THE UNIVERSITY OF SHEFFIELD

POLICY ON GOOD RESEARCH AND INNOVATION PRACTICES

This Policy is in three sections:

(1) Good Research and Innovation Principles
This explains the principles governing all the University's research and innovation (R&I) activities, the purpose of the Policy, its value and whom it applies to;

(2) Good Research and Innovation Practices
This clarifies the University's expectations concerning good practices in research (R) and/or in innovation (I) activities;

(3) Annex
This contains information on what the University means by unacceptable R&I practices (sometimes referred to as research misconduct, questionable practices, or the use of unfair means), provides additional detailed information on good R&I practices, lists the University's policies that this Policy complements, and lists the sources which have been consulted in developing the Policy.

All three sections have the authority of University of Sheffield policy.

For the sake of brevity the *Policy on Good Research and Innovation Practices* is referred to as the *GRIP Policy,* the University of Sheffield as *the University* and research and innovation as *R&I*.

CONTENTS

EXECUTIVE SUMMARY

The University's mission is *to discover and understand*, to play a leading role in undertaking R&I that addresses the challenges facing our world, nation, region and city. Delivering excellent R&I requires intellect and integrity, and the University aspires, at all times, to live up to the highest standards of research integrity.

The GRIP Policy applies to all R&I activities undertaken by the University's staff and students wherever they take place, and also applies to all individuals who are not members of the University but who undertake R&I activities in University premises. Whilst outputs from innovation activities differ from research outputs the fundamental principles in the GRIP Policy apply to both R and I activities.

The GRIP Policy has three fundamental principles:

1. The reputation, value and public benefit of the University's R&I depends on its integrity.
2. The University trusts its staff and students to practise R&I with integrity and actively seeks to sustain a research environment that fosters integrity in R&I.
3. Deliberate, dangerous or negligent deviations from good R&I practices are a violation of the GRIP Policy; as such they are breaches of the University's employment terms and conditions and the Student Discipline Regulations.

It is critical that good R&I principles and practices are observed and seen to be observed. All individual researchers are accountable to a number of stakeholders for how they undertake R&I activities and how they behave towards people involved in and/or affected by the R&I activity. The individual researcher is primarily responsible for upholding good R&I principles and practices when undertaking R&I activities and interacting with others involved in and/or affected by the R&I activity. Supervisors of postgraduate research students and academics responsible for research staff are expected to be role models of good practice and professionalism.

The following issues should be considered from the beginning, and throughout the project:

- recognising that R&I projects cannot always be planned in detail from the outset, an outline plan, including a data management plan, should be drawn up to describe the project's operational process and timetable.
- where appropriate, the project's approach to public engagement and creating public benefit should be explicit;
- potential or real conflicts of interest should be declared and, where necessary, managed;
- potential risks to reputation should be identified, and steps taken to manage and minimise them (the reputation of the University, the Faculty, the Department and the individual researcher for financial probity, integrity, honesty, professionalism)
- for collaborative R&I, an early agreement should be put in place about researchers' roles and responsibilities, and the nature and manner for communications between all involved. An agreement provides an objective process for clarifying what researchers can expect from each other including who does what and the timescales for activities;
- for collaborative R&I, transparent criteria for apportioning authorship, acknowledgements and intellectual property rights (IP rights) should be agreed as early as practical (UKRI requires collaborative agreements to be drawn up);
- for collaborative R&I, the publication strategy should be explicit and agreed by all involved;
- potential harms to people involved within the research, and also to any wider communities who may also be affected by the research activities, should be identified. These should be managed and minimised, and routes for individuals to raise concerns should be clearly provided;
- where applicable, risks to animals and/or the environment and/or to cultural objects should be identified wherever possible, and steps taken to manage and minimise risks;
- all of the above should be transparent and explicit, and should ideally be available to new staff at the time of their recruitment.

SECTION 1

GOOD R&I PRINCIPLES

Section 1 presents the principles that apply to all the University's R&I activities wherever they take place.

The University's mission is *to discover and understand*, to play a leading role in undertaking R&I that addresses the challenges facing our world, nation, region and city. One of the guiding principles of the University's *Strategic Plan* is *Achieving Excellence*. This means undertaking the highest quality R&I, making a positive difference to our economy and society, the way we live, and the way we understand our world. It means not only creating new knowledge, but working with others within and across disciplines and through local, national and global collaborations, to share and apply that knowledge.

Excellent R&I relies on a combination of attributes, such as creativity, curiosity, honesty, passion, rigour, critical reflection, persistence, respect, resourcefulness, responsibility and the ability to communicate and collaborate. Skills are important too, whether generic, discipline-specific or technical. Put simply, delivering excellent R&I requires intellect and integrity and the University's researchers should aspire, at all times, to display the highest standards of research integrity. At stake is the credibility, reputation and value of the University's research and the reputation of individual researchers.

As professionals, researchers practise the value intrinsic to the research profession, to seek greater knowledge and understanding, and as members of wider society researchers are responsible for respecting the values of society, including not causing harm and considering the public interest.

1. WHO THE GRIP POLICY APPLIES TO

The GRIP Policy applies to:

- all University staff and registered students (undergraduate, postgraduate) who undertake R&I activities, funded or unfunded, wherever those activities may take place (in or outside University premises; in the UK or in other countries).
- all individuals who, although not members of the University, undertake R&I activities, funded or unfunded, that take place in University premises.

Whilst outputs from innovation activities differ from research outputs the fundamental principles in the GRIP Policy apply to both R and I activities.

2. THE PURPOSE AND THE VALUE OF THE GRIP POLICY

To raise awareness:

- about good R&I practices;
- about the mutually dependent relationship between excellence and integrity.

To strengthen R&I activities by:

- facilitating the achievement of excellence; practising R&I with integrity encourages one to be as skilful and careful as possible, to be rigorous throughout, to be respectful towards anyone involved in and/or affected by the R&I, and to act responsibly;
- providing a tool that aids decision-making by:

- clarifying the University's expectations concerning good R&I principles and practices;
- heightening risk awareness and, thereby, reducing the risks to those involved in and/or affected by R&I activities;
- facilitating R&I collaborations through contributing to developing a shared understanding of what good R&I practices mean across all disciplines; and
- strengthening the quality of R&I funding applications, for example by demonstrating rigorous project design, including plans for managing research data.

To support the University's R&I environment by:

- clarifying how to undertake R&I activities with integrity without being inappropriately prescriptive;
- codifying, and making explicit, the University's position on good R&I practices;
- reinforcing the University's R&I culture through introducing defensible standards of practice which encourage researchers to think critically about the implications of their actions;
- encouraging individual researchers to be advocates and models for undertaking R&I activities to the highest standards;
- facilitating open discussions about good R&I practices; and
- providing an educational tool for research-led teaching, and for mentors and trainers.

To burnish the University's reputation:

- by conveying clearly the University's commitment to high quality, transparent and accountable R&I activities.

3. FUNDAMENTAL PRINCIPLES

Fundamental principle 1

The reputation, value and public benefit of the University's R&I depends on its integrity.

Fundamental principle 2

The University trusts its staff and students to practise R&I with integrity and actively seeks to sustain a research environment that fosters integrity in R&I.

The University trusts its researchers to be:

- honest and ethical
- professional
- critical of self and others
- as skilful, careful and rigorous as possible
- respectful, having a care for all living things (humans, animals, the natural environment) and for cultural and/or religious artefacts
- working in ways that are lawful and accountable
- collegial, sharing, engaging in open discussions with colleagues and assisting colleagues in their professional and personal development
- mindful of their duty to keep their knowledge and skills up to date
- risk-aware (researchers are not expected to avoid potentially high risk research but should recognise, and prepare for, risks and ensure the responsible management and mitigation of risks)
- responsible, communicating honestly and accurately, as openly as possible, and giving proper attention to the aspirations and concerns of others
- complying with applicable legislation, regulation and contractual obligations.

Fundamental principle 3

Deliberate, dangerous or negligent deviations from good R&I practices are a violation of the GRIP Policy; as such they are breaches of the University's employment terms and conditions and the Student Discipline Regulations.

If, within the University, researchers encounter individuals who are committing unacceptable R&I practices in the conduct of R&I (including in terms of conduct towards living things involved in and/or affected by the R&I) the University trusts researchers not to ignore problems and to raise concerns if they feel something is not quite right (for further guidance see section 4.5).

4. DEFINITIONS

4.1 RESEARCH AND INNOVATION (R&I)

Research, broadly defined, includes all investigation undertaken in order to acquire knowledge and understanding, including (but not limited to):

- work of educational value designed to improve understanding of the research process;
- work of value to the wider academic community;
- work of relevance to commerce and industry;
- work of relevance to the public and voluntary sectors;
- scholarship supporting the intellectual infrastructure of subjects and disciplines (such as dictionaries, scholarly editions, catalogues, and contributions to research databases);
- the invention, design and generation of ideas, images, performances and artefacts, where these lead to new or improved understanding; and
- the experimental use of existing knowledge to develop, design and construct new or improved materials, devices, products and processes.

This definition of research excludes:

- the routine testing and analysis of materials, components and processes (e.g. as part of the observance of national standards) as distinct from developing new analytical techniques;
- routine audit and evaluation, within the established management procedures of organisations;
- developing teaching materials that do not embody original research.

Innovation, broadly defined, is the exploitation of new ideas to generate results that are of economic, social, cultural, intellectual or environmental value. It includes activities such as the commercialisation of intellectual property (IP) – for example through licensing or creating spin-out companies, consultancy, enterprise and entrepreneurship, ensuring that research activities have impact, exploring proof of concept, product testing and development, developing partnerships with private sector, public sector, voluntary organisations and local communities, and industrial placements.

4.2 RESEARCH INTEGRITY

The terms *good R&I practices*, *responsible R&I conduct* and *research integrity* are interchangeable. Commitment to intellectual honesty and personal responsibility for behaviour and actions are inherent in research integrity. Integrity in R&I also embodies an institutional commitment to sustaining an environment that fosters good R&I practices.

Integrity is about how R&I activities are undertaken from start to finish, not only in terms of paying attention to detail at all stages in order to ensure the accuracy and, therefore, the credibility of R&I data and results, but also in terms of behaviour towards people involved in and/or affected by the

R&I activity. The rights and privacy of individuals who are involved in, have a key stake or interest in or who are otherwise affected by the R&I activity in question must be respected. This includes human participants, colleagues (including academics, research staff, technicians, administrators), students, non-University staff who are providing support, external partners, and research funders. In order to ensure excellence and enhance reputation researchers need to evaluate critically how they undertake R&I, assess the consequences of potential actions (so that risks can be foreseen and managed), and plan for how the R&I activity may affect others.

A successful career in R&I demands intellectual ability, an understanding of research integrity, observance of applicable rules and regulations, person management and leadership skills, and effective financial management.

4.3 SAFEGUARDING IN RESEARCH

It is of paramount importance that careful consideration is given to any potential risks of harm to members of the research team, collaborative partners, participants (potential and actual) and wider communities where the research activities are being carried out. Harm in this context refers to all forms of injury or abuse including bullying, exploitation, psychological abuse, physical violence, and any sexual exploitation and harassment. Potential harms should, where possible, be managed and minimised, and participants should be provided with appropriate routes to raise any concerns. These requirements are set out in the University's *Preventing Harm in Research and Innovation (Safeguarding) Policy*.

4.4 RESEARCH ETHICS

Two important dimensions of research integrity are how to ethically undertake research with human participants, and research with animals. Research ethics with respect to humans is defined by the University's *Ethics Policy Governing Research Involving Human Participants, Personal Data and Human Tissue*. The GRIP Policy provides the governing framework for the *Ethics Policy*. Research ethics with respect to animals is defined by the University's *Ethical Policy on the Use of Animals*.

4.5 PROFESSIONAL ETHICS

Many researchers are members of professional bodies that may have their own policies and rules. As professionals, researchers have responsibilities in addition to those of the general population, not least because of the standing of the research profession in society. Drawing upon their disciplinary expertise, as professionals researchers are capable of making informed observations, publications, presentations or statements that the general public cannot.

