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Code of Practice for Research

Promoting good practice and preventing misconduct

Accessible Edition

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Introduction

The UK Research Integrity Office's (UKRIO's) Code of Practice for Research (also referred to as the Code) has been designed to encourage good conduct in research and help prevent mistakes and misconduct, to help organisations and researchers to conduct research of the highest quality and sustain a healthy research culture. It provides general principles and standards for good practice in research, applying both to individual researchers and to organisations that carry out, fund, host, or are otherwise involved in research.

The Code applies to all subject areas and does not attempt to micromanage research. Recognising that many forms of guidance already exist, our intention is that research organisations may use the principles and standards outlined in this Code as benchmarks when drafting or revising their own, more detailed, codes of practice. No single publication can expect to cover the nuances of all types of research in all disciplines; therefore, the Code should not be seen as prescriptive but as a set of guiding principles and standards to inform the management and conduct of research.

The Code covers areas of good practice in research typically included in organisational policies for the conduct of research, drawing upon existing good practices and the experiences of UKRIO in addressing good research conduct and research misconduct. Detailed guidance is given on core standards for good practice in research, but particular attention has been paid to areas where UKRIO has most often been approached for guidance, in the hope of passing on lessons learned to the research community.

The Code complements existing guidance on research conduct, including The Concordat to Support Research Integrity ([Reference 1](#)) and materials from regulators, learned societies, research funders, publishers, and others. Similarly, the Code complements organisational policies, such as those for health and safety, raising concerns at work, management of finances or of intellectual property, freedom of speech, and does not seek to replace them.

Using the benchmarks in this Code can help research organisations to fulfil the requirements of regulatory, funding, and other relevant bodies, and ensure that important issues are not overlooked.

UKRIO recognises that there are many organisations which issue guidance on the conduct of research to the UK research community. UKRIO works with a wide variety of organisations aiming to streamline guidance on good practice in research, to ensure clarity for the research community and avoid duplication of effort.

How to use this document

The Code is organised into three sections as follows:

- **Section 1**
Recommended Checklist for Researchers – a checklist summarising the key points of good practice in research that applies to all subject areas. The Checklist is based on the more detailed Standards given in section 3. Researchers should only complete the checklist after reviewing the Standards and with advice from professional services.
- **Section 2**
Commitments – refers to the Commitments from The Concordat to Support Research Integrity, which define the responsibilities and values in the conduct of research by both researchers, research organisations, funders, and publishers.
- **Section 3**
Standards for Organisations and Researchers – provides Standards for good practice in research that researchers and research organisations should comply with. The Standards apply to all disciplines of research, but organisations may wish to expand upon them by offering more detailed guidance for certain subject areas or types of research.

It is the responsibility of the organisation to determine the best way to put the promotion and support of good research practice into operation. Only through the endorsement and support of good practice in research at the highest level and implementation through education, training, and supervision, can researchers become aware of their individual responsibilities and the collective responsibility they have to their research organisation and the wider research community.

For the purposes of this Code, “**research**” refers to the definition used by the 2021 Research Excellence Framework (REF 2019/01 Guidance on Submissions, January 2019, revised October 2020, Annex C, [Reference 2](#)):

“...a process of investigation leading to new insights, effectively shared.

It includes work of direct relevance to the needs of commerce, industry, culture, society, and to the public and voluntary sectors; scholarship; the invention and generation of ideas, images, performances, artefacts including design, where these lead to new or substantially improved insights; and the use of existing knowledge in experimental development to produce new or substantially improved materials, devices, products and processes, including design and construction. It excludes routine testing and routine analysis of materials, components, and processes such as for the maintenance of national standards, as distinct from the development of new analytical techniques. It also excludes the development of teaching materials that do not embody original research.*

It includes research that is published, disseminated, or made publicly available in the form of assessable research outputs, and confidential reports...

**Scholarship for the REF is defined as the creation, development and maintenance of the intellectual infrastructure of subjects and disciplines, in forms such as dictionaries, scholarly editions, catalogues and contributions to major research databases.”*

REF 2019/01 Guidance on Submissions (Annex C, 1-3)

Similarly, for the purposes of this Code,

- **“Organisations”** refers to any bodies which:
 - conduct, host, sponsor, or fund research;
 - employ, support, or host researchers;
 - teach research students; or
 - allow research to be carried out under their auspices.
- **“Researchers”** refers to any person who conducts or supports research *in any discipline*, including but not limited to:
 - an academic research staff;
 - an independent contractor or consultant;
 - a research student;
 - a postgraduate or undergraduate student conducting research
 - a research assistant;
 - a visiting or emeritus member of staff;
 - a member of staff on a joint clinical or honorary contract;
 - a technician; or
 - a member of professional services staff;

UKRIO will regularly review the Code and welcomes feedback from organisations and researchers on the current edition. Organisations and researchers should check our website for updates to the Code.

The website also provides information on how to contact UKRIO to gain access to independent, confidential, and expert advice and guidance on any issues relating to good practice, research culture and misconduct in research.

Section 1: Recommended Checklist for Researchers

The Checklist highlights the key points of good practice for a research project from start to finish and is applicable to all disciplines. Researchers must read the guidance in [Section 3](#) before completing this checklist. Two standalone versions of this checklist is available from our website:

- Standalone non-accessible version:
<https://ukrio.org/wp-content/uploads/UKRIO-Recommended-Checklist-for-Researchers.pdf>
- Standalone accessible version:
https://ukrio.org/wp-content/uploads/Recommended-Checklist-For-Researchers_Accessible.pdf

Checklist Begins.

Part 1: Before conducting your research

Bear in mind that, subject to legal and ethical requirements, roles and contributions may change during the research.

1. Does your proposed research address pertinent question(s) and is it designed either to add to existing knowledge about the subject in question or to develop methods for research into it? – inclusive of:
 - Repeatability;
 - Reproducibility;
 - Replicability;
 - Trustworthiness;
 - Credibility;

- Authenticity; and
 - Meta-research
2. Is your research design and methodology appropriate for your research question(s)?
 3. Will you have access to all the necessary skills, training and resources to do your research?
 4. Have you done a risk assessment and due diligence to check for and mitigate:
 - a) Potential risks to
 - Your organisation?
 - The environment?
 - The research? Or
 - The health, safety and well-being of researchers and research participants?
 - b) Potential risks to research innovation?
 5. Will your research comply with Trusted Research guidelines to protect yourself and the research from potential exploitation, misuse, and theft?
 6. Have you signed all contracts (including collaboration agreements if relevant) before commencing the research and will your research comply with contractual and financial guidelines relating to the project?
 7. Have you agreed the intellectual property?

- 8.** Has your research had any necessary ethics review, especially if it involves:
- Human participants;
 - Human material;
 - personal data;
 - animals (inclusive of non-ASPA, i.e., animals that do not fall under the Animal Scientific Procedures Act 1986);
 - animal materials;
 - microbiomes;
 - environmentally hazardous agents; or
 - dual use research of concern (DURC)?
- 9.** Will your research comply with all legal (including health and safety) and ethical requirements and other applicable guidelines, including those from other organisations and/or countries, if relevant?
- 10.** Will your research comply with good practice requirements and where relevant, follow open research practices?
- 11.** Have you agreed how you will disseminate outputs (inclusive of journal articles, conferences, book chapters, pre-prints, registered reports, abstracts, etc.), authorship and contributorship?
- 12.** Have you considered how your research will comply with any monitoring, audit and data management requirements?
- 13.** Have you agreed on the roles of all the researchers and responsibilities for management and supervision?

