

5. **Act transparently**

   You **must** inform those being assessed of the criteria being used before an assessment takes place and give researchers the opportunity to correct and comment on information used in assessments.

6. **Use reliable data**

   Where metrics and indicators are used in assessment, you **must** ensure that:

   - data sources are relevant and have good coverage of the disciplines being assessed;
   - they don't rely on a single measure or indicator;

- they avoid using false precision and drawing inferences from small sample sizes;
- they do not use journal-based (e.g. Journal Impact Factor) or author-based (e.g. h-index) metrics as a proxy for the quality of individual articles.

7. **Promote integrity**

   Research excellence depends on research integrity; good metrics mean nothing if derived from research involving poor practice. When setting criteria for research assessment, you **should** consider how those criteria uphold research integrity and avoid incentivising poor practice.

8. **Review and improve assessment practices**

   You **must** regularly reflect on whether assessment processes are helping to make good decisions and whether they produce any unintended consequences (for example, by incentivising researchers to chase certain metrics). You **should** seek feedback from those involved in the process, including those being assessed, and provide a mechanism for raising concerns when these principles are not upheld.