In the research context remaining professional does not always mean divorcing oneself from, or remaining independent of, cultural, political or religious perspectives (for example, being a member of a pressure group or political party may be relevant to, and provide a motivation for, research). However, remaining professional means to remain objective and, where relevant, researchers should be open and transparent about their personal views, perspectives or beliefs. As professionals, and as members of society, researchers should endeavour not to cause harm. If an R&I project has the potential to cause harm it should be designed in a way that minimises the potential to harm, and this potential for harm should be explicit.

4.6 UNACCEPTABLE R&I PRACTICES

What is meant by unacceptable R&I practices (sometimes referred to as corrupt practices, questionable practices or the use of unfair means) is clarified in the Annex. The causes of unacceptable practices vary, but a common cause is a lack of awareness and understanding of good R&I principles and practices. Relatively few instances of unacceptable practice are caused by

deliberate, dangerous, reckless or negligent deviations from good R&I practices. Therefore, depending on the type of unacceptable R&I practice, the remedy may range from advice, guidance, mentoring or formal training through to an investigation of potential research misconduct in accordance with the University's *Policy on Investigating and Responding to Allegations of Research Misconduct*. The latter may lead to disciplinary action. If and when an unacceptable R&I practice occurs, and the appropriate remedy is educational, then the affected researcher(s) and their department or school should consider using the experience as an opportunity to initiate an open discussion of the issues that the unacceptable practice raises and, potentially, a wider discussion about good R&I practices (where this is the most appropriate and preferred option, wherever possible the anonymity of the researcher(s) directly involved in the experience should be preserved).

Whilst some practices are clearly unacceptable, not all areas of practice are unambiguous; for example the selective use of research data is an area where the boundary between fabrication and creative insight may not be obvious. Open discussions of grey areas benefit the research community, providing an opportunity to critically reflect on the robustness of justifications for actions. Open discussions can also enhance public understanding of the nature of the research process in practice.

4.6.1 DISAGREEMENTS, COMPLAINTS, ALLEGATIONS OF RESEARCH MISCONDUCT

Researchers need to be able to robustly justify their research practices, and should not undertake R&I activities which they are not prepared to explain and defend.

If because of a significant difference of understanding concerning what constitutes acceptable R&I practice collaborating researchers find themselves in a disagreement which could affect the R&I project's integrity, they should reasonably and dispassionately attempt, as professionals, to seek a mutually acceptable solution. If support in seeking a mutually acceptable solution is required, then in the first instance it is suggested that the academic department's designated HR contact is contacted to informally discuss the issue and the best methods of resolving it (it may be that the advice and/or involvement of a senior academic with relevant experience and expertise who is independent of and has no conflict of interest with the disagreement, is appropriate initially). If seemingly irreconcilable differences about research practice arise researchers should seek mediation from a mutually acceptable third party.

The University undertakes large numbers of R&I projects every year. If the University receives a complaint against a member of staff or student about an R&I project the University operates a process for dealing with complaints in order to ensure that they are consistently handled in a clear, timely and transparent way. All complaints are taken seriously and an informal investigation is initially undertaken to ascertain the facts, the reasonableness (or not) of the complaint, and how the complaint should be categorised, for example it may be categorised as potential research misconduct or as potential misconduct of another kind (for example fraud). The reasonableness (or not) of the complaint and its categorisation then determine the next appropriate step(s). Possible steps include no action; the provision of further support (for example training); activation of the University's *Policy on Investigating and Responding to Allegations of Research Misconduct*; or activation of another appropriate University procedure.

As soon as an allegation of research misconduct has been formally raised the University's *Policy on Investigating and Responding to Allegations of Research Misconduct* will be activated and will progress to the natural end-point.

The University's *Code of Practice for Research Degree Programmes* provides details of the process through which PGR students are expected to raise difficulties and/or to raise complaints.

Where an academic department becomes aware of apparently inappropriate R&I practice by a

student the department should consult the University's *Guidance on the Use of Unfair Means in the Assessment Process.*

The Annex includes a link to the University's *Policy on Investigating and Responding to Allegations of Research Misconduct*, to the University's *Guidance on the Use of Unfair Means in the Assessment Process*, to the *Student Discipline Regulations and the Complaints Procedure*.

5. RESPONSIBILITIES

5.1 RESPONSIBILITIES OF ALL STAFF AND STUDENTS (INDIVIDUAL RESEARCHERS)

The healthy competitiveness of the University's R&I environment depends on individual researchers' commitment to upholding good R&I principles and practices at all times; depends on intellect and integrity. The individual researcher is primarily responsible for upholding good R&I principles and practices when undertaking R&I activities and interacting with others involved in and/or affected by the R&I activity. Good R&I principles and practices need to be observed and seen to be observed.

The University expects every researcher to be committed to intellectual honesty and to take primary responsibility for their own behaviours and actions. No individual researcher should be compelled to participate in R&I activities that conflict with their ethical and moral principles, or compel others to participate in R&I activities that conflict with their ethical and moral principles.

Individual researchers are expected to adhere to the GRIP Policy, and to disclose any failure to observe the GRIP Policy by others, and must also adhere to relevant legislation and regulation. The University expects all its researchers to keep their skills and knowledge up to date, recognising that there are always new skills to be acquired and more to learn. All individual researchers are accountable to a number of stakeholders for how they undertake R&I activities and how they behave towards people involved in and/or affected by the R&I activity. Key stakeholders:

- academic colleagues;
- colleagues not covered by the Statutes (e.g. research staff, technicians, administrators);
- students;
- the academic school or department;
- the Faculty and University;
- where applicable, the human participants (including potential participants) involved;
- the wider general public (research outputs, particularly if supported by public funding, are for public benefit, as well as being the creation of individual researchers);
- the research funder; and
- the research profession or discipline.

5.2 RESPONSIBILITIES OF ACADEMICS IN LEADERSHIP POSITIONS

Academics with University, Faculty or Department-wide responsibilities provide leadership to ensure that the University sustains a healthy competitive environment in which to undertake R&I, promoting excellence in R&I so that good practices remain the norm and unacceptable practices are avoided. Individual researchers are expected to follow the leadership of academics in leadership positions (including, where applicable, the leadership of Principal Investigators/Project Directors).

5.3 RESPONSIBILITIES OF HEADS OF RESEARCH GROUPS AND RESEARCH TEAMS

The head of a research group or team encourages open, regular communication, participation and collaboration amongst members, ensures that responsibilities and tasks are appropriately and fairly assigned to members who are able and skilled to perform them, clarifies who is accountable

for what, and ensures that members receive fair credit for contributions.

5.4 RESPONSIBILITIES OF ACADEMICS WITH RESPONSIBILITY FOR RESEARCH STAFF

Many research staff are in the early years of their research careers and many are on fixed-term research contracts, as research associates or postdoctoral researchers. Academics responsible for research staff are expected to provide them with effective leadership and management, which includes:

- being role models of good practice and professionalism in how to undertake R&I activities and how to interact with others involved in and/or affected by the R&I activities;
- encouraging and supporting research staff to think critically about their future careers and to take advantage of available opportunities to learn more about potential career paths and to develop skills and qualities that are useful for surviving and succeeding in different career paths.

Research staff are themselves expected to proactively engage in their own personal and career development and lifelong learning.

For those research staff set on pursuing an academic career path, academics responsible for them should provide advice and signpost them to relevant guidance and training provision that is designed to prepare research staff to become the next research leaders. An understanding of research integrity and what it means to be professional is useful for a successful research career and provides a useful transferable skill for all career paths. Academics with responsibility for research staff should make them aware of the GRIP Policy as early as possible, and should ensure that they receive proper credit for their work. This should, for example, be reflected by the sequence of authors listed on, or cited with reference to, collaborative publications.

The University remains committed to upholding the *UK Concordat to Support the Career Development of Researchers*.

5.5 RESPONSIBILITIES OF SUPERVISORS OF POSTGRADUATE RESEARCH (PGR) STUDENTS

Supervisors are expected to provide PGR students with:

- role models of good practice and professionalism in how to undertake R&I activities and how to interact with others involved in and/or affected by the R&I activities;
- guidance on managing the research project, ensuring timely submission;
- guidance on personal and career development, encouraging and supporting PGR students to think critically about their future careers and to take advantage of available opportunities to learn more about potential career paths and to develop skills and qualities that are useful for surviving and succeeding in different career paths.

PGR students are themselves expected to proactively use opportunities to acquire new professional skills and knowledge. Each PGR student has a Supervisory Team which includes two Supervisors, one of whom leads in providing advice on training and skills development. The Supervisor and the PGR student should work together to establish an effective supervisory relationship.

Supervisors should ensure that PGR students receive proper credit for their work. This should, for example, be reflected by the sequence of authors listed on, or cited with reference to, collaborative publications. Before a PGR student's research results are published, presented or informally discussed with anyone who is not an employee of the University, their potential for commercial exploitation should be fully considered. Intellectual property (IP) rights arising from work undertaken by PGR students, rest with the University. However, it is expected that, following on from recognition of the contribution made by the PGR student and attending to natural fairness and justice, the University will grant to the PGR student a reasonable share of any benefits accruing

on the same basis as to other members of staff. The responsibilities of supervisors and PGR students are set out in the University's *Code of Practice for Research Degree Programmes*.

The University remains committed to upholding the Quality Assurance Agency's *UK Quality Code for Higher Education*.

5.6 RESPONSIBILITIES OF THE UNIVERSITY'S R&I COMMITTEE AND THE UNIVERSITY'S RESEARCH ETHICS COMMITTEE

The University's R&I Committee, which reports to the University's Senate, has responsibilities that include *overseeing the development and implementation of institutional policy, procedure and guidance in respect of research governance*. The Committee fulfils an important role in overseeing the University's efforts to foster good R&I practices.

The University Research Ethics Committee (UREC) also reports to Senate and its responsibilities include *ensuring that the University's Ethics Policy is adhered to, promoting awareness and understanding of ethical issues in research throughout the University's research community* and *providing advice on any ethical matters relating to research that are referred to it from within the University*. Information on the R&I Committee and the UREC is available from the website of the University's R&I Services.

6. COMPLIANCE WITH EXTERNAL REQUIREMENTS

6.1 LEGISLATION, REGULATION, CONTRACTUAL OBLIGATION

The GRIP Policy does not displace a researcher's obligations to comply with legislation, external regulations and any obligations established by contractual terms and conditions. Some R&I activities are governed by specific legal and/or regulatory requirements (examples: research involving personal data; health and social care research involving the NHS, which is covered by the *UK policy framework for health and social care*; research involving people who lack mental capacity; research involving animals).

6.2 HEALTH AND SAFETY

Researchers should at all times adopt safe working practices, including taking any necessary precautions to ensure health and safety, and should manage and minimise any potential harms, both to themselves, participants (potential and actual) and wider communities which may be affected by the research activities.

6.3 INSURANCE

The University's Financial Regulations state that Heads of Department are responsible for immediately notifying the Director of Finance of any new risks, or alterations to existing risks, arising from the activities of their Department that might increase or extend the University's exposure to legal liability, or of any new liability or asset of the University that appears to require insurance cover. The Finance Department must be directly notified of any R&I activity of an unusual nature or involving aerial activity, pollution, clinical trials, or having transatlantic implications (clinical trials or similar must not commence until advice of insurance cover is confirmed).

6.4 FUNDERS AND JOURNALS

Wherever possible and feasible all research, not only externally-funded research, should be subject to an internal or external peer review process in order to ensure that it is of sufficiently high quality. Funders may have their own policies or requirements, in which case observance of these will, as a condition for receiving R&I funding, necessarily take precedence over the GRIP Policy.

However, this does not obviate the need to adhere to the GRIP Policy. The policies and requirements of funders and journals are an extra layer of R&I governance and not an alternative to the GRIP Policy.