14. Have all competing interests relating to your research been identified, declared, and addressed?
15. Where applicable (e.g., clinical trials or systematic reviews), has your research been registered with the appropriate body?
16. Are you aware of the research misconduct policies of all relevant organisations and know which procedure to investigate research misconduct will take precedence?

Part 2: When conducting your research

1. Are you following the agreed design and methods for the project?
2. Have any changes to the agreed design, methods, and hypotheses been reviewed and approved, if applicable?
3. Are you following best practices to collect, create, produce, compile, store, and manage your research outputs?
4. Are agreed roles and responsibilities for management and supervision being fulfilled?
5. Is your research complying with any monitoring, audit and appropriate data storage requirements?

6. Have you reviewed authorship and contributorship agreements at this stage of the project?

Part 3: When finishing your research

1. Does your research comply with all legal, ethical, and contractual requirements?
2. Are agreements relating to intellectual property, publication, authorship, contributorship, international collaboration, and innovation being complied with?
3. Will all contributions to the research be acknowledged?
4. Will your research and all its findings (inclusive of null results) be reported accurately, honestly, completely, and within a reasonable time frame?
5. Will the research outputs be retained in a secure and accessible form and for the required duration?
6. Will research outputs be made open, accessible, and of high quality?

Checklist Ends.

Section 2: Commitments

Organisations and researchers should adhere to the commitments set out within The Concordat to Support Research Integrity (see [Box 1](#) below). The Principles that were described in earlier editions of this Code of Practice are replaced by the Commitments described in the Concordat to Support Research Integrity.

Organisations and researchers should consider the Commitments when implementing and complying with the core **Standards** described in [Section 3](#) and the **Recommended Checklist for Researchers** in [Section 1](#).

This revised edition of the Code has incorporated the more recently changing focus on research rigour, reflection, transparency, and environmental impact that are key elements that foster a healthy research culture.

Box 1: Summary of the Concordat's Five Commitments (2019 Edition)

- 1.** Maintaining the highest standards: We are committed to upholding the highest standards of rigour and integrity in all aspects of research.
- 2.** Ethical, legal and other frameworks: We are committed to ensuring that research is conducted according to appropriate ethical, legal and professional frameworks, obligations and standards.
- 3.** Research culture: We are committed to supporting a research environment that is underpinned by a culture of integrity and based on good governance, best practice and support for the development of researchers.
- 4.** Dealing with research misconduct: We are committed to using transparent, timely, robust and fair processes to deal with allegations of research misconduct when they arise.
- 5.** Strengthening research integrity: We are committed to working together to strengthen the integrity of research and to reviewing progress regularly and openly.

Section 3: Standards for Organisations and Researchers

Organisations and researchers should comply with the following core Standards, which should be interpreted considering the **Commitments** in [Section 2](#).

Each Standard adopts the order:

- organisations and researchers;
- organisations; and
- researchers.

3.1 General Guidance on Good Practice in Research

3.1.1 ORGANISATIONS AND RESEARCHERS must comply with all legal and ethical requirements and other guidelines that apply to their research, such as The Concordat to Support Research Integrity ([Reference 1](#)) and materials from regulators, learned societies, research funders, publishers and others. This includes submitting research proposals for **ethics review** where appropriate and abiding by the outcome of that review. They should also ensure that research projects are approved by all applicable bodies, ethical, regulatory, or otherwise.

3.1.2 When conducting or collaborating in research in other countries, organisations and researchers based in the UK should comply with the legal and ethical requirements existing in the UK and in the countries where the research is conducted. See the Cape Town Statement ([Reference 3](#)) for guidance on fostering fairness, equity and diversity to achieve research integrity goals. Organisations may need to comply with the legal requirements of a third country even if there is no involvement of that country in a specific research project so as not to hinder other research projects that may involve the third country.

3.1.3 Organisations and researchers based abroad who participate in UK-hosted research projects should comply with the legal and ethical requirements existing in the UK as well as those of their own country.

3.1.4 Organisations and researchers should ensure that all research projects have sufficient arrangements for insurance and indemnity **before the research begins**.

3.1.5 **ORGANISATIONS** should:

- a.** ensure that good practice in research forms an integral part of their research strategy or policy;
- b.** establish clear policies and procedures that cover the Commitments of good practice in research (see [Box 1](#)) and offer detailed guidance on the Standards set out in this Code;
- c.** ensure that these policies and procedures complement and are in accordance with existing organisational policies, such as those for health and safety, reporting channels for raising concerns at work, management of finances or of intellectual property, wellbeing and welfare, and equality, equity, diversity, and inclusivity;
- d.** make sure that their researchers are aware of these policies and procedures and that all research carried out under their auspices complies with them;
- e.** provide training, resources, and support to their researchers to ensure that they are aware of these policies and procedures and are able to comply;
- f.** consider the research culture and environment and its incentives that may influence positively or negatively on good practice in research;
- g.** establish clear policies and procedures on **Trusted Research** that encompass National Protective Security Authority (NPSA, [Reference 4](#)) guidelines while maintaining **open research**, where applicable;

- h.** encourage their researchers to consider good practice in research as a routine part of their work; and
- i.** have a systematic process of regularly reviewing organisation-specific risk assessment to monitor these measures for suitability, effectiveness and continuous improvement.

3.1.6 RESEARCHERS should:

- a.** recognise their responsibility to conduct research of high ethical standards;
- b.** be aware of their organisation's policies and procedures on good practice in research;
- c.** make sure that their research complies with these policies and procedures, and seek guidance from their organisation when necessary;
- d.** work with their organisation to ensure that they have the necessary training, resources, and support to carry out their research;
- e.** suggest to their organisation how guidance on good practice in research might be developed or revised; and
- f.** comply with open research practices and the Hong Kong Principles ([Reference 5](#)) to ensure trustworthy research, and minimise risks by adhering to Trusted Research guidelines. This includes informal discussion in public spaces, conferences, and collaborations.

3.2 Leadership, Supervision, Training and Development

3.2.1 ORGANISATIONS AND RESEARCHERS should promote and maintain an environment which fosters and supports research of high ethical standards, mutual co-operation, professionalism, and the open and honest exchange of ideas. They should foster a culture where good conduct in research is promoted while inappropriate conduct is identified and addressed. Organisations should review

regularly and reflect on their research environment using UKRIO's Self-Assessment Tool ([Reference 6](#)).

3.2.2 ORGANISATIONS should provide direction and supervision of research and researchers, setting out clear lines of accountability for the organisation and management of research. They should support supervisors and researchers in meeting the legal and ethical requirements of conducting research. Organisations should offer and encourage training and support in management and leadership to those responsible for the supervision and development of other researchers.

3.2.3 Organisations should provide training for all researchers to enable them to carry out their duties and develop their knowledge and skills throughout their career by:

- a. identifying unmet needs for training and development;
- b. providing periodic refresher courses or retraining;
- c. providing qualified mentors for early-career researchers;
- d. providing educational opportunities for more-established researchers;
- e. providing ongoing training in responsible research design, conduct, and dissemination; and
- f. where relevant, this training should include open research practices, peer review, research ethics, data and image integrity, and transparency of programming codes and scripts.

3.2.4 Organisations should support the principles of The Concordat to Support the Career Development of Researchers ([Reference 7](#)).

3.2.5 Organisations should provide support for student researchers. They should make sure that student researchers understand which standards and organisational policies and procedures they are expected to comply with and the sources of help and support available to them.

3.2.6 RESEARCHERS involved in the supervision and development of other researchers should be aware of their responsibilities and ensure that they have the necessary training, time, and resources to carry out that role, and request support if required.

