1 PURPOSE

This document should be read in conjunction with the Research Integrity section of Cancer Research UK’s Grant Conditions, and provides further information and additional guidance to the clauses and conditions contained therein.

It should be noted the additional guidance should not be interpreted as rules, and are intended to provide further clarity rather than replace the Grant Conditions.

2 SCOPE

This information will be of use to institutions and organisations in receipt of CRUK funding and contains a number of recommendations towards supporting research integrity.

CRUK strongly encourages all Host Institutions to adopt these measures, and in particular, would expect the CRUK Institutes (as defined in 3.4) to be at the forefront of implementing the steps, minimum standards and practices outlined in Section 5 to help mitigate the risk of scientific misconduct occurring.

3 DEFINITIONS

3.1 Complainant: A person making allegations of Scientific Misconduct against one or more Respondents.

3.2 Grantholder: The lead applicant, any joint applicant as specified in the Grant Award Letter or any persons to whom the Host Institution allocated the grant or any part thereof.

3.3 Host Institutions: The university, institution or other body at which some or all of the research funded by the grant will be carried out.

3.4 Institute: the five core-funded Cancer Research UK Institutes, namely Cancer Research UK Beatson Institute, Cancer Research UK Cambridge Institute, Gray Institute for Radiation Oncology & Biology, Cancer Research UK London Research Institute and Cancer Research UK Paterson Institute

3.5 Respondent: The person against whom allegations of Scientific Misconduct have been made. He/She must be a present or past employee of the Host Institution investigating the allegation of Scientific Misconduct.

3.6 Scientific Misconduct: See Section 4.
4 BACKGROUND

Although still relatively rare, there has been increasing concern among industry, scientific publishers and the academic community about the reproducibility of scientific data; this is part of the perceived notion (whether accurate or not) that the number of cases of scientific misconduct is growing.

The issue is complex and the potential causal factors are multifarious – increases in the number of journals to publish in, pressure to publish to drive career progression, online access allows for greater scrutiny by more eyes, technical nature of the research, unintended introduction of bias, deliberate fraud etc.

For the purposes of this document Scientific Misconduct is defined as:

*the deliberate misrepresentation of scientific results or procedures, including but not limited to, falsification, fabrication, plagiarism, or the abuse of confidentiality with respect to unpublished data either by an individual directly, collusion or a group conspiracy. It also includes serious or dangerous deviation from accepted ethical standards in research, in following scientific protocols that result in harm to humans, animals, the environment or equipment. It does not include inadvertent errors or honest differences in the execution, interpretation or evaluation of the research, where no intentional deception is planned.*

The following guidance outlines a number of measures which should be considered in attempting to mitigate the risk of scientific misconduct occurring in the first instance.

5 GUIDANCE

5.1 The Concordat to Support Research Integrity

5.1.1 Cancer Research UK is a supporter of Universities UK’s Concordat to Support Research Integrity (hereafter known as the Concordat) published in July 2012, and as such is committed to the following five principles:

- Maintaining the highest standards of rigour and integrity in all aspects of research; both the research itself and any resulting publications.
- Ensuring that research is conducted according to appropriate ethical, legal and professional frameworks, obligations and standards
- Supporting a research environment that is underpinned by a culture of integrity and based on good governance, best practice and support for the development of researchers
- Using transparent, robust and fair processes to deal with allegations of research misconduct should they arise
- Working together to strengthen the integrity of research and to reviewing progress regularly and openly
5.1.2 As a supporter of the *Concordat*, Cancer Research UK operates to the highest standards of integrity, and expects the same of its Grantholder(s) and his/her Host Institution.

5.1.3 Cancer Research UK has taken the opportunity to embed these principles into their *Grant Conditions* in order to nurture a culture based on the *Concordat’s* principles. We would encourage others to do likewise.

5.2 **Inductions**

5.2.1 Introductory sessions are a good opportunity to instil the tenets of the *Concordat*. Induction sessions on research integrity and an introduction to the policies outlined in Section 5.5 could be held to which all new research staff should be encouraged to attend.

5.2.2 Effective people management is key to fostering a culture of research integrity. All new Group Leaders should be given the opportunity to improve/refresh their management skills by attending a course (e.g. EMBO’s Laboratory Management Course) that covers these issues.

5.2.3 Mentoring of