6.5 PROFESSIONAL BODIES AND LEARNED SOCIETIES

Professional bodies and learned societies may have their own policies and rules. While learned societies' R&I guidelines are useful resources that may offer supplementary guidance the GRIP Policy must, in the first instance, take precedence for University staff members with respect to R&I activities undertaken on University premises. External bodies that have professional licensing or registration responsibilities are, however, a different matter and their external principles carry a different weight. Although it is unlikely that professional R&I codes will conflict with the GRIP Policy, in the event of a perceived conflict of this kind the member of staff concerned should contact the Secretary of the University's R&I Committee for guidance.

SECTION 2

GOOD R&I PRACTICES

Section 2 clarifies the University's expectations concerning good R&I practices.

First, information relevant to all researchers is presented.
Second, information relevant to a significant proportion of researchers is presented.

Case studies, written by academics from the University's Faculties, are included to illustrate the breadth of challenges that can arise when undertaking R&I activities.

The University acknowledges the pressures facing researchers and believes that the practices outlined here are reasonable, can be upheld consistently, and that applying them facilitates the achievement of excellent R&I. Good R&I practices are categorised either as *minimal acceptable practices*, that the University expects to be followed, or as *higher practices* that the University expects its researchers to aspire to. The University is confident its researchers aspire to display the highest standards of research integrity.

Where an appropriate course of action is not straightforward the GRIP Policy and, where relevant, applicable legislation or regulation or the policies of professional bodies and learned societies should be consulted. Recognising that researchers are professionals, but that professional expertise has its limitations, where necessary researchers should seek advice and/or support from others, discussing with them the dilemma before taking action.

The GRIP Policy cannot attempt to prescribe practices for every scenario in every discipline. Nor does the GRIP Policy seek to formalise practices, since a quality culture that has shared values and expectations and which practices informal regular ways of facilitating communication, participation and discussion within a discipline can be very effective. The GRIP Policy provides a tool to aid decision-making and stimulate discussion about existing practices.

The following issues should be considered from the beginning, and throughout the R&I project's lifetime:

- recognising that R&I projects cannot always be planned in detail from the outset, an outline plan, including a data management plan, should be drawn up to describe the project's operational process and timetable;
- where appropriate, the project's approach to public engagement and creating public benefit should be explicit;
- potential or real conflicts of interest should be declared and, where necessary, managed;
- potential risks to reputation should be identified, and steps taken to manage and minimise them (the reputation of the University, the Faculty, the Department and the individual researcher for financial probity, integrity, honesty, professionalism)
- for collaborative R&I, an early agreement should be put in place about the roles and responsibilities of researchers involved in a R&I project, and the nature and manner for communications between all involved. An agreement provides an objective process that clarifies what researchers can expect from each other (including who does what and timescales);
- for collaborative R&I, transparent criteria for apportioning authorship, acknowledgements and intellectual property rights (IP rights) should be agreed as early as practical (Research Councils UK requires collaborative agreements to be drawn up);
- for collaborative R&I, the publication strategy should be explicit and agreed by all involved;
- consideration of the potential harms to people involved with the research, and also to any wider communities who may also be affected by the research activities. These harms should be managed and minimised, and routes for individuals to raise concerns should be clearly provided;
- where applicable, risks to animals and/or the environment and/or to cultural objects should be

identified wherever possible, and steps taken to manage and minimise risks;

- all of the above should be transparent and explicit, and should ideally be available to new staff at the time of their recruitment.

Case Study

Most of us are familiar with conducting research ethics reviews from the safe environs of our offices, as we try to envisage the ethical issues that are likely to arise in our work. But researchers often need to make 'on the spot' judgments as unexpected situations present themselves – and need to ensure good practice in difficult circumstances as they do so.

Whilst conducting research in Zambia in 2003, I interviewed a former politician about his experiences under the one-party state in the 1970s. I had explained the general purpose of my research, obtained permission to ask my questions and to record the interview. However, I was naively unaware of the extent of human rights abuses during that period, and was unprepared when the interviewee launched into a detailed description of being detained and tortured by state agents. This was, unsurprisingly, a traumatic experience that was expressed emotionally and interspersed with crying and long silences. For a while, I forgot I was a researcher and responded simply by holding the hand of this elderly gentleman as he spoke. I did however ask if he wanted to stop the interview on a number of occasions, to which he responded with a vigorous shake of his head.

Following the interview, the recorder now switched off, I discussed with the interviewee what he wanted me to do with the material. He informed me that he had just spoken of experiences that he had not related in detail to any member of his family, including his wife. Although I knew I had gathered valuable research material, I did offer to erase the recording if he wished me to do so, since I didn't feel that the explanation I had provided in advance of what the interview would cover reflected what had actually occurred. I also offered to anonymise him in any use I would subsequently make of the material. He however was insistent that I retain the recording and that his name be attached to his account – he apparently viewed the interview as a cathartic act and was keen that his testimony was published. I returned to discuss this with him the following day and he confirmed his view to me. I have subsequently made use of his interview in an article and in a book on Zambian political history.

Good research practice consists in significant part of treating human beings with respect, as you would wish to be treated. An ethics policy won't give you all the answers or address every possible scenario, but putting your interviewees before your own interests will help you do the right thing in the unpredictable circumstances of real world research.

1. INFORMATION RELEVANT TO ALL RESEARCHERS

Integrity is about how R&I activities are undertaken from beginning to end, in terms of paying attention to detail at all stages and in terms of behaviour towards others and having a care for all living things.

1.1 GOOD R&I PRACTICES IN DESIGNING R&I PROJECTS

***Minimal acceptable practices in R&I design*, which the University expects to be followed:**

i. Every effort should be made to ensure that research is worthwhile and does not duplicate research previously undertaken – i.e. involves acquiring knowledge and understanding (duplication of research does not mean activities which are undertaken to verify the research results of other researchers; a different, important worthwhile activity in its own right);

ii. All potential sources of bias should be addressed; Recognising R&I projects cannot always be planned in detail from the beginning, given the evolving nature of research, an outline plan is useful for describing the project's operational process and timetable (this should include a research data management plan). The timetable should provide sufficient time for undertaking the research;
iii. The health, safety and welfare of all those connected with the research, including the researchers, must not be compromised, with potential harms managed and minimised, and routes provided to report concerns;
iv. If an R&I project has the potential to harm the environment it should be designed in a way that minimises the potential to harm, uses resources carefully and efficiently and minimises waste;
v. Researchers should recognise the limits to their own professional expertise and, if necessary, seek advice from others, for example from statisticians (for example, seeking the advice of the University's Statistical Services Unit (SSU) on the adequacy of a sample size).

Higher practices **in R&I design, which the University's researchers should aspire to:**

i. The *dual use dilemma*: If the R&I project's nature means that it has the potential to do good, but also the potential to be misused with potential serious adverse consequences for society, the economy or the environment, and it is unclear how to prevent the potential for misuse without sacrificing the potential benefits that are expected to result from the R&I project, then the researcher should take steps to minimise the potential for misuse that lies within the researcher's control. Potential practical steps:

- Report the potential for the R&I project to be misused to the Head of Department, who may choose to consult appropriately (e.g. department's Research Ethics Committee). At the costing application stage researchers are expected to highlight if a proposed project could be perceived as controversial (this enables the University to prepare appropriately);
- Establish a project advisory board whose role includes advising the researcher on how to manage the *dual use dilemma*, including how to communicate responsibly about the research (the advisory board could, within the bounds of the University's policy, advise on the strategy for exploiting IP rights, and on its strategy for disseminating and communicating the project's results more widely (could include activities to promote public debate or provision of advice to policy makers));
- In the case of research that could be misused with potential serious adverse consequences for public health and safety, placing restrictions on who can access the research data.

1.2 GOOD R&I PRACTICES IN MANAGING RESEARCH DATA

Research data, like publications, are R&I outputs in their own right which require careful management. In recent years research funder policies, journal requirements and disciplinary initiatives concerning research data management have evolved considerably. It is important to be aware of and observe funder and journal conditions, as well as the University policy below.

Ensuring research data integrity (i.e. so that it is complete, documented, verifiable and undistorted) is critical to ensuring the validity of research results and requires planning and management of data throughout the research process.

Enabling others to access research data is critical. All R&I activities are governed by some terms and conditions which will usually specify provisions for published outputs. There may be a requirement to delay the release of research data for a reasonable time period on commercial grounds or to allow for the de-identification of data in research involving human participants. In rare circumstances the University may not be able to publish information on the grounds of National Security. Where restrictions apply it is important to state the reason for the restriction and how others can access the data in any associated publications. PGR students may embargo both their thesis and research data, in discussion with their Supervisors, and under certain conditions (e.g. where it is necessary to delay access to a thesis until after publication of results).

However, research data must be available to others in order to enable its credibility and reliability to be verified independently.

It is good R&I practice to continue managing research data after publication to safeguard its ongoing value. This includes enabling continued access to and active preservation of research data and metadata in formats that can be used by researchers across disciplines over extended periods. The value of some research data increases over time, whereas other research data may decrease in value as the focus of research moves, so the utility of research data being preserved should be assessed regularly.

Research Data Management Policy

1. Preamble

This policy aims to provide a strategic framework for the management of data generated by research projects at the University of Sheffield. The term "data" is intended to be interpreted widely in this context as the evidence used to inform or support research conclusions, and includes observational data, experimental data, and some software code, independent of format. Data could also be information from archives, videos of performances or recorded interviews. There are particular challenges with the management, storage and long-term curation of digital research data, which the policy seeks to address. This policy applies to all research undertaken by staff and research students of the University, regardless of whether or not it is externally funded. It aims to encourage a positive approach to the management of research data across the institution.

The University regards the effective management of the data generated by research projects as an integral part of good research and innovation practice. It believes that there are important drivers for effective research data management, including:

- Maximising the impact of research
- Assurance of research integrity and reproducibility
- Enhanced data security and reduced risk of data loss
- Facilitation of data sharing and collaboration by aligning with the FAIR principles[1]
- Maximising opportunities for new research based on reuse and recombination of data from multiple sources, including data mining
- The principle of open access to publicly-funded research outputs, recognised by UKRI[2][3], OECD[4] and universities around the world[5]
- Improving the likelihood of success in future grant proposals
- Compliance with the requirements of research funders.

2. Data Management Requirements and Responsibilities

The responsibilities outlined here apply to all those involved in undertaking research across the University, whilst recognising that research practices vary by discipline. Therefore faculties, departments and research groups may wish to develop a more specific policy relevant to local research methods.

[1] Wilkinson, M. D. *et al.* (2016) The FAIR Guiding Principles for scientific data management and stewardship. https://doi.org/10.1038/sdata.2016.18

[2] UKRI Common Principles on Data Policy (2011) https://www.ukri.org/funding/information-for-award-holders/data-policy/common-principles-on-data-policy/

[3] Concordat on Open Research Data (2016) https://www.ukri.org/files/legacy/documents/concordatonopenresearchdata-pdf/

[4] OECD Principles and Guidelines for Access to Research Data from Public Funding (2007) http://www.oecd.org/dataoecd/9/61/38500813.pdf

[5] Sorbonne declaration on research data rights (2020) https://www.leru.org/files/Sorbonne-declaration.pdf

2.1 All researchers

All researchers, including postgraduate research students, have a personal responsibility to manage effectively the data they create. All researchers are expected to:

- Ensure that there is a data management plan for all research projects they are working on and implement this plan. Topics covered by the plan should include data collection, appropriate storage, use, re-use, security, access, archiving, sharing and publication. It is recognised that for students, the level of detail required is likely to be significantly less than for a staff member undertaking an externally funded project.
- Manage personal data in line with the University's *Ethics Policy Governing Research Involving Human Participants, Personal Data and Human Tissue*, and data protection legislation.
- Consider IP, contractual or data licencing and sharing issues before the research commences and ensure any necessary agreements are in place.
- Ensure that data they have generated, collected or derived is shared with a supervisor or lead researcher during the research and before they leave the University to minimise the risk of data loss.
- Document research data and software appropriately and store this documentation alongside the data and software in line with the FAIR (Findable, Accessible, Interoperable and Reusable) principles. Documentation and research data should be shared in a research data repository unless there are financial, legal or ethical reasons which mean this is not possible. Documentation, data and software must be given to a supervisor or lead researcher before leaving the University.
- Include data access statements in published research and formally cite data which informs published research[6].