3.2.7 Researchers should undergo training to carry out their duties and to develop their knowledge and skills throughout their career, repeating training where necessary to ensure that skills are kept up to date. They should identify needs for training when they arise and report them to their manager or other appropriate person as identified by their organisation.

3.3 Research Design

3.3.1 When designing research projects, **ORGANISATIONS AND RESEARCHERS** should ensure that:

- a.** the proposed research addresses pertinent question(s) relevant to the community or beneficiaries and is designed either to add to existing knowledge about the subject in question or to develop methods for research into it; context dependent concepts like repeatability, reproducibility, replicability, reliability, trustworthiness, credibility, authenticity and meta-research are of equal importance to establish quality;
- b.** the design is justified and appropriate for the question(s) being asked, and addresses the most important potential sources of bias and criticism;
- c.** the design and conduct of the study, including how the research outputs will be made, gathered, analysed, stored, and managed, are set out in detail in a prespecified research plan or where possible a protocol submitted to a registry. Open research practices are encouraged – see the UK Reproducibility Network (UKRN) resources on practicing open research in different disciplines ([Reference 8](#));

- d. all necessary skills and experience will be available, in the proposed research team or through collaboration with specialists in relevant fields;
- e. sufficient resources will be available and that these resources meet all relevant standards;
- f. agreements are in place to give appropriate acknowledgement for the intellectual and/or technical contributions to the research output; and
- g. any of the above issues are resolved as far as possible before the start of the research.

3.3.2 Organisations (where appropriate) and researchers should conduct a risk assessment of the planned study to determine:

- a. whether there are any ethical issues and whether ethics review is required;
- b. the potential for risks to the organisation, the research, or the health, safety, wellbeing and mental health of researchers and research participants, the public, the environment, national security; and
- c. what legal requirements govern the research.

Risk assessments should be a continuous process throughout the lifecycle of the research project to mitigate risks and communicating them to appropriate staff in the organisation.

3.3.3 Where the design of a study has been approved by a **research ethics committee (REC)** or by regulatory or peer review, organisations and researchers should ensure that any later design changes are appropriately reviewed to ensure that they will not compromise the integrity or ethics of the research, or any terms of consent previously given. Information on NHS and non-NHS RECs are provided here:

- NHS Research Ethics Committees
<https://www.hra.nhs.uk/about-us/committees-and->

[services/res-and-recs/research-ethics-committees-overview/](https://www.hra.nhs.uk/about-us/committees-and-services/res-and-recs/research-ethics-committees-overview/)

Non-NHS Research Ethics Committees

<https://www.hra.nhs.uk/about-us/committees-and-services/res-and-recs/non-nhs-research-ethics-committees/>

- 3.3.4** Where appropriate, a study should be registered with an appropriate body to align with transparency and openness of the research. For example, a researcher could use pre-registered reports so that the background, study design, methods, and analysis plan are peer reviewed before research begins (if appropriate for their research discipline).
- 3.3.5** **ORGANISATIONS** should have processes to identify and address risks that proposed research or its results may be misused for purposes that are illegal or harmful (including dual use research of concern, DURC). They should make these systems known to researchers and provide guidance and support to researchers on projects where such risks are identified.
- 3.3.6** **RESEARCHERS** should aim to identify risks that the proposed research might produce results that could be misused for purposes that are illegal or harmful (including DURC). Researchers should comply with Trusted Research guidelines, report any risks to, and seek guidance from, the appropriate person(s) in their organisation and take action to minimise those risks.
- 3.3.7** Researchers should be prepared to make the original research designs (also known as study protocols) available to peer reviewers and journal editors when submitting research reports for publication.

3.4 Collaborative Working

- 3.4.1** **ORGANISATIONS AND RESEARCHERS** should follow the Framework to Enhance Research Integrity in Research Collaborations ([Reference 9](#)), paying particular attention to

projects that include participants from different countries or where work will be carried out in another country, due to the additional legal and ethical requirements and other guidelines that may apply. Refer to the Cape Town Statement ([Reference 3](#)) on how to foster equitable research partnerships. See also sections 3.1.2, 3.1.3, 3.6.2 and 3.7.2.

- 3.4.2** When conducting or collaborating in research in other countries, organisations and researchers based in the UK should comply with the legal and ethical requirements both in the UK and in the countries where the research is conducted. They should have clarity over who has competency in overseeing research outside the UK as UK RECs are advised to avoid reviewing research projects which already have ethical approval from a REC in another country whose review process is similar to the standards expected in the UK.
- 3.4.3** Similarly, organisations and researchers based in other countries who participate in UK-hosted research projects should comply with the legal and ethical requirements in the UK as well as those of their own country.
- 3.4.4** **ORGANISATIONS** should work with partner organisations to ensure they agree and comply with common standards and procedures for the conduct of collaborative research, including the resolution of any issues or problems and the investigation of any allegations of misconduct in research.
- 3.4.5** **RESEARCHERS** involved in collaborations should be aware of the standards and procedures for research followed by any collaborating organisations. They should also be aware of any contractual requirements involving partner organisations, seeking guidance and help where necessary and reporting any concerns or irregularities to the appropriate person(s) as soon as they become aware of them.
- 3.4.6** Researchers should try to anticipate any issues or barriers that might arise because of working collaboratively and agree jointly in advance how they might be addressed,

communicating any decisions to all members of the research team. Agreement should be sought on the specific roles of the researchers involved in the project and on issues relating to intellectual property, Trusted Research, open access, publication, and the attribution of authorship and contributorship, recognising that, subject to legal and ethical requirements, roles and contributions may change during the research.

3.5 Competing Interests

- 3.5.1 ORGANISATIONS AND RESEARCHERS** must recognise that competing interests (i.e., personal or organisational considerations, including but not limited to rivalry and financial matters) can inappropriately affect research. Competing interests, also known as conflicts of interest (COIs) must be identified, declared, and addressed to avoid poor practice in research or potential misconduct.
- 3.5.2** When addressing a competing interest, the organisation should decide whether it is of a type and severity that risks fatally compromising the validity or integrity of the research, in which case researchers and organisations should not proceed with the research, or whether it can be adequately addressed through declarations and/or safeguards relating to the conduct and reporting of the research.
- 3.5.3 ORGANISATIONS** should have a clearly written and accessible policy for addressing competing interests, including guidance for researchers on how to identify, declare, and address competing interests, and should disseminate and explain the policy to researchers. Organisations should ensure that researchers understand the importance of recognising, disclosing, and addressing competing interests in the conduct and reporting of research.
- 3.5.4** Organisations should comply with the requirements of their policy for addressing competing interests, as well as any external requirements relating to competing interests, such

as those of funding bodies. Heads of organisations and other senior staff should be aware of potential or actual competing interests at the organisational level and disclose them when they arise so that they can be addressed. Senior staff should also recuse from committees, investigations, and other duties when there are potential COIs or lack of impartiality.

3.5.5 RESEARCHERS should comply with their organisation's policy for addressing competing interests, as well as any external requirements relating to competing interests, such as those of funding bodies. This should include declaring any potential or actual competing interests relating to their research to their manager or other appropriate person as identified by their organisation, any ethics committee which reviews their research, and when reporting their findings at meetings or in publications. Competing interests should be disclosed as soon as researchers become aware of them.

3.5.6 Researchers should agree to abide by any direction given by their organisation or any relevant ethics committee in relation to a competing interest.