2.2 Lead researchers / principal investigators (PIs)

The primary responsibility for effective research data management during the course of research projects lies with lead researchers/principal investigators (PIs). PIs are expected to:

- Set clear expectations with respect to appropriate data management and ensure that all members of their research team(s) are aware of their responsibilities and have the skills, understanding and support necessary to carry these out effectively (and where required, assist team members in gaining the necessary skills and understanding).
- Have an up to date, documented copy of data from research undertaken by students, post-doctoral research associates and other researchers during the project and in particular before they leave the University.
- Seek to recover the direct costs of managing research data from the research funder. This may include costing in storage for projects involving large amounts of data and the support of a member of the Library Data Management team or a research data manager, where data management needs are likely to be complex and may require additional support and advice.

2.3 Supervisors of students

Supervisors of students at all levels are also responsible for setting clear expectations with respect to data management, and ensuring their students are aware of their data management responsibilities. Supervisors are expected to:

- Hold discussions with students about data management throughout the student's project and support them in developing the necessary skills, to a standard consistent with their level of study.
- Discuss data management with postgraduate research students as part of the Doctoral Development Programme's training needs analysis.

[6] FORCE 11 Data Citation Synthesis Group Joint Declaration of Data Citation Principles (2014) https://doi.org/10.25490/a97f-egyk

- Support postgraduate research students in maintaining an appropriate Data Management Plan throughout the project, to be submitted as part of the student's record of their personal development at the end of their research.
- Have an up to date, documented copy of all data from research undertaken by students throughout the project and in particular before they leave the University.

2.4 Postgraduate research (PGR) students

In addition to the general responsibilities for researchers, all PGR students are required to:

- Submit a Data Management Plan for assessment as part of their Confirmation Review,
- Maintain their plan over the course of their research.
- Share their data with their supervisors during their research project and make sure that a copy remains with their supervisors when they leave The University of Sheffield.

3. Ownership of research data

Unless the terms of research grants or contracts provide otherwise, data generated by research projects are the property of the University of Sheffield. The University recognises the importance of making research data available as part of the research process. This will frequently involve granting a non-exclusive licence (e.g. a Creative Commons licence) to a data repository, but researchers should exercise care in assigning rights in data to publishers or other external agencies.

4. Support from the University for research data management

The University provides:

- Training on research data management for research students, early career researchers, and other researchers who request it
- Guidelines and advice on research data management, including data management plans, costing of research data management into research proposals, creation of descriptive metadata, intellectual property and Freedom of Information requests
- Additional infrastructure and services for research data management including resilient, secure storage, to be developed in consultation with researchers.

This policy will be kept under regular review by the Research & Innovation Committee.

June 2020

Case Study

Dr Sparrow was a Senior Lecturer in the Department of Life Sciences at the University of Poppleton, whose research focussed on allergy. Her team had recently been investigating the abilityof a new set of chemical antagonists (synthesised by Professor Blackbird in the Department of Chemistry), to inhibit histamine production using a cell-line model. Most of the experimental work was being carried out by a PhD student, Wilf Whitmore. Wilf was a very hard-working and meticulous student, although Dr Sparrow sometimes suspected that his apparent attention todetail masked a rather shallow understanding of science. His research was successful, however, and one of the antagonists, BLIP-1, showed impressive inhibition of histamine release in the cell-line model. Wilf duly completed a 350-page thesis, and following a short viva with Examiners Dr Busyand Professor Bordman, was awarded his PhD, subject to minor corrections. Mindful of the precarious nature of a career in academic research, Wilf subsequently decided to turn his back on science and opted to retrain as a patent lawyer.

During the brief Summer lull in teaching, Dr Sparrow began to write up Wilf's findings for submission to the prestigious journal, Allergy Today, citing Wilf as first author. As Wilf was pre- occupied with his new career, she used the figures he had produced for his thesis to describe the work on BLIP-1. The paper was generally positively received by the reviewers, but both expressed incredulity at the extreme potency of BLIP-1. Could she prove that the effects weren't being caused by a contaminant? Professor Blackbird indignantly supplied her with a detailed analysis of his compounds, proving that they were pure. Dr Sparrow looked again at the file that Wilf had used to generate his figures – everything looked in order, but BLIP-1 did seem to be active at incredibly low concentrations. She decided to check Wilf's lab books, where he'd recorded every experiment by date in exemplary detail, carefully describing how he'd prepared and diluted his reagents. Reading his neat handwriting with a sinking heart, Dr Sparrow realised that Wilf had made a fundamental error in calculating the amount of BLIP-1 he'd used – it was 100 times more concentrated than he'd thought.
Why hadn't she realised the data were suspect when she'd been advising Wilf on his thesis? Why hadn't his Examiners spotted this? Thankful that at least she'd taught Wilf how to keep good records, Dr Sparrow sighed heavily and started to redraft the paper for Allergy International.

1.3 GOOD R&I PRACTICES IN AUTHORSHIP AND ACKNOWLEDGEMENT

Decisions about authorship (e.g. the criteria for deciding who can be named as an author and the author sequence) and about acknowledgement (i.e. people who have contributed but who do not fulfil the authorship criteria) normally result from a process of ongoing communication, reflection and/or revision as the project evolves over its duration. The University trusts its researchers, as in all other matters, to remain professional and reasonable when communicating on this subject; the goal being to ensure that all individuals who fulfil authorship criteria are named as authors and all other contributors are acknowledged.

Minimal acceptable practices in authorship **and acknowledgement which the University expects to be followed:**

i. All individuals who are affected by authorship should be involved in the communication, discussion and decision-making on authorship in order to ensure that they reach agreement together, have clear expectations about and can defend robustly their own individual authorship positions and the authorship position of others (individuals who join the project at a later stage, who are affected by authorship, should be involved);
ii. Individuals who are affected by authorship decisions should be notified of changes in a timely manner and preferably in writing (written records of decisions on authorship can help avoid potential misunderstandings);
iii. Every author should be prepared to explain the rationale for the agreed author sequence;
iv. Authorship should be restricted to individuals who have made a substantial intellectual contribution to the research, meaning to all of the following:
    - conception and design, and/or collection and/or analysis and interpretation of research data; AND
    - drafting the research output (e.g. article, paper, book) or revising it critically for important intellectual content; AND
    - final approval of the version of the research output to be published; AND
    - agreement to be accountable for all aspects of the research output, ensuring that questions related to the accuracy or integrity of any part of the research output are appropriately investigated and resolved.

(securing research funding, providing space, collecting research data, or managing or supervising researchers involved in the project do not by themselves justify authorship).

This is the definition of authorship criteria used by the International Committee of Medical Journal Editors (ICMJE), which many journals have adopted. Where individual researchers use different authorship criteria to the above, following the norms of their research disciplines, they should be able to clearly explain and robustly justify their criteria to others outside their own disciplines.

v. No person who fulfils the authorship criteria should be excluded as an author;
vi. The researcher leading the project (e.g. the Principal (or Chief) Investigator) is normally the senior author responsible for authorising publication; authorisation should cover the content of the research output and the intended place of publication;
vii. Where there are two or more authors it is recommended that the senior author takes responsibility for the integrity of the entire publication. The senior author should be able to achieve this by seeking verification from each of the authors (i.e. the co-authors) that they have reviewed the publication's content, can confirm that their area of expertise within it is accurate to the best of their knowledge, and take responsibility for their contribution to the publication. Every part of a publication which is a substantial intellectual contribution to the research results must be at least one author's responsibility;
viii. Depending on the research, the contributions and responsibilities of each co-author with respect to the publication's content should be stated explicitly, and the senior author should be able to describe these. Where the senior author does not take responsibility for the entire publication all authors are to be considered individually and collectively responsible;
ix. The work of all contributors and collaborators who do not meet the criteria for authorship should be properly acknowledged in publications. This may include advisers, communities, funders, individuals, sponsors, or others;
x. Where a research project would not have been possible without, and builds upon, the efforts of other researchers' previously published research, the importance of that previous research for the research project should be properly acknowledged.

Case Study

Question: How could you become involved in plagiarism without meaning to and without knowing – until it was too late? Answer: You co-author with someone who does it for you.

This really happened to an author who contacted me, in my capacity as Editor-in-Chief of an international academic nursing journal. The author was concerned that extensive plagiarism had come to light in a paper submitted by one of her PhD students on which she and other members of the supervisory team were co-authors. How the plagiarism had been detected was not disclosed but the PhD student admitted it. However, at the time of contacting me, the paper was already published. The source papers – two of them – were provided and, on investigating, the plagiarism was obvious. As Editor-in-Chief, the train of events initiated followed the COPE (Committee on Publication Ethics) guidelines (www.publicationethics.org). The plagiarised journal editors were contacted and a course of action was agreed between publishers. Ultimately, a corrigendum was published alongside the online version of the paper, which was not withdrawn, pointing out the plagiarism.

The blame in this case lay with the PhD student; however, all the authors – by virtue of their co-authorship – were implicated in the plagiarism. The moral of the story is that, at some point in the process of publishing a paper, especially with inexperienced authors, someone should run an online plagiarism check using, for example, Google Scholar, Turnitin® or iThenticate®. It is often the case that, where PhD students submit with supervisors, that the student is the corresponding author. Nevertheless, the supervisor should ask the student to run a plagiarism check and ask to see the result. If the student is unable to do this then the supervisor should run the report and deal with any substantial similarity with third party sources. It is assumed that students are well aware of the

consequences of submitting plagiarised work for assessment towards their degree but, when it comes to publishing from assessed work, such as PhD theses or in the process of writing the thesis, then it needs to be emphasised that the same standards apply. Plagiarism for an assessment may result in a penalty or being removed from a programme of study; plagiarism as an academic can lead to dismissal from your employment and a very public stain on your reputation.

1.4 GOOD R&I PRACTICES IN PUBLICATION

Publishing includes: publishing in peer-reviewed journals and books, conference presentations, posters presented at conferences, reports commissioned by external organisations, promotional reports and materials on research, articles in the media, publication in web-based journals, on project websites, and other specific outputs aimed at a lay readership, including media recordings. As a leading research-intensive University researchers are encouraged to publish in highly prestigious and externally peer-reviewed publications, wherever possible, to ensure opportunities for dissemination of our research are maximised. Suitable outlets will vary by research discipline and senior staff in departments will be able to advise colleagues earlier in their careers in this respect.

Minimal acceptable practices in publication **which the University expects to be followed:**

i. Research data and results must be checked rigorously for their integrity before being published and/or communicated with the public. All sources, materials and methods used to obtain and analyse research data should be explained clearly in the publication;
ii. If applicable, potential or real conflicts of interest should be declared in the publication;
iii. Researchers are normally expected to publish research results as a coherent entity;
iv. Wherever possible researchers should publish in peer-reviewed publications in order to ensure that the research is sufficiently high quality, and wherever possible with journals which encourage open access to research data;
v. Researchers are expected to comply with any applicable contractual, ethical, funding and legislative rules constraining and/or governing the publication of research data and results;
vi. Researchers should ensure the earliest possible publication of results of publicly-funded research; a data management plan should inform decision-making on when to publish (delaysin publication, pending the protection of IP rights, should be minimised as far as is practically possible);
vii. With respect to PGR students, PGR students must comply with the University's appropriate regulations governing the submission of a thesis;
viii. If an error is discovered that devalues a publication's worth the senior author should promptly discuss the issue with the person to whom s/he reports at the University, should notify the co-authors and publish a correction as soon as possible, explaining the basis of reservations regarding the published results. Where published results are found to be in serious doubt, a retraction should be published as soon as possible;
ix. Researchers should seek to release research data after the research results have been published following independent peer review. However, the release of research data before peer review may be an appropriate part of public engagement. The current *Freedom of Information Act* (2000) (FoIA) also permits a member of the public to request to see recorded research data before publication.

1.4.1 FREEDOM OF INFORMATION

The current FoIA permits a member of the public to request any recorded information they think a public authority may hold (universities are public authorities for the purpose of the FoIA). Under the FoIA a public authority can refuse an FoI request for recorded information by applying an exemption or exception. However the onus is on the public authority to make the case for non-disclosure of information (information must be disclosed unless the public interest in maintaining

the exemption or exception is greater than the public interest in disclosing it). A public authority should consider the public interest that is relevant to the exemption or exception in question; a presumption runs through the FoIA that openness is, in itself, to be regarded as something which is in the public interest. When considering the public interest the following factors are relevant:

- furthering the understanding of and participation in the public debate of issues of the day;
- promoting accountability and transparency by public authorities for decisions taken by them;
- promoting accountability and transparency in the spending of public money (there will be a greater public interest in disclosing information relating to research that is publicly funded);
- allowing individuals and companies to understand decisions made by public authorities affecting their lives and, in some cases, assisting individuals in challenging those decisions (there will be a greater public interest in research that may have a particular impact on the public);
- bringing to light information affecting public health and public safety.

When weighing up whether or not it is in the public interest to disclose information about an issue(s) under the FoIA, the greater the amounts of money involved and/or the greater the number of people who are affected by the issue(s) concerned will weigh more heavily in favour of disclosure. The FoIA does not prevent a copyright notice being issued with information that is disclosed.

The FoIA offers some protection for information that is obtained in confidence from third parties: such information must have been obtained by the public authority from another person (a person may be an individual, a company, a local authority or any other legal entity) and disclosure of the information would give rise to an actionable breach of confidence. Information can be exempt if its disclosure would, or would be likely to prejudice the commercial interests of any person (including the public authority holding it).

Case Study

Researchers need to be both ambitious and competitive. As the Nobel Laureate Sir Peter Medawar once said: there are no prizes for being the *second* person to discover something: being first is what counts. Ambition, however, can easily spill over into ethically unacceptable behaviour, as the following shows.

In 1990 a colleague had published a pioneering study whose main result, while robust, was not quite as some might have expected. Twenty years later a researcher contacted him to say that he was repeating the study. They chatted about the project and in due course the researcher told him that he had obtained identical results. When the researcher ambitiously submitted his paper to *Nature* my colleague was one of the referees. Like the two other referees, he agreed that while the study constituted useful verification of the original result, it provided no additional insights. The manuscript was rejected. It was subsequently rejected by several other journals.

Months later my colleague received an automated email alert telling him that his work had been cited. On opening the message he saw that the 'verification paper' was now published (in a medium quality journal). However, as my colleague read through the paper to see how much it had changed, my colleague was horrified to see that the author had slated the original paper, specifically identifying several problems and citing my colleague – as 'personal communication' – as the authority. In other words the researcher made it appear that my colleague had denigrated his own work!

Somewhat put out, my colleague contacted the author to ask what he was playing at. The author's rather limp reply was that he had trouble getting the paper accepted and the editor of this particular journal had told him that unless he could make a good case, they too would reject it. So, what did he do? He 'made a good case' by lying. The author's behaviour was unethical, but so too

was the editor's: at the very least they should have checked that the assertions were true. Among other things, this incident raises the question of whether one should seek permission to cite someone as 'personal communication'.

1.5 GOOD R&I PRACTICES IN PUBLIC ENGAGEMENT AND DEMONSTRATING PUBLIC BENEFIT

"Public engagement describes the myriad of ways in which the activity and benefits of higher education and research can be shared with the public. Engagement is by definition a two-way process, involving interaction and listening, with the goal of generating mutual benefit" (source: The National Co-ordinating Centre for Public Engagement).

Researchers have a responsibility to communicate with and inform the public about their research, subject to any applicable conditions (for example set by a research funder, a research ethics committee, or a confidentiality agreement with a company); this includes informing the public about negative research results, where the R&I activity has been undertaken to accepted standards of practice. In some area of research (for example some types of health-care research) it is necessary to involve the public in, as well as inform the public about, the research.

Minimal acceptable practices in public engagement and demonstrating public benefit that the University expects to be followed:

i. Before communicating with the public researchers should attempt to assess the implications of their research for the public (should there be any implications this should guide the timing of, and methods for, communicating research);
ii. Where research is considered to have public benefit, before communicating research to the public researchers may need to, depending on the research, notify relevant regulatory bodies;
iii. Researchers should pause before making their research openly available online or disseminating research in other ways before independent peer review has taken place, as damage could be done if the research results are found, post-peer review, to be unreliable (however the release of research data before peer review may be appropriate for public engagement);
iv. Research results must be checked for their integrity before they are communicated (statistical limitations of results should be made clear);
v. When communicating, researchers must do so honestly, accurately and without bias, distortion, exaggeration, or knowingly misleading the public;
vi. Researchers should not allow others to mislead the public about their research and, should this happen, should correct the misleading information publicly;
vii. Where relevant, researchers should be alert to how their research results may be used by other individuals and organisations;
viii. Researchers are expected to be aware of the limits of their own professional expertise. When involved in public discussions, for example about the importance and potential application of research results, researchers are expected to communicate within areas of their professional expertise and, if necessary, to clarify when they are speaking as professionals from when they are speaking in a personal capacity as private individuals. If researchers clarify the limitations of their professional expertise, when communicating research to the public, the public is better able to judge the degree to which the research results have public benefit;
ix. Researchers should aim to explain their research in ways that are clearly understood by non-specialists; this may include how the research was developed and explanations of different forms of research evidence, as this will further improve public understanding and enable the public to participate in meaningful communication;
x. If feasible, the work of all contributors and collaborators should be properly acknowledged;
xi. If applicable, potential or real conflicts of interest should be declared.

***Higher practices in public engagement and demonstrating public benefit*, which the University's researchers should aspire to:**

i. Researchers should seek to encourage, and participate in, debate about the issues that their research may raise for society, paying proper consideration to the aspirations and concerns of others. As members of the research profession, researchers need to be careful in what they say as professionals, as their contributions to public debate may influence public opinion.

Case Study

Consulting widely across a range of stakeholders involved in cancer care

As in other scientific enquiries, the rationale for an Ethics Review when conducting a wider consultation across a range of stakeholders involved in cancer care is to ensure that research is conducted with integrity and in line with generally accepted ethical principles to protect both the participants and the researchers. An Ethics Review allows researchers to reflect critically not only on the moral dilemmas they will confront during the research but also to plan for its consequences. A major consideration is compliance with mandatory Research and Development requirements e.g. Department of Health's Research Governance Framework (RGF) for Health and Social Care; Regulations e.g. the Medicines for Human Use (Clinical Trials) Regulations 2004; funding and other requirements e.g. the ESRC Research Ethics Framework etc. identifying and addressing potential ethics (or other) risks and issues involved in doing the research. Checks are carried out on indemnity insurance, honorary contracts with the NHS Trust in which the research is being done, and on research quality (e.g. evidence of peer review). The choice of research techniques for data collection, coding and methods of analysis is a further key consideration.

We chose to use a three-round Delphi-based technique as a way of allowing iterative but yet open-ended enquiry. We started with a fairly rich stimulus for the first round of consultation because many of the stakeholders involved (patients, carers, staff, design consultants and others) would not necessarily think of themselves as experts in this area. A series of headings and suggestions for issues were drawn up informed by a literature review, detailed studies of existing cancer care buildings and workshops with patients and carers. To complement the results from the Delphi-based technique, we felt that the sensitive nature of this subject required face-to-face data elicited from people affected by cancer. While everyone was free to join all the interested parties in the Delphi consultation exercise, the sponsor also wanted to see events that raised the profile of the research around the country.

Of importance in both the Delphi consultation exercise and events is identifying participants and clarifying how they are to be contacted and recruited. A member of the research team with expertise in medical statistics established the sample size and other characteristics to ensure we obtained meaningful results. We defined our participants as all who are deemed to be potentially – or particularly – vulnerable (e.g. in relation to their capacity to understand the research, and thus give *fully informed* consent) and all whose *freely given* consent may be compromised because of their professional role, and who may be over-burdened in that role if required to participate in that research. Crucially, we used standard invitations, posters, consent forms and information sheets approved by a local review committee to recruit and invite participants via website and by contacting known cancer centres in the approximate catchment area for each venue for an event. We planned the events to be as much a social occasion as well as a working one, starting mid-morning with an open discussion focus group inviting participants to identify issues that they thought important in connection with environments for people affected by cancer. We asked participants to speak from their own personal experience and from the heart discussing issues amongst themselves. Typically, this discussion lasted for about one and a half hours. During a lunch break the main issues were identified from notes and a second, afternoon session allowed participants to prioritise these issues. The focus groups were moderated by someone with considerable experience of this kind of work throughout the NHS. To emphasize *freely given*

involvement, participants were assured that they would be free to leave at anytime during the events with counsellors present at all events to support those participants who may become distressed.

1.6 GOOD R&I PRACTICES IN HANDLING CONFLICTS OF INTEREST

An individual researcher may undertake a range of activities in addition to research and teaching. Researchers have external links with, and provide expert advice to, the private sector, public sector, voluntary organisations and local communities, are involved in collaborations, may be peer reviewers, journal editors, be involved in spin-out companies, and may also be engaged in other activities in a personal capacity not related to their contract of employment with the University. Such activities extend the University's reach and influence nationally and internationally. Researchers need to remain aware, however, of any real or potential conflicts of interest that may arise from undertaking a wide range of activities.

It is expected that the primary responsibility, interest and loyalty of the University's researchers will rest with the University, and that their primary commitment of time and intellectual energies should be to the University's activities; otherwise, a conflict of commitment arises.

Conflicts of interest should not adversely influence professional judgment. A conflict of interest can be real or reasonably be perceived by the wider public to be real (i.e. real or potential). A conflict of interest is real when the researcher has interests in the outcome of the R&I project that may lead to a personal advantage (or benefit a member of the researcher's family and/or friends) and which might, therefore, compromise the integrity of the R&I project. Personal advantage can be financial and/or non-financial (e.g. the outcome of the R&I project may promote or appear to promote a researcher's personal and/or ideological beliefs).
It is acceptable to have a conflict(s) of interest so long as the researcher is transparent about its existence and, where appropriate, takes steps actively to manage the conflict(s) of interest effectively in order that it does not compromise the integrity of the R&I project.

It is expected that researchers will undertake, and be seen to undertake, research in an impartial, independent manner, irrespective of who is funding the research.

Minimal acceptable practices in handling conflicts of interest that the University expects to be followed:

i. Recognise all real or potential conflicts of interest that could compromise the trustworthiness of their work (i.e. real and/or which other people could reasonably perceive to be conflicts of interest), and take steps transparently to disclose the conflicts of interest. Practical steps a researcher might take: declaring conflict(s) of interest by listing them on a webpage that has been set up about the R&I project; when evaluating a potential conflict of interest, consider how it might be perceived by the wider public (would others trust the researcher's judgment if they knew s/he was in this situation?);
ii. Real or potential conflicts of interest must be reported immediately to the Head of Department or Director of Finance, whichever is more appropriate;
iii. If a conflict of interest is of a type and severity that poses a risk of fatally compromising the integrity of the research, the researcher should not proceed with the research;
iv. Openly declare and justify all real or potential conflicts of interest at all stages in the R&I project and, particularly, at the following key stages:
    - In research funding applications;
    - Where applicable, in research ethics applications and research governance applications;
    - Where applicable, when seeking to recruit participants (i.e. as part of the process of seeking consent);

- Where feasible, when communicating with the public about research;
- In research publications;
- During commercialisation;
- Where applicable, when undertaking peer review.

v. In most situations a declaration of a conflict of interest, with a brief written record of that declaration, will suffice. However, sometimes agreement will be needed on how real or potential conflicts of interest can be actively managed. Practical steps a researcher might take:
   - modifying the R&I project's plan;
   - severing relationships that create real or potential conflicts of interest;
   - declaring a conflict(s) of interest in a meeting if the researcher believes there is an issue under discussion where the researcher has, or might reasonably be perceived to have, a conflict of interest (and not taking part in the discussion);
   - resolving not to act as a particular person's supervisor;
   - divesting or placing in trust certain financial interests;
   - declaring an interest to a sponsor or third party;
   - standing aside from any involvement in a particular project.

vi. All researchers should disclose and justify real or potential conflicts of interest in line with the University's *Financial Regulations*;

vii. The University's Policy Statement *Personal relationships and conflicts of interest in the workplace* should be consulted.