3.6 Research involving Human Participants, Human Material, or Personal Data

3.6.1 ORGANISATIONS AND RESEARCHERS should make sure that research involving human participants, human material, or personal data complies with all legal and ethical requirements and other applicable guidelines such as:

- The UK General Data Protection Regulations (UK GDPR) as part of the Information Commissioner's Office's (ICO's) Guide to Data Protection ([Reference 10](#));
- The National Health Service (NHS) Health Research Authority's (HRA's) operational guidance on the implementation of GDPR for health and social care research ([Reference 11](#));

- The Declaration of Helsinki specifying the ethical principles of involving human participation ([Reference 12](#));
- The Human Tissue Authority’s (HTA’) guidance on the use of different types of human material ([Reference 13](#));
- The Human Fertilisation & Embryology Authority’s (HFEA’s) guidance on the use of embryos and gametes ([Reference 14](#));
- The Administration of Radioactive Substances Advisory Committee (ARSAC) on the use of radioactive substances on human participants ([Reference 15](#));
- The Medicines and Healthcare products Regulatory Agency (MHRA) for the use of medical devices and clinical trials ([Reference 16](#));
- The UK Policy Framework for Health and Social Care Research ([Reference 17](#)); and

Appropriate care should be taken when research projects involve vulnerable groups, such as older participants, children or those with mental illness, and covert studies or other forms of research which do not involve full disclosure to participants. The dignity, rights, safety, and wellbeing of participants must be the primary consideration in any research study. Research should be begun and continued only if the anticipated benefits justify the risks involved.

3.6.2 Organisations and researchers should set up systems to ensure the confidentiality and security of personal data relating to human participants and human material involved in research.

3.6.3 Organisations and researchers working with, for, or under the auspices of, any of the UK Departments of Health and/or the NHS must adhere to all relevant guidelines, such as the Health Research Authority (HRA) guidance:

- UK Policy Framework for Health and Social Care Research ([Reference 17](#)); and
- Use of human tissue in research ([Reference 18](#)).

Organisations and researchers involved in clinical trials on medicinal products for human use should comply with the principles of Good Clinical Practice (GCP; [Reference 19](#)) and the International Conference on Harmonisation guidelines for Good Clinical Practice (ICH GCP; [Reference 20](#)).

- 3.6.4** Organisations and researchers should consider the challenges when working with participants, communities and stakeholders and ensure systems are in place for effective communication, monitoring of compliance with all legal and ethical frameworks throughout the research process, including adherence to Trusted Research guidelines.
- 3.6.5** **ORGANISATIONS** should set up systems to ensure appropriate ethical, regulatory, and peer review of research projects involving human participants, human material, or personal data before, during, and at the end of the study. The systems should include mechanisms to ensure that such research projects have been approved by all applicable bodies, ethical, regulatory, or otherwise.
- 3.6.6** Organisations should also ensure that appropriate procedures for obtaining informed consent are established and observed in projects involving human participants, having regard to the needs and capacity of the participants.
- 3.6.7** Organisations should make sure that their researchers are aware of all the above systems and have access to all relevant guidance, legal and ethical frameworks. UKRIO's Researcher Checklist of Ethics Applications is a useful tool to consider ([Reference 21](#)).
- 3.6.8** **RESEARCHERS** should submit research projects involving human participants, human material, or personal data for review by all relevant ethics committees and abide by the outcome of those reviews. They should also ensure that such research projects have been approved by all applicable bodies, ethical, regulatory, or otherwise.

3.6.9 Researchers on projects involving human participants must satisfy themselves that participants are enabled, by the provision of adequate accurate information in an appropriate form through suitable procedures, to give **informed consent**, having regard to the needs and capacities of vulnerable groups, such as older participants, children, those with mental illness or those in prison all of whom may require gatekeeper permissions. If a participant or gatekeeper cannot give informed consent, the participant should not be involved in the research. Guidance on ethics and gatekeepers can be found in the following:

- UKRIO – Gatekeeper permission ([Reference 22](#));
- Economic and Social Research Council (ESRC) – Research with children and young people ([Reference 23](#));
- ESRC – Research with potentially vulnerable people ([Reference 24](#));
- ESRC – Internet mediated research ([Reference 25](#));
- UKRIO – Good practice in research: Internet-mediated research ([Reference 26](#)) and additional resources on UKRIO’s website ([Reference 27](#)).

3.6.10 Researchers should ensure that co-production, collaboration or participant and stakeholder involvement in research meets and adheres to appropriate methodology and ethical frameworks, with considerations for responsibility, accountability, transparency, respect, expectations, management and sharing or use of the research. See the following for guidance:

- The ESRC Framework on Research Ethics ([Reference 28](#));
- N8 Research Partnership and ESRC report – Knowledge that matters: Realising the Potential of Co-Production ([Reference 29](#));
- The National Institute for Health and Care Research (NIHR) Guidance on co-producing a research project ([Reference 30](#));
- Participatory Research Methods – Choice Points in the Research Process ([Reference 31](#)).

- 3.6.11** Researchers should inform research participants that data gathered during research may be disseminated not only in a report but also in different forms for academic or other subsequent publications and meetings, albeit not in an identifiable form, unless previously agreed to, and subject to limitations imposed by legislation or any applicable bodies, ethical, regulatory, or otherwise.
- 3.6.12** Researchers who are members of a regulated profession must ensure that research involving human participants, human material, or personal data complies with any standards set by the body regulating their profession.
- 3.6.13** All health and social care research must be registered in a publicly accessible database so that trusted information about the studies is available for the benefit of all. For clinical trials, it is a condition of a favourable ethics opinion (see [Reference 32](#)). Registering trials reduces research waste, prevents duplication and allows more participants to engage with the research.
- 3.6.14** Researchers should publish the findings of all clinical research involving human participants in a timely manner upon completion. They need to be mindful of any restrictions on the reporting period, for example, sponsors of Clinical Trials of Investigational Medicinal Products (CTIMPs) are currently expected to publish a research summary of their findings within **12 months** of the study's completion (see [Reference 33](#)).

Forthcoming updates to the UK Clinical Trials Regulations will further strengthen current transparency expectations by introducing new legal requirements for those conducting CTIMPs to register a trial prior to its start, to publish summary of results within 12 months of the end of the trial, and to share trial findings with participants in a suitable format. It is important that research participants are thanked and informed about how their contribution helped in a way that is meaningful to them.

- See the changes detailed in the government response to consultation on legislative proposals for clinical trials ([Reference 34](#)).

3.6.15 If researchers consider that human participants in research are subject to unreasonable risk or harm, they must suspend the activity that is deemed harmful and then report their concerns to their manager, or other appropriate person(s) as identified by their organisation, and, where required, to the appropriate regulatory authority. Similarly, concerns relating to the improper and/or unlicensed use or storage of human material, or the improper use or storage of personal data, should be reported.

3.7 Research involving Animals and Animal Materials

- 3.7.1 ORGANISATIONS AND RESEARCHERS** should make sure that research involving animals adheres to all legal and ethical requirements and other applicable guidelines. They should also ensure responsible use of animal-derived materials (where possible).
- 3.7.2** They are to meet the legal requirements of the **3Rs** for reduction, replacement, and refinement of research involving animals and should refer to the relevant guidance from:
- Home Office ([Reference 35](#));
 - Animals in Science (ASC; [Reference 36](#));
 - Laboratory Animal Science Association (LASA; [Reference 37](#)); and
 - UKRIO ([Reference 38](#)).
- 3.7.3** Organisations and researchers should ensure that they continue to address the 3Rs with help from the National Centre for the Replacement, Refinement & Reduction of Animals in Research (NC3Rs; [Reference 39](#)).
- 3.7.4 ORGANISATIONS** should set up systems to ensure the ethical, regulatory, and peer review of research projects involving

animals. The systems should include mechanisms to make sure that such research projects have been approved by all applicable bodies, ethical, regulatory, or otherwise.

Organisations should have an institutional **Animal Welfare and Ethical Review Body (AWERB)** and follow appropriate guidance (e.g., LASA/RSPCA, see [Reference 40](#)).

- 3.7.5** Organisations should ensure that their researchers are open about animal research and abide by the commitments set out in the Concordat of Openness on Animals in Research ([Reference 41](#)).
- 3.7.6** Organisations should ensure that their researchers are trained in all procedures necessary to conduct the research.
- 3.7.7** Organisations should make sure that their researchers are aware of the above systems and have access to all relevant guidance and legal and ethical frameworks.
- 3.7.8** **RESEARCHERS** should submit a draft project licence application for research projects involving animals for review by their local AWERB and amend their application in accordance with the recommendations of that review. They must have the necessary procedure training and maintain accurate record keeping. They should also ensure that such research projects have been approved by all applicable bodies, ethical, regulatory, or otherwise before starting the research.
- 3.7.9** If researchers consider that animals involved in research are subject to unreasonable risk, harm or licence infringement (either or both project and personal Home Office animal licences), they must suspend the activity that is deemed harmful and then report their concerns to their manager or other appropriate person(s) as identified by their organisation, and, where required, to the appropriate regulatory authority (e.g., Home Office).
- 3.7.10** Researchers should comply with appropriate standards by following the PREPARE checklist when planning animal research ([Reference 42](#)), in conjunction with the ARRIVE

guidelines for transparent reporting and dissemination of outputs from research involving animals and/or animal material ([Reference 43](#)).

3.8 Health, Safety and Environmental Protection

- 3.8.1 ORGANISATIONS AND RESEARCHERS** should ensure that all research carried out under their auspices, or for which they are responsible, fulfils all requirements of health and safety legislation and good practice. Certain types of research, for example social research in a conflict zone, can present issues of health and safety. They should ensure that all research which involves potentially hazardous or harmful material, or which might cause harm to the environment, complies with all legal requirements and other applicable guidelines for acquisition, use, storage, and disposal.
- 3.8.2 ORGANISATIONS** should set up systems to ensure that such research is reviewed in accordance with the organisation's policy on health and safety.
- 3.8.3 RESEARCHERS** should submit such research for all forms of appropriate review and abide by the outcome of that review.

3.9 Copyright and Intellectual Property

- 3.9.1 ORGANISATIONS AND RESEARCHERS** should ensure that any contracts or agreements relating to research include provision for ownership and use of intellectual property. Intellectual property includes but is not limited to research data and other findings of research, ideas, information, designs, patents, trademarks, processes, software, hardware, apparatus and equipment, substances and materials, and artistic and literary works, including academic and scientific publications.
- 3.9.2** Organisations and researchers should not give prior disclosure of research or the findings of research when this

might invalidate any commercial property rights that could result. Organisations and researchers should recognise, however, that the presumption should be that any intellectual property discovered or developed using public or charitable funds should be disseminated to have a beneficial effect on society at large. That presumption may be overridden where there is an express restriction placed on any such dissemination. Any delay in publication and dissemination pending protection of intellectual property should be reasonable and kept to a minimum.

- 3.9.3** Organisations and researchers should comply with any additional conditions relating to intellectual property required by funding bodies.
- 3.9.4** **ORGANISATIONS** should clearly state any exceptions when their standard guidance might not apply; for example, waiving copyright of research theses, dissertations, and articles prepared for publication in journals or books.
- 3.9.5** Organisations must justify ownership and account for policies that introduce restrictions and barriers to open research.
- 3.9.6** **RESEARCHERS** should try to anticipate any issues relating to intellectual property at the **project planning stage** or at the earliest opportunity before dissemination and agree jointly in advance how they might be addressed, communicating any decisions to all members of the research team.
- 3.9.7** Researchers intending to copyright research material or output must comply with relevant legislation and guidelines (see [Reference 44](#)), and ensure that these do not conflict with open access terms or other conditions of funding agreements.

3.10 Finance

3.10.1 ORGANISATIONS AND RESEARCHERS should ensure that the terms and conditions of any grant or contract related to the research are adhered to.

3.10.2 ORGANISATIONS should issue guidelines regarding the legal and ethical purchasing or procurement of materials, equipment, or other resources for research and the hiring of staff for research projects. These guidelines should include statements on the ownership of resources, storage, and maintenance (if applicable), and the rights of researchers to use them. Organisations should also set up procedures for the monitoring and audit of finances relating to research projects.

3.10.3 RESEARCHERS should comply with organisational guidelines regarding the use and management of finances relating to research projects. They should cooperate with any monitoring and audit of finances relating to research projects and report any concerns or irregularities to the appropriate person(s) as soon as they become aware of them.

3.11 Generation, Collection and Retention of Data, Information or Material

3.11.1 ORGANISATIONS AND RESEARCHERS should comply with all legal, ethical, funding body and organisational requirements for the generation, collection, use, storage, and security of data, especially personal data, where particular attention should be paid to the requirements of data protection legislation provided in the GDPR ([Reference 10](#)) by the Information Commissioner's Office (ICO). They should also maintain confidentiality where undertakings have been made to third parties or to protect intellectual property rights. Organisations and researchers should ensure that research data relating to publications is available to other

researchers, subject to any existing agreements on confidentiality.

- 3.11.2** Data should be kept intact for any legally specified period and otherwise for three years at least, subject to any legal, ethical, or other requirements, from the end of the project. It should be kept in a form that would enable retrieval by a third party, subject to limitations imposed by legislation and general principles of confidentiality (see the Medical Research Council’s GDPR guidelines on how the law about confidentiality relates to data protection, [Reference 45](#)). Use of open access data repositories is encouraged and highly recommended to ensure reproducibility and efficient research on research.
- 3.11.3** Organisations and researchers should comply with any subject-specific requirements for the retention of data; for example, certain disciplines, such as health and biomedicine, may require research data to be retained for a considerably longer period.
- 3.11.4** If research involves human material obtained from licensed centres, including materials such as embryos and gametes, or through other research processes such as archaeological excavations, organisations and researchers must comply with legal and ethical guidelines for the storage and preservation specified by relevant authorities such as the:
- Human Tissue Authority (HTA, [Reference 13](#)); and
 - Human Fertilisation & Embryology Authority (HFEA, [Reference 14](#)).
- 3.11.5** If research data (and/or materials) is to be deleted or destroyed, either because its agreed period of retention has expired or for legal or ethical reasons, it should be done so in accordance with all legal, ethical, research funder and organisational requirements and with particular concern for confidentiality and security.
- 3.11.6** **ORGANISATIONS** should have in place procedures, resources (including physical space), and administrative support to

assist researchers in the accurate and efficient collection of data and metadata, and its storage in a secure and accessible form. Guidelines should be in place to fulfil **open data** requirements and expectations for transparency and accountability.

- 3.11.7** Organisations should consider the challenges posed by artificial intelligence (AI)-generated content for intellectual property rights and other research integrity concerns, and have clear policy and guidance in place to effectively regulate technology that have potential for harm across all disciplines and wider society. The policy should define who is responsible and accountable for the use of generative AI in research conducted under the auspices of the organisation.
- 3.11.8** **RESEARCHERS** should consider how data will be gathered, analysed, and managed, and how and in what form relevant data will be made available to others under open research practices, at an early stage of the design of the project.
- 3.11.9** Researchers should collect data accurately, efficiently, and according to the agreed design of the research project and ensure that it is stored in a secure and accessible form. Processing of personal data must comply with GDPR ([Reference 10](#)) guidelines.