2. INFORMATION RELEVANT TO A SIGNIFICANT PROPORTION OF RESEARCHERS

2.1 GOOD R&I PRACTICES IN GRANT WRITING

***Minimal acceptable practices in grant writing*, which the University expects to be followed:**

i. Researchers are expected to be aware of the limits to their own expertise and to seek support when necessary in order to strengthen the quality of the grant application (for example by seeking advice on statistics);

ii. The content of the grant application should be accurate and transparent;

iii. The anticipated benefits/outcomes of the proposed project should be highlighted in the grant application, but should be neither exaggerated nor misleading.

2.2 GOOD R&I PRACTICES IN COLLABORATION

Collaborative R&I ranges from international projects, potentially involving institutions from both countries in the developing and developed world, to mid-range collaborations involving several institutions within one country, through to projects involving two researchers from different disciplines. Collaboration includes R&I projects between researchers from different disciplines in the University, and R&I projects between the University and other institutions in the UK and/or in other countries.

The distance between collaborating researchers can magnify issues that might impinge on a collaboration (e.g. cultural, language, financial, political). Key to effective collaboration is clear communication from the beginning between the researchers planning to collaborate, in order that expectations concerning respective roles, responsibilities, methods and analytical techniques, and standards of good R&I practice are clearly understood and accepted. Effective collaboration depends on the collaborators trusting each other and trust develops from regular, honest and open communication.

2.2.1 R&I COLLABORATIONS IN GENERAL

***Minimal acceptable practices in collaborations*, which the University expects to be followed:**

i. A researcher's goal should not only be to achieve the R&I project's scientific objectives, the goal should be also to strengthen the partnership with the collaborating researcher(s) so that by the end of the project there remains a legacy of goodwill which translates into a willingness to enter future collaborations. All collaborating parties should benefit fairly;
ii. When exploring who to collaborate with, researchers should seriously consider having in place confidentiality agreements to cover discussions of their ideas with prospective collaborators. Guidance: https://www.sheffield.ac.uk/rs/contract.
iii. With respect to larger, more complex research collaborations, recognising that at the beginning of the collaboration it can be hard to anticipate the exact roles and responsibilities of collaborators and contributors over the project's lifetime, researchers should seek early agreement on principles to guide, or a framework to agree, the roles and responsibilities of collaborators and contributors and on the nature and manner for communications between all involved. Having an agreement provides an objective process for clarifying what collaborators and contributors can expect from each other. In collaborative R&I the division of roles and responsibilities should be realistic, and if and when changes are made over the project, these changes should be communicated to all involved. An agreement, which may be a legally binding contract, should clarify collaborators' positions on the following issues (the agreement may refer to a plan which provides clarification):
    a. A project time-frame, including key milestones for evaluating project progress;
    b. Roles and responsibilities of the collaborating parties, including who leads each side of the collaboration (including leading discussions on authorship and acknowledgment criteria);
    c. IP: Expectations about ownership of IP rights and access rights should be discussed from the beginning and reviewed periodically over the project's lifetime. Researchers should be able to exploit the benefits of IP resulting from their individual contributions (or resulting from combined contributions) to the project. Researchers should be aware of any restrictions on the use of IP (e.g. disclosures related to IP that may be patentable);
    d. Data protection and confidentiality issues in line with data protection legislation (including agreement of which organisation(s) will act as the Data Controller for personal data processed as part of the research, if relevant);
    e. A shared understanding of safeguarding arrangements (including responsibilities and processes for reporting and addressing concerns or incidents);
    f. Financial issues;
    g. Resource sharing;
    h. Where applicable, transport of materials;
    i. Data sharing: Collaborating researchers should be able to request raw data from each other in order to see how R&I results have been reached;
    j. Conflicts of interest;
    k. Authorship and publication practices: Contributions made by various collaborating researchers during the project may change, which will change the attribution of credit and order of authors;
    l. Compliance with applicable regulations;
    m. Procedure for reporting and investigating witnessed or suspected incidents of research misconduct.
iv. Collaborators should agree how they will ensure the integrity, access and stewardship of the research data, who will present the research data at meetings and how collaborators will apportion credit to other collaborators in presentations that they deliver.

2.2.2 INTERNATIONAL R&I COLLABORATIONS

Undertaking international collaborative R&I particularly requires a cooperative and flexible attitude, an open mind and a willingness to learn about the culture and political context of the collaborator(s) country(ies).

Challenges can be more pronounced when collaboration is between researchers in resource-rich and resource-poor countries. Researchers in less developed countries may hold down several jobs to earn a living wage, may have different work and time constraints, and may require support from the resource-rich researchers in order to be able to contribute appropriately (e.g. to afford to travel to meetings to present research data).

Technical matters that may need to be addressed in order to undertake international collaborative R&I include having adequate insurance, a visa, and additional compliance requirements of collaborating countries.

***Minimal acceptable practices in international collaborations*, which the University expects to be followed (these are in addition to the practices expected of collaborations in general):**

i. From the beginning, and throughout the project, the researcher should take into account several different perspectives, in particular that of the overseas collaborator(s) and the employing institution(s), the end-users of the R&I and, if applicable, the perspective of human participants participating in the R&I project, and local key decision-makers. This should help inform the planning and implementation of the project and help avoid and/or prepare for ethical dilemmas; furthermore, this will allow the development of a shared understanding of how research teams, research participants and their communities will be safeguarded against potential harms;

ii. Where collaborating researchers do not share the same mother language, care should be taken to ensure that misunderstandings do not occur due to inadequate translation, and to ensure that there is a shared understanding of key concepts and words. If there are different styles of academic writing, which could cause challenges to arise, then collaborating researchers should make each other aware of these styles;

iii. The researcher should attempt to strengthen knowledge of the culture and political and regulatory context of the collaborator's country (e.g. cultural traditions may affect the importance attributed to hierarchy within a research team or may affect the position of female researchers, which may translate into differences in R&I practice over, for example, approaches to authorship; for example knowledge of a country's political climate may be necessary to avoid harm that otherwise may result from a lack of awareness of the climate);

iv. Researchers in different countries may follow different practices that guide how they undertake R&I, practices which may be influenced by culture; this can raise ethical dilemmas for collaborating researchers if they differ in their understanding of what constitutes acceptable R&I practices (e.g. this may be around data quality or authorship).

***Higher practices* in international collaborations, which the University's researchers should aspire to (these are in addition to the practices expected of collaborations in general):**

i. It can be valuable, depending on the project, to take advice from experts in foreign affairs and international development who are familiar with the local context and/or have developed local contacts and knowledge (e.g. staff at the British Council);

ii. A procedure for reporting and investigating witnessed or suspected incidents of research misconduct should be clarified from the beginning (in an agreement between the collaborators). Best practice is to follow the *Organisation for Economic Cooperation and Development (OECD)'s Global Science Forum Coordinating Committee's* boilerplate text for international collaborative research projects.

Further guidance on managing the ethics and integrity challenges of international research

collaborations can be found in the University Research Ethics Committee's leaflet: https://www.sheffield.ac.uk/polopoly_fs/1.761720!/file/IRCBrochure.pdf

Case Study

Research Libraries, Copyright and Permissions: Digitising Manuscripts

In 2011 a privately-owned manuscript of John Froissart's 14th-century *Chronicles* not seen by scholars for decades popped up in Paris and was promptly sold to another private collector for €450,000; days later it had once again disappeared from public view. Even public libraries can be wary of letting scholars get too close to their original manuscripts (for understandable reasons); you may have to work with microfilm. Developing mutual trust between yourself, a librarian and conservator can yield big dividends, though, leading to large-scale digitisation projects and even public exhibitions. Due diligence implies making sure you know all the ins and outs of a library's consultation and handling rules, copyright restrictions and procedures for obtaining permission to photograph and publish the results. National libraries may be happy to embark with you on a digitisation project but insist on using their own photographer and studio; the process is sometimes automated (resulting in folios being missed during a one-off photoshoot) and you may never meet the photographer.

Smaller research libraries may have rich collections but poor staffing and infrastructure. It costs up to £8k to hire a skilled photographer to set up their equipment for a shoot. Insurance and copyright issues have to be addressed, as do permitted light levels, the timespan available for the manuscript to be exposed to light in any given year (e.g. during a photoshoot or exhibition) and agreed standards for image capture. Nothing will happen, though, unless the library is convinced that your photographer knows how to handle fragile material, and unless the manuscript has been cleared for photographic work by the conservator. When everything comes together you leave the library a fortnight later with a wonderful research tool; the library, meanwhile, retains a first-class digital copy for other researchers to use as first call (though nothing replaces contact with the real thing).

Even when your photographer is highly skilled, conservators may threaten legal action if the photographer does anything to damage their fragile manuscript, even as they egg her/him on to do the work! Trust can take weeks or even months to develop. It can take minutes or years to secure the rights to reproduce photographed material, and to do so free of charge. Much depends on the library's perception of the researcher's behaviour, the quality of their prior research outputs, and the reputation of their publishers. Some libraries charge you nothing for the right to publish an entire digitised manuscript; others may invoice you for quite a hefty sum for a handful of images. It may take a further 1–2 years for the formal permission letter to arrive; publishing output before the agreed date could land you in court. Even when everything's been cleared, you still need to ensure that copyright straplines are exactly right. If you're publishing on a website, additional, stringent requirements come into play. Is it all worth it? It certainly is, but if you still need convincing, take a look at the following:
www.hrionline.ac.uk/onlinefroissart/apparatus.jsp?type=context&context=manuscript_facsimiles

2.3 GOOD R&I PRACTICES IN PEER REVIEW

***Minimal acceptable practices in peer review*, which the University expects to be followed:**

i. Peer reviewers should openly declare and justify all real or potential conflicts of interest;
ii. Peer reviewers are expected to be aware of the limits of their own professional expertise, to undertake available training, and to only review within their area of expertise;

iii. Peer reviewers should ensure they are informed about, and comply with, the criteria to be applied when reviewing;
iv. Peer reviewers should properly consider research that challenges or changes accepted ways of thinking;
v. Peer reviewers should provide fair, timely and rigorous evaluations and respect confidentiality when peer reviewing other researchers' work;
vi. Where a journal has in place its own journal-specific ethics policy for peer reviewers then, if this does not conflict with the GRIP Policy, peer reviewers are expected to follow the journal's ethics policy for peer reviewers as an extra layer of R&I governance.

***Higher practices in peer review*, which the University's researchers should aspire to:**

i. Replication of research observations/results is only possible if the paper submitted for peer review contains evidence that sufficiently explains the conditions under which the claimed observations/results occurred; not all research is reproducible but it should be possible to replicate the conditions under which the research took place.

2.4 GOOD R&I PRACTICES IN RESEARCH INVOLVING ANIMALS

The University's *Ethical Policy on the Use of Animals* requires the University's researchers to comply with this policy, whether working at the University or otherwise with collaborators elsewhere, and to fully meet the national legislative requirements that apply.

2.5 GOOD R&I PRACTICES IN CLINICAL TRIALS/HUMAN INTERVENTIONAL STUDIES

Clinical trials of investigative medicinal products (CTIMPs), and other types of health and social care research involving an intervention in human participants (as set out in the University's definition: https://www.sheffield.ac.uk/rs/ethicsandintegrity/clinicaltrials/index), are subject to additional transparency requirements. These requirements are set out in the World Medical Association's 'Declaration of Helsinki - Ethical Principles for Medical Research Involving Human Subjects', and have been adopted by many funders and regulators of health and social care research.