3.12 Monitoring and Audit

- 3.12.1** **ORGANISATIONS AND RESEARCHERS** should ensure that research projects comply with any monitoring and audit requirements. They should make sure that researchers charged with carrying out such monitoring and audits have sufficient training, resources, and support to fulfil the requirements of the role.
- 3.12.2** **ORGANISATIONS** should monitor and audit research projects to ensure that they are being carried out in accordance with good practice, legal, and ethical requirements, and any

other guidelines, adopting a risk-based and proportional approach.

3.12.3 RESEARCHERS should consider any requirements for monitoring and audit at an early stage in the design of a project.

3.12.4 Researchers should cooperate with the monitoring and audit of their research projects by applicable bodies and undertake such when required. They should cooperate with any outcomes of the monitoring and audit of their research projects. If they become aware of a need for monitoring and audit where it is not already scheduled, they should report that need to the appropriate person(s).

3.13 Peer Review

3.13.1 ORGANISATIONS AND RESEARCHERS should be aware that peer review is an important part of good practice in the publication and dissemination of research and research findings, the assessment of applications for research grants, and in the ethics review of research projects. Organisation should provide appropriate training and/or a mentoring scheme on peer review.

3.13.2 ORGANISATIONS should encourage and enable researchers to act as peer reviewers for meetings, journals, and other publications, grant applications and ethics review of research proposals, and support those who do so through training and/or mentoring schemes. They should recognise the obligations of peer reviewers to be thorough and objective in their work and to maintain confidentiality, and should not put pressure, directly or indirectly, on peer reviewers to breach these obligations.

3.13.3 RESEARCHERS who carry out peer review should do so to the highest standards of thoroughness and objectivity. They should follow the guidelines for peer review of any organisation for which they carry out such work as well as

the Committee on Publication Ethics (COPE) guidance for publication ethics ([Reference 46](#)).

- 3.13.4** Researchers who agree to peer review must be aware of and avoid both status bias (also known as the Matthew effect – see [Box 2](#)) and implicit bias (commonly known as unconscious bias – see [Box 3](#)) throughout the review process. To facilitate this, they could encourage the relevant body requesting the peer review to anonymise reviewers to author names and affiliations.
- 3.13.5** Researchers should maintain strict confidentiality and not retain or copy any material under review without the express written permission of the organisation which requested the review. Maintaining confidentiality includes not sharing any material with generative AI tools. They should not make use of research designs, data, or research findings from a grant application, manuscript, or other material under review without the express permission of the author(s) and should not allow others to do so. Researchers acting as peer reviewers must declare any relevant competing interests and decline to peer review if they have significant conflicts.
- 3.13.6** While carrying out peer review, researchers may become aware of possible misconduct or have ethical concerns about the design or conduct of the research. In such cases they should inform, in confidence, an appropriate representative of the organisation which requested the review, such as the editor of the relevant journal, publisher staff, or the chair of the relevant grants or ethics committee. Investigation of allegations of research misconduct is the responsibility of the publisher, funder, organisation, or other relevant bodies.
- 3.13.7** Researchers who submit material containing research data or information derived from machine learning algorithms and non-sensitive data should ensure all programming scripts (e.g., using Python, R or other scripting language) and data are openly accessible to reviewers.

Box 2: The Matthew Effect (Status Bias)

Originally developed by Merton in 1968 ([Reference 47](#)) to describe the situation in which individuals who begin in a position of relative advantage accrue greater incremental gains over individuals who begin at a position of relative disadvantage.

For example, a reviewer may give a higher score to a grant application or accept a manuscript for publication if the author is a well-known and established researcher with excellent track record. However, if the same grant or manuscript is submitted by a relatively unknown researcher (e.g., someone at the early-mid career stage), the reviewer may give a lower score on the grant or reject the manuscript for publication.

Box 3: Implicit Bias (Unconscious Bias)

Various biases developing gradually in the subconscious because of beliefs, assumptions and attitudes (which may or may not be ethnocentric) that reinforce stereotypes and assigns judgements on others. Examples include but are not limited to:

- Name bias
- Confirmation bias
- Conformity bias
- Affinity bias
- Gender bias
- Ageism

3.14 Dissemination of Research Outputs

Research outputs are of a wide variety. While not exhaustive, this document considers research outputs as listed in the REF 2021 as follows:

“217. In addition to printed academic work, research outputs may include, but are not limited to: new materials, devices, images, artefacts, products and buildings; confidential or technical reports; intellectual property, whether in patents or other forms; performances, exhibits or events; and work published in non-print media.”

REF 2019/01 Guidance on Submissions (paragraph 217)

- 3.14.1 ORGANISATIONS AND RESEARCHERS** should accept their duty to disseminate research outputs in a manner that reports the research and all the findings of the research accurately and without selection that could be misleading. Compliance with open research practices will add another layer of protection against this; the Transparency and Openness Promotion (TOP) guidelines are useful in implementing transparent research ([Reference 48](#)).
- 3.14.2** Organisations and researchers should consider and mitigate risks associated with research following interpretation of early results (e.g., from rapid publications in open peer review journals where review process is incomplete or preprints) by the media, general public, or other beneficiaries.
- 3.14.3 ORGANISATIONS** should ensure that sponsors and funders of research respect the duty of researchers to publish their research and the findings of their research, do not discourage or suppress appropriate publication or

dissemination, and do not attempt to influence the presentation or interpretation of findings inappropriately. Activities leading to open research practices (including reproducibility and replicability) should be supported.

3.14.4 Organisations should provide training and support to guide researchers in the publication and dissemination of research and the findings of research that involves confidential or proprietary information, issues relating to patents or intellectual property, findings with serious implications for public health, contractual or other legal obligations, and/or interest from the media or the general public.

3.14.5 **RESEARCHERS** should address issues relating to publication and authorship, especially the roles of all collaborators and contributors, at an early stage of the design of a project, recognising that, subject to legal and ethical requirements, roles and contributions may change during the research. Decisions on publication and authorship/contributorship should be agreed jointly and communicated to all members of the research team (see COPE guidelines).

3.14.6 Authorship should be restricted to those contributors and collaborators who have made a significant intellectual or practical contribution to the work. See the Contributor Roles Taxonomy (CRediT) guidelines ([Reference 49](#)). No person who fulfils the criteria for authorship should be excluded from the submitted work. Authorship should not be allocated to honorary or "guest" authors (i.e., those who do not fulfil criteria of authorship). Researchers should be aware that anyone listed as an author of any work should be prepared to take public responsibility for that work and ensure its accuracy and be able to identify their contribution to it. For this reason, the use of generative AI as co-author is unacceptable.

- COPE provides further guidance on authorship and AI ([Reference 50](#)).

- The Method Reporting with Initials for Transparency (MeRIT) system may be useful to clarify author contributions (See [Reference 51](#)).

3.14.7 Researchers should list the work of all contributors who do not meet the criteria for authorship as an acknowledgement, with their permission. All funders and sponsors of research should be clearly acknowledged, and disclosure of interests listed.

3.14.8 Researchers must clearly acknowledge all sources used in their research and seek permission from any individuals if a significant amount of their work has been used in the publication.

3.14.9 Researchers must adhere to any conditions set by funding or other bodies regarding the publication of their research and its findings in open access repositories within a set period.

3.14.10 Researchers should declare any potential or actual competing interest in relation to their research when reporting their findings at meetings, on social media, or in publications.

3.14.11 Researchers should be aware that submitting research outputs as publications to more than one potential publisher at any given time (i.e., duplicate submission) or publishing findings in more than one publication without disclosure and appropriate acknowledgement of any previous publications (i.e., duplicate publication) is unacceptable.

3.14.12 Researchers who are discouraged from publishing and disseminating their research or its findings, or subjected to attempts to influence the presentation or interpretation of findings inappropriately, should discuss this with the appropriate person(s) in their organisation so that the matter can be resolved.

3.15 Open Access to Research Outputs, Data, Findings or Outcomes

- 3.15.1 ORGANISATIONS AND RESEARCHERS** should adhere to the recommendations of the Budapest Open Access Initiative (BOAI, [Reference 52](#)) when considering whether open access is granted immediately for research theses and dissertations submitted to a repository that promotes interoperability and facilitates efficient dissemination, or to embargo for a defined period with restricted access to abstract and metadata.
- 3.15.2** Organisations and researchers should abide by the Concordat on Open Research Data ([Reference 53](#)) and follow guidance on good practice in open research and regulatory frameworks according to disciplinary norms.
- 3.15.3 ORGANISATIONS** should consider the resources available to them for open access and ensure guidelines and policies are in place for accountability and transparency of research material, data, metadata, and outputs when made available for open access.
- 3.15.4 RESEARCHERS** should consider whether open access is granted immediately to support dissemination, reproducibility, and integrity of research outputs, findings, data, and other research material or to embargo full access for a limited period.
- 3.15.5** Researchers must specify terms that permit universal re-use, redistribution, and interoperability of research data and outputs disseminated under an **open licence** (e.g., Creative Commons) of the appropriate type and level. The data and outputs must be available in full in a format that is convenient and modifiable.

3.16 Funding and Collaboration in Research and Enterprise

- 3.16.1 ORGANISATIONS AND RESEARCHERS** collaborating with commercial or other non-research organisations must have a **collaboration agreement** signed before any work commences that stipulates key roles, responsibilities, obligations, and rights of all parties, and how the research will be jointly managed. The agreement should clarify ownership of intellectual property, authorship, and specify exemptions to open licensing terms for the use of research material and legally protected databases. The agreement must reflect any funding terms and conditions including conditions for funding transfer between sponsors and collaborators or commercial partners.
- 3.16.2** Before agreeing to any collaboration with multinational organisations or researchers outside the UK, organisations and researchers must undertake a risk assessment and due diligence to ensure national security and compliance with legal requirements and financial agreements in the UK and all relevant countries. Ethical approvals (if applicable) must be in place from all relevant countries and research protocol(s) agreed upon by all parties.
- 3.16.3** Organisations and researchers must conduct a risk assessment for research that is subject to export control restrictions, acquiring an export licence if needed, and manage the research under appropriate Trusted Research guidelines. See the following for additional guidance:
- The government and academia Research Collaboration Advice Team (RCAT) provides advice on national security risks linked to international research ([Reference 54](#)).
 - The Higher Education Export Control Association (HEECA) provides guidance and training on export control compliance for universities ([Reference 55](#)).
 - Universities UK (UUK), the Centre for the Protection of National Infrastructure (CPNI – now known as the NPSA) and UK Research and Innovation (UKRI) have published

guidelines on Managing risks in international research and innovation ([Reference 56](#)).

3.16.4 ORGANISATIONS must ensure that agreements are in place that specify relevant terms and conditions for engaging any research partners, including commercial and other non-research organisations, in research funded by a major grant award to the organisation or other funding agreement held by the organisation.

3.16.5 Organisations must exercise due diligence when accepting funds from businesses and multinational co-operations, including foreign government associates. Funding should only be accepted from funders with a good track record of awarding research grants and with terms and conditions of funding that do not carry risks to security, finance, or reputation, and are compliant with legal and ethical regulations and requirements.

3.16.6 RESEARCHERS must ensure that any relevant ethical approvals or permissions are in place before starting **contract research** or research with high economic impact. Such research should be conducted in accordance with relevant Trusted Research guidance ([Reference 4](#)) and appropriate sector-specific guidelines. For example:

- The National Directive on Commercial Contract Research Studies guide from the NHS HRA and NIHR for health and life sciences ([Reference 57](#)).
- Business R&D in the arts, humanities and social sciences policy briefing from the Creative Industries Policy & Evidence Centre and Nesta ([Reference 58](#)).

3.17 Misconduct in Research

3.17.1 ORGANISATIONS should define what they consider to be misconduct in research and make it known to their researchers. UKRIO recommends adoption of the definition in The Concordat to Support Research Integrity:

"Research misconduct can take many forms, including:

- **fabrication:** making up results, other outputs (for example, artefacts) or aspects of research, including documentation and participant consent, and presenting and/or recording them as if they were real
- **falsification:** inappropriately manipulating and/or selecting research processes, materials, equipment, data, imagery and/or consents
- **plagiarism:** using other people's ideas, intellectual property or work (written or otherwise) without acknowledgement or permission
- **failure to meet:** legal, ethical and professional obligations, for example:
 - not observing legal, ethical and other requirements for human research participants, animal subjects, or human organs or tissue used in research, or for the protection of the environment
 - breach of duty of care for humans involved in research whether deliberately, recklessly or by gross negligence, including failure to obtain appropriate informed consent
 - misuse of personal data, including inappropriate disclosures of the identity of research participants and other breaches of confidentiality
 - improper conduct in peer review of research proposals, results or manuscripts submitted for publication. This includes failure to disclose conflicts of interest; inadequate disclosure of clearly limited

competence; misappropriation of the content of material; and breach of confidentiality or abuse of material provided in confidence for the purposes of peer review

- **misrepresentation of:**
 - data, including suppression of relevant results/data or knowingly, recklessly or by gross negligence presenting a flawed interpretation of data
 - involvement, including inappropriate claims to authorship or attribution of work and denial of authorship/attribution to persons who have made an appropriate contribution
 - interests, including failure to declare competing interests of researchers or funders of a study
 - qualifications, experience and/or credentials
 - publication history, through undisclosed duplication of publication, including undisclosed duplicate submission of manuscripts for publication
- **improper dealing with allegations of misconduct:** failing to address possible infringements, such as attempts to cover up misconduct and reprisals against whistle-blowers, or failing to adhere appropriately to agreed procedures in the investigation of alleged research misconduct accepted as a condition of funding. Improper dealing with allegations of misconduct includes the inappropriate

censoring of parties through the use of legal instruments, such as non-disclosure agreements.

Honest errors and differences in, for example, research methodology or interpretations do not constitute research misconduct."

3.17.2 Organisations should establish and publicise a **procedure to investigate allegations of misconduct in research** (as in section 3.1.5) and ensure that any such allegations are investigated thoroughly, fairly, and transparently, in a timely manner and with appropriate provisions of confidentiality. The UKRIO Procedure for the Investigation of Misconduct in Research ([Reference 59](#)) outlines a standard process for investigating alleged misconduct.

3.17.3 Organisations should identify and make known one or more members of staff (i.e., the **Named Person**) who have a thorough understanding of research conduct in compliance with The Concordat to Support Research Integrity, who have responsibility for investigating allegations of misconduct in research, and who researchers and external organisations, such as journals or funders, can contact with any concerns about the conduct of research. A staff member other than the Named Person should be designated as the **Alternative Named Person** who will lead any appeals against the findings of a misconduct procedure. Organisations should make sure that staff who investigate allegations and appeals have the necessary training, resources, and support to fulfil the requirements of the role.