There are 3 key obligations for researchers in relation to transparency of clinical trials/human interventional studies:

a. Recording of study details in advance of the research commencing, in a publicly accessible registry (unless a valid reason for deferral exists, e.g. commercial sensitivity, in which case the study should be registered as soon as this reason no longer exists);
b. Reporting of (at least summary) results (including on the registry where the study was originally registered) in a timely fashion following the end of the trial. This should ideally be within12 months, unless there is a valid reason for a delay such as timeframes for publication processes, or restrictions imposed by commercial funders;
c. Making the findings (whether positive or negative), and wherever possible, the data, from clinical trials and human interventional studies accessible with adequate consent and privacy safeguards, in a timely manner after they have finished, in compliance with any applicable regulatory standards.

The purpose of these obligations is to ensure that a complete and accurate record of all clinical trials/human interventional studies are available as part of the research record. This will:

- enable other researchers, and those involved in making decisions about patient treatments, to access all relevant information about research that has been/is being undertaken;
- ensure that potentially valuable information about research is not lost;
- ensure that the valuable contribution of participants in clinical trials and human interventional studies is not wasted;
- ensure that public money used to fund clinical trials and human interventional studies is not

wasted.

The University expects all researchers involved in clinical trials and health and social care human interventional studies to meet these obligations, in addition to complying with any specific contractual or regulatory requirements that apply to their research.

SECTION 3

ANNEX

1. THE GRIP POLICY COMPLEMENTS SEVERAL POLICIES AND STATEMENTS

The following University policies have a key relationship to the GRIP Policy:

i. The University's strategic plan: http://www.shef.ac.uk/strategicplan/mvi
ii. The University's *Sheffield Academic Statement*: http://www.shef.ac.uk/hr/sheffieldacademic/statement
iii. The University's R&I Committee: https://www.sheffield.ac.uk/rs/committees/ric
iv. The University's Preventing Harm in Research and Innovation Safeguarding) Policy: https://www.sheffield.ac.uk/rs/ethicsandintegrity/safeguarding
v. The University's Research Ethics Committee: https://www.sheffield.ac.uk/rs/committees/ethicscommittee
vi. The University's *Ethics Policy Governing Research Involving Human Participants, Personal Data and Human Tissue*: https://www.sheffield.ac.uk/rs/ethicsandintegrity/ethicspolicy/index
vii. The University's *Position Statement in Support of Open Access:* http://librarysupport.shef.ac.uk/OpenAccessPositionstatement.pdf
viii. The University's copyright guidance: https://www.sheffield.ac.uk/library/copyright
ix. The University's *Anti Bribery Statement:* http://www.shef.ac.uk/hr/guidance/contracts/antibribery
x. The University's position on fraud and *University Fraud Response Plan* (see the Finance website): http://www.shef.ac.uk/finance/staff-information/howfinanceworks/fraud_and_whistle_blowing/index
xi. The University's *Policy on Investigating and Responding to Allegations of Research Misconduct* (see the Department of HR website): https://www.sheffield.ac.uk/hr/guidance/academicstaff/researchmisconduct
xii. The University's *Policy and Procedure on Public Interest Disclosure: http://www.sheffield.ac.uk/hr/guidance/contracts/pid*
xiii. The University's *Policy on Personal Relationships and Conflicts of Interest in the Workplace* https://www.sheffield.ac.uk/hr/guidance/contracts/conflictsofinterest and the University's *Financial Regulation on Conflicts of Interest* http://www.sheffield.ac.uk/finance
xiv. The University's Health and Safety policies and procedures: https://www.sheffield.ac.uk/hs/landing
xv. *Freedom of Information* guidelines: http://www.shef.ac.uk/foi/
xvi. The University's Staff Review and Development Scheme (SRDS): http://www.shef.ac.uk/hr/guidance/srds
xvii. The *Code of Practice for Research Degree Programmes*: http://www.sheffield.ac.uk/ris/pgr/code
xviii. The University's *Guidance on the Use of Unfair Means in the Assessment Process*: http://www.shef.ac.uk/lets/design/unfair/intro
The Student Conduct and Appeals Office may be consulted at any stage (https://www.sheffield.ac.uk/sss/sas/contacts#tab05)
xix. The University's *Student Discipline Regulations and the Complaints Procedure*: https://www.sheffield.ac.uk/ssid/complaints-and-appeals

xx. The University's research governance (RG) procedure applies to health and social care research: https://www.sheffield.ac.uk/rs/ethicsandintegrity/governance. Human interventional studies are one type of health care research and the University has in place a procedure which specifically applies to human interventional studies which the University is the RG sponsor of: https://www.sheffield.ac.uk/rs/ethicsandintegrity/clinicaltrials/index

xxi. The University's position and *Ethical Policy on the Use of Animals* in research: https://www.sheffield.ac.uk/rs/ethicsandintegrity/animal-research

2. THE UNIVERSITY'S POSITION ON WHAT IS MEANT BY UNACCEPTABLE R&I PRACTICES

Unacceptable R&I practices are sometimes referred to as questionable research practices. Whilst all unacceptable practices are to be avoided and can lead to different adverse consequences (such as financial loss, waste of resources, or causing physical, psychological and/or reputational harm), the appropriate remedy may range from advice, guidance, mentoring or formal training through to an investigation of potential research misconduct.

Honest errors or mistakes that result in unacceptable R&I practice(s) should be disclosed transparently and quickly, as and when they are made and/or discovered, and the appropriate reasonable remedy is likely to be supportive (the University has a culture of encouraging constructive discussion of ethical dilemmas and challenges in which honest errors and mistakes can be learnt from). By comparison, the appropriate remedy for researchers who deliberately, dangerously or negligently deviate from accepted practices or fabricate, falsify or plagiarise their research proposals, research data or research results will be to activate the University's *Policy on Investigating and Responding to Allegations of Research Misconduct.*

Specifically the University regards the following R&I practices as unacceptable (sometimes referred to as corrupt practices, questionable practices or the use of unfair means):

1. **Fabrication** (creation of/making up false data or other aspects of research including documentation and participant consent);
2. **Falsification** (inappropriate manipulation and/or selection of data, imagery and/or consents);
3. **Plagiarism** (general misappropriation or use of others' ideas, IP or work (written or otherwise), and submitting them as your own without acknowledgement or permission).
    a. Plagiarism can be either intentional or unintentional and may take the form of cutting and pasting, taking or closely paraphrasing ideas, passages, sections, sentences, paragraphs, drawings, graphs and other graphical material from books, articles, internet sites or any other source;
    b. Submitting bought or commissioned work (for example from internet sites, essay banks or mills) is an extremely serious form of plagiarism. This may take the form of buying or commissioning either the whole piece of work or part of it and implies a clear intention to deceive the examiners. The University also takes an extremely serious view of any researcher who sells, offers to sell or passes on their own assessed work to others;
    c. Double submission (or self-plagiarism) is resubmitting previously submitted work on one or more occasions (without proper acknowledgement). This may take the form of copying either the whole piece of work or part of it. Normally credit will already have been given for this work;
    d. Collusion is where two or more people work together to produce a piece of work, all or part of which is then submitted by each of them as their own individual work. This includes passing on work in any format to another student. Collusion does not occur where students involved in group work are encouraged to work together to produce a single piece of work as part of the assessment process.

    At the University you have access to plagiarism detection software in the form of Turnitin: http://www.sheffield.ac.uk/cics/turnitin

4. **Misrepresentation:**
    a. of data (e.g. suppression of relevant results and/or data, or knowingly presenting a flawed interpretation of data);
    b. undisclosed duplication of publication (including undisclosed duplicate submission of manuscripts for publication); a practice that is sometimes referred to as *salami slicing* wherein a publication is broken down into least publishable units so as to be able to present a larger number of published titles. Re-publication of research in another language is acceptable, provided that there is full and prominent disclosure of its original source at the time of submission (researchers must take all reasonable steps to obtain permission from the original publisher before republishing research results);
    c. of interests (including failure to declare material interests either of the researcher or of the funders of the research);
    d. of qualifications and/or experience (including claiming or implying qualifications or experience which are not held);
    e. *gift or guest or honorary authors* (naming as authors those who took little or no part in the research in order to improve the chances research will be published or to increase the perceived status of a publication or to enhance an individual's career development);
    f. *ghost authorship* (not naming as authors those who did take part in the research);
    g. including individuals as authors (e.g. as lead author or co-author) without their agreement or permission to be named as authors.
5. **Mismanagement or inadequate preservation of data and/or primary material:**
    a. failure to keep clear and accurate records of the research procedures followed and the results obtained, including interim results;
    b. failure to hold records securely in paper or electronic form;
    c. failure to make relevant primary data and research evidence accessible to others for reasonable periods after the completion of the research;
    d. failure to manage data according to the research funder's data policy and all relevant legislation;
    e. failure to, wherever possible, deposit data permanently within a national collection.
6. **Breach of duty of care:**
    a. disclosing the identity of individuals or groups involved in research without their consent, or other breach of confidentiality;
    b. placing anyone involved in the research in danger, whether as subjects, participants, or associated individuals, without their prior consent and without appropriate safeguards even with consent; this includes reputational danger where that can be anticipated, and also the violation of protocols in the case of clinical trials;
    c. not taking all reasonable care to ensure that risks and dangers, broad objectives, and sponsors of the research are known to participants or their legal representatives, to ensure appropriate informed consent is obtained properly explicitly and transparently;
    d. not observing legal, and ethical requirements or obligations of care for human or animal subjects, human organs or tissue used in research, or for the protection of the environment;
    e. stealing and/or insufficient care for cultural objects (e.g. that are precious to indigenous peoples);
    f. a Supervisor not working with a postgraduate research student (PGR) to establish an effective supervisory relationship;
    g. a PGR student not working with a Supervisor to establish an effective supervisory relationship;
    h. improper conduct in peer review of research proposals or results (including manuscripts submitted for publication) (e.g. failure to disclose conflicts of interest; inadequate disclosure of limited competence; misappropriation of the content of material; rejecting a paper in order to suppress a contrary opinion; and breach of confidentiality or abuse of material provided in confidence/taking undue or calculated advantage of knowledge obtained during the peer review process);

i. the University and/or Faculty and/or academic department not supporting researchers' academic freedom in those situations where researchers are faced with unreasonable pressure from external organisations (for example from a funder or other interested party with a vested interest in the research) to produce research results that are in their interests or to suppress results that are not in their interests.

7. **Abuse of status as a member of the general research profession** (deliberately exploiting status and reputation as a research professional, based upon particular expertise, in order to make public observations or statements on matters for which the professional has no expertise; negligently making public observations or statements on matters for which the professional has no expertise, without publicly declaring the lack of expertise);

8. **Taking reprisals against an individual(s) who made an allegation of research misconduct and/or attempting to cover up reprisals taken against the individual(s).**

3. FURTHER INFORMATION ON GOOD R&I PRACTICES (THE SMALL PRINT):

3.1 Record-keeping of research evidence (quantitative and qualitative data):

Depending on the discipline-specific methodology employed, accurate and complete linear audit trails of research data, be it quantitative or qualitative, in paper and / or electronic format, should be developed, maintained and secured.

Collecting and recording data:
When raw data are being recorded in handwriting, whether by researchers or human participants, they should be recorded promptly using an indelible instrument, preferably on the day they are obtained, to reduce the risk of error resulting from the poor practice of recording data long after the date on which data has been created. Unless the use of erasable implements, like pencils, is a standard accepted practice and norm in a researcher's particular research discipline, they should not be used when entering data. Written records must be accurate, contemporary, clear, complete, durable and legible. When a researcher is recording data in handwriting the researcher should sign and indicate the date in the written record.

Depending on the discipline and nature of the research activity, the Principal Investigator should at regular intervals review the main written record of research evidence associated with the project (e.g. a (laboratory) notebook, file), and countersign and date it to signify that the entered data are accurate and complete. Any queries related to data entered in a (laboratory) notebook or file should be discussed immediately with the researcher who entered the data. Both the Principal Investigator and the researcher concerned should sign any resultant modifications to the recorded data. The benefits of countersigning a project's main written record of research evidence at regular intervals:

- Assists in the protection of intellectual property rights;
- Safeguards researchers and the University from allegations of research misconduct;
- Demonstrates good R&I practices;
- Assures auditors and research funders that robust academic supervision is in place.

Where possible and appropriate, written records of research evidence should be sequentially entered into a bound hard-backed, indexed notebook, in which the pages have been numbered consecutively. Where the nature of data collection precludes the above, then well-kept, ordered and precise files (appropriately and regularly signed off) could prove acceptable.

Collecting and recording electronic data:
A back up copy of electronic data should be maintained in two separate locations in a format appropriate to the task and the exact location of electronic data recorded on an index document. If possible, when data are recorded electronically, computer and / or instrument printouts should be affixed to the correct notebooks in appropriate order. Copies of relevant software, particularly the versions used to process electronic data, should be retained to ensure access, in the short-term, to the electronic data. Further guidance on how to preserve electronic data and ensure continued access in the medium to long-term can be obtained from the University's Records Management Team (records@sheffield.ac.uk).

Recording materials/samples:
The term *material/sample* embraces both quantitative and qualitative research evidence to include, for example, autoradiographs, chart recordings, machine print outs, photographs, questionnaires and tapes. Materials/samples should always be labelled by date and by an identifier number that is cross-referenced to the research project's main written record of research evidence. This cross-referenced identifier number should be recorded clearly in the appropriate main written record, along with other relevant details, preferably on the date that the materials / samples are obtained. Where research evidence and / or results are recorded on audio or videotape (e.g. interviews) the tape housing should be labelled.

Wherever possible, materials/samples should be affixed to the main written record of research evidence. The subsequent removal of affixed materials/samples should be avoided. If it is likely that they will need to be removed at a future date then two copies of the particular material/sample

should be made at the time they are generated. If making copies is not practicable, then the reason for removing the original affixed material/sample should be recorded in the appropriate main written record and its exact location recorded on and specified by an index document. If affixing materials/samples to the main written record of research evidence is not feasible, due to the size or volume of materials/samples, they should be maintained in a secure location and their exact location recorded on an index document.

Documentary research evidence (for example minutes, reports):
Written records should be compiled and maintained on the research methodology and procedures followed, approvals granted, decisions taken and the analysis and interpretation of results, including interim results, to create a transparent, linear audit trail of the research decision-making process.

Modifications to research evidence:
The pages of the main written record of research evidence should never be removed. Any modifications that are made at a later date to research evidence should be clearly noted as such in the project's main written record of research evidence (e.g. a (laboratory) notebook or file), the date of the modification stated, and entered note signed by the researcher who made the modification and countersigned by the Principal Investigator. The rationale for the modifications should also be clearly stated, legibly and in full.

Security of research evidence:
An index document, paper- or electronic-based, showing the exact location of individual research project records (quantitative and documentary) should be maintained and updated. Original research evidence, both electronic- and / or paper-based, should be securely stored for an appropriate time period. If necessary, researchers must be able to retrieve or reproduce lost data. Therefore back up records should be made at regular intervals and kept securely for electronic data stored on a computer. An individual member of the research project staff should be assigned responsibility for this. If possible, for particularly important data a hard copy should be made, stored in a secure location, and cross-referenced to the original. Both quantitative and documentary research evidence should, wherever possible, be stored in or close to the research location from which they were generated.

Maintaining audit trails:
Research evidence should be maintained and located in a way that permits the appropriate audit processes to be effective. A member of the research project should be assigned responsibility for maintaining the paper- and/or electronic-based audit trails. A project's documentary research evidence should be able to provide a clear understanding of a research project's development. The benefits of having an accurate and complete audit trail:

- Demonstrates good R&I practices and strengthens the reliability of research evidence;
- Safeguards researchers and the University from allegations of research misconduct;
- Protects intellectual property rights;
- Demonstrates robust practices to internal and external auditors and research funders.

Records should contain sufficient detail to provide clear answers to questions concerning the validity of data or the conduct of research activities. Such questions may arise following the recording of research evidence, and the existence of accurate, contemporary, clear, complete, durable and legible records is invaluable should this occur. Errors detected following the publication of results could be mistaken for research misconduct if a researcher could not subsequently provide valid corroborative research evidence.

In line with the University's Financial Directives and Procedures, records for the current and immediately preceding financial year should be retained in an immediately accessible area so as to be readily available to external and internal auditors. To comply with accounting requirements under the Companies Acts and the requirements of the Inland Revenue and Customs and Excise, financial records shall be retained for the current accounting year and for the six previous years. This requirement relates to all forms of business records including purchase and sales invoices, orders,

delivery notes, petty cash vouchers and supporting accounting records, together with the central accounting records held by the Finance Department.

Monitoring:
Records of research evidence should be monitored at regular intervals to ensure their accuracy and completeness. The progress of a research project towards meeting its research sponsor conditions should be monitored at regular intervals. The Principal Investigator or his/her nominated member of the research project staff should be assigned responsibility for these tasks.

Timesheets:
If the completion of timesheets is a mandatory condition of the project's research sponsor then the research project's staff should complete standard timesheets, which provide details of their research activities on a daily basis. If timesheets are mandatory then a research project's Principal Investigator should countersign the timesheets of research project staff at regular intervals. Signed timesheets should be filed together sequentially. Timesheets should not be completed retrospectively.

3.2 Working with substances that are hazardous to health

- Where appropriate risk assessments, complying with the regulations on control of substances hazardous to health, should be prepared prior to research work being undertaken;
- Waste should be disposed of and recorded in accordance with these practices.

3.3 Equipment use

- If using equipment it is important to check and calibrate the equipment in order to ensure the accuracy of research data that is collected;
- Equipment used to generate research data should be appropriately located, safe, suitable for the purpose, of appropriate design, and of adequate capacity;
- Equipment used should be calibrated and serviced regularly by trained staff to ensure optimal performance and to strengthen the validity of research results;
- Accurate and complete research records should be developed, maintained and secured of calibration, servicing, faults, breakdowns and misuse of equipment used to generate data.

3.4 Intellectual Property (IP)

A useful source of information is the UK Intellectual Property Office.
(a UK Government website)

- IP refers to the outputs of creative endeavour that can be protected under legislation relating to patents, trade-marks, copyright and design rights;
- IP includes, but is not limited to: research data and other results of research, ideas, processes, software, hardware, apparatus and equipment, substances and materials, and artistic and literary works, including academic and scientific publications;
- Prior to the commencement, or at the outset, of a research project there should be clarity as to the ownership of research evidence and research results and arising IP;
- The research project contract should have a clause(s) clarifying the IP rights of the:
  - Research sponsor.
  - Relevant partners.
  - Individual researchers.
  - The University.
- A mutual agreement on publication strategy, which is subject to regular review, should also be included at the outset, as it will facilitate effective management of any IP rights arising as a result of the collaborative project;
- The regular countersigning of a project's research records (generally (laboratory) notebooks), where applicable, is good supervisory practice and can be essential to the protection of IP rights. This is because unlike Europe, where 'first to patent' is the rule, American law operates in respect of 'first to invent'. In a patent litigation situation in the USA the lawyers would examine the research records for proof of invention and time of invention.

Given the importance of the US market for any technological exploitation well audited research is therefore critical to success;

- Researchers should follow the University's IP rights procedures for exploiting IP: https://www.sheffield.ac.uk/hr/az/patent;
- Specific guidance for postgraduate research students on IP is available in the University's *Code of Practice for Research Degree Programmes*;
- The language used for writing research records should be English. It may be that a researcher chooses to keep notes in a non-English, native language but if so such notes should be in addition to the English written research records.

4. INTERNAL SOURCES OF SUPPORT:

The University's professional services provide advice and support with respect to various aspects of the GRIP Policy:

Finance currently provides advice on: Insurance, conflicts of interest, fraud, bribery and whistleblowing

Human Resources (HR) currently provides advice on: Investigating and responding to allegations of research misconduct, and on personal relationships and conflicts of interest in the workplace

Research Services (R&IS) currently provides advice on:
Collaborations, contracts (including confidentiality agreements), grant writing, intellectual property, patenting, peer review, PGR progression, public benefit and impact, research ethics and integrity, research funder requirements, research governance, research safeguarding, responsibilities associated with managing research staff (many of whom are on fixed-term research contracts), responsibilities associated with supervising PGR students, and for information about the University's R&I Committee and the University's Research Ethics Committee

Partnerships and Regional Engagement currently provides advice on:
Economic development, knowledge exchange, partnerships, public engagement

Student Support Services currently provides advice on: The use of unfair means in the assessment process, the Student Discipline Regulations, the Complaints Procedure

The University Library currently provides advice on: Research data management, open access, the dissemination of research papers and research results to avoid breach of copyright

The University Secretary's Office currently provides advice on:
Freedom of Information, records management

5. UNIVERSITY ACADEMIC MEMBERS OF STAFF WHO HAVE CONTRIBUTED CASE STUDIES TO THE GRIP POLICY:

Emeritus Professor Peter Ainsworth, Department of French
Professor Tim Birkhead, Department of Animal and Plant Sciences
Dr Miles Larmer, Department of History
Dr Lynda Partridge, Department of Molecular Biology and Biotechnology
Dr Michael Phiri, School of Architecture
Professor Roger Watson, School of Nursing and Midwifery

6. SOURCES CONSULTED IN THE DEVELOPMENT OF THE GRIP POLICY, WHICH PROVIDE ADDITIONAL USEFUL ADVICE

1. Anderson M S, Steneck N H, *International Research Collaborations* (2011) Routledge
2. The Australian Government, *Code for the responsible conduct of research* (2007)
3. The Committee on Publication Ethics (COPE), *Cooperation between research institutions and journals on research integrity cases* (2012)
4. COPE, *Guidelines on Good Publication Practice* (2000)
5. COPE, *How to handle authorship disputes* (2003)
6. Council of Europe, *Convention for the protection of human rights and fundamental freedoms* (2010)
7. Department of Health, *Research Governance Framework for Health and Social Care* (2005) (now replaced by the *UK policy framework for health and social care research, 2017)*
8. European Science Foundation, *Code on Research Integrity* (2010)
9. European Union, *The RESPECT Code of Practice for Socio-Economic Research* (2004)
10. The Information Commissioner's Office, *Freedom of information legislation and research information: guidance for the higher education sector* (2011)
11. JISC, Freedom of Information and research data: Questions and answers
12. Macrina, F L *Scientific Integrity* (2005), ASM Press
13. The National Committee for Research Ethics in Norway, *Guidelines for research ethics in the social sciences, law and the humanities* (2006)
14. The National Co-ordinating Centre for Public Engagement
15. The Polish Academy of Sciences Committee for Ethics in Science, *Good Manners in Science: A set of principles and guidelines* (2001)
16. The Quality Assurance Agency (QAA) *UK Quality Code for Higher Education* (2012)
17. Research Councils UK (RCUK), *Concordat for Engaging the Public with Research* (2011)
18. RCUK, *Policy and Code of Conduct on the Governance of Good Research Conduct* (2009)
19. The Royal Academy of Engineering, *Statement of Ethical Principles* (2005)
20. *The Concordat to Support the Career Development of Researchers* (2008)
21. The Second World Conference on Research Integrity, *Singapore Statement on Research Integrity* (2010)
22. The Swedish Research Council, *Good Research Practice: What is it?* (2006)
23. The UK Data Protection Act (1998) (replaced in 2018 by the General Data Protection Regulation and UK Data Protection Act 2018)
24. The UK Freedom of Information Act (2000)
25. The UK Research Integrity Office, *Code of Practice for Research: promoting good practice and preventing misconduct* (2009)
26. UKRIO and COPE, *Guidance for researchers on retractions in academic journals* (2010)
27. The US Institute of Medicine National Research Council of the National Academies, *Integrity in Scientific Research: Creating an environment that promotes responsible conduct* (2002) The National Academies Press
28. The US National Academy of Sciences, National Academy of Engineering, and Institute of Medicine, *Ensuring the integrity, accessibility and stewardship of research data in the digital age* (2009) The National Academies Press
29. The US Office of Research Integrity, *Introduction to the responsible conduct of research* (2007)
30. World Medical Association, *Declaration of Helsinki* (2008)