3.17.4 Organisations should make it clear to researchers that any misconduct in research is unacceptable and should be reported, that researchers who are found to have committed misconduct in research deliberately will be subject to disciplinary proceedings, and that where researchers are members of a regulated profession, cases of serious misconduct in research will be referred to the body regulating their profession. They should also make it clear that researchers who are found not to have committed

misconduct will be supported and appropriate steps taken to restore their reputation and that of any relevant research project(s).

- 3.17.5** Organisations should support those who raise concerns about the conduct of research in good faith and not penalise them. This support should be in accordance with the organisation's policy on raising concerns or "whistleblowing".
- 3.17.6** Throughout the misconduct investigation period, organisations should ensure adequate support for the welfare and wellbeing for all individuals affected, including the **respondent(s)** against whom the allegation is raised.
- 3.17.7 RESEARCHERS** should know what constitutes misconduct in research and report any suspected misconduct through the relevant procedure of the organisation as soon as they become aware of it. They should recognise that good practice in research includes reporting concerns about the conduct of research and should cooperate with any investigation of misconduct in research when requested. Researchers should work with their institution to support those who raise concerns in good faith about the conduct of research and those who have been exonerated of suspected misconduct.

3.18 Research Culture

- 3.18.1 ORGANISATIONS AND RESEARCHERS** should promote uptake of good practice to improve research culture and encourage attendance to internal and external research integrity training courses, and these should be clearly and efficiently communicated to staff (inclusive of research assistants and technicians) and students across the organisation at the institutional, faculty, and departmental levels.
- 3.18.2** Organisations and researchers should ensure an environment that encourages and facilitates **equality, equity, diversity and inclusivity (EEDI)** at all levels of the

organisation, and have specific support to ensure the environment is as inclusive as possible. This includes but is not limited to provisions for individuals with protected characteristics such as:

- a.** visible and invisible disabilities;
- b.** neurodiversity;
- c.** religion, faith and no faith;
- d.** minority groups (e.g., ethnicity, gender); and
- e.** caring duties

3.18.3 Organisations and research supervisors should incorporate awareness, understanding, recognition, and management of stress, depression, anxiety, or other mental health conditions of researchers in routine training programmes.

3.18.4 Organisations and research supervisors should promote a positive workplace culture and:

- a.** be encouraging to and motivate other researchers;
- b.** encourage good behaviour and attitude;
- c.** accommodate flexible working;
- d.** maintain work-life balance;
- e.** support provisions for sick leave, parental leave and caring duties;
- f.** avoid presenteeism; and
- g.** avoid unrealistic demands that increase workload but decrease productivity. Time pressure and workload issues have a significant impact on good research culture and can open the door to questionable research practices that may lead to research misconduct.

3.18.5 ORGANISATIONS should define what they consider to be the key supportive activities to promote a healthy research culture. These need to be tailored to specific disciplines and be:

- a. sustainable and flexible;
- b. secure and funded;
- c. collaborative and friendly;
- d. diverse, inclusive and fair;
- e. creative, open and encouraging;
- f. stimulating and inspiring;
- g. innovative and rewarding;
- h. honest and rigorous; and
- i. balanced.

3.18.6 A well-signposted report and support system should be in place that provides a simple way for anyone to raise concerns of inappropriate behaviour, bullying, harassment, and violence. This ensures that organisations have a robust and consistent management tool to implement long-term preventative solutions and improve workplace culture.

3.18.7 Organisations should have clear policies for explicitly tackling online bullying, harassment, and hate incidents. This should be strengthened with good reporting structures and networks, having professionally trained staff at all levels, and embedding education and training for students within their curriculum and for staff throughout their employment.

3.18.8 Organisations should allocate funds and have mechanisms in place to address researcher concerns. They should establish rigour and reproducibility by reviewing grant applications or research outputs to improve quality prior to submission. Funds may be designated for internal and external validation of research data, creative works, products, results, or information.

3.18.9 Organisations should integrate **research integrity training** into induction and orientation programmes and offer courses and workshops to researchers. They should require that researchers have ongoing education on research ethics,

governance, integrity, culture, and provide necessary reporting structures for researchers.

- 3.18.10** Organisations should provide training and clear guidelines for dealing with staff and students suffering from depression and anxiety and other mental health conditions and ensure adequate support for researchers affected as well as resources for staff providing support.
- 3.18.11** Organisations should acknowledge and reward departments and researchers that promote research integrity, encourage interdisciplinary interaction, social and academic, and participate in national and international networks or forums for exchange of knowledge and resources.
- 3.18.12** Organisations should use UKRIO's Self-Assessment Tool to regularly review the effectiveness of their policies on improving research culture, and highlight issues that need to be addressed.
- 3.18.13** **RESEARCHERS** should undertake regular research integrity and ethics education and training and participate in integrity events and public engagement activities to promote trust in research. UKRN ([Reference 8](#)) have useful resources on how different disciplines can practice open research.
- 3.18.14** Researchers who supervise research staff (inclusive of research assistants and technicians) or students should have adequate training in supervision and management to avoid disconnected leadership and seek support and advice from experienced colleagues, their institution, and/or other supporting bodies.
- 3.18.15** Research supervisors should ensure that they have adequate psychosocial support for themselves as well as for their research staff or students.

3.19 Research Assessment

3.19.1 ORGANISATIONS AND RESEARCHERS should consider the principles, commitments and framework set out in The Agreement on Reforming Research Assessment (see [Box 4](#)) by the Coalition for Advancing Research Assessment (CoARA) when assessing research outputs, practices and activities ([Reference 60](#)). Judge research based on quality, reliability, reproducibility and/or authenticity rather than on the popularity of the authors, their affiliation, the journal or other output mechanisms. For additional guidance and approaches on the evaluation of researchers, see the following:

- SCOPE Framework for Research Evaluation ([Reference 61](#));
- Joint Funders Group (JFG, [Reference 62](#));
- Alternative Uses Group (AUG, [Reference 63](#)); and
- Résumé for Researchers ([Reference 64](#))

Box 4: Summary of CoARA's Ten Commitments (2022 Edition)

1. Recognise the diversity of contributions to, and careers in, research in accordance with the needs and nature of the research.
2. Base research assessment primarily on qualitative evaluation for which peer review is central, supported by responsible use of quantitative indicators.
3. Abandon inappropriate uses in research assessment of journal- and publication-based metrics, in particular, inappropriate uses of Journal Impact Factor (JIF) and h-index.
4. Avoid the use of rankings of research organisations in research assessment.
5. Allocate resources to reforming research assessment as is needed to achieve the changes organisations are committed to.
6. Review and develop research assessment criteria, tools and processes.
7. Raise awareness of research assessment reform and provide transparent communication, guidance, and training on assessment criteria and processes as well as their use.
8. Exchange practices and experiences to enable mutual learning within and beyond the Coalition.
9. Communicate progress made on adherence to the Principles and implementation of the Commitments.
10. Evaluate practices, criteria and tools based on solid evidence and the state-of-the-art in research on research and make data openly available for evidence gathering and research.

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Competing Interests

Dr Mohi Ahmed, Matt Hodgkinson, James Parry, Nicola Sainsbury and Dr Josephine Woodhams are employees of UKRIO.

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Further Reading

UKRIO recommends consideration of the following, as well as the webinars (<https://ukrio.org/events/webinar-series/>) and collated resources (<https://ukrio.org/resources/>) on our website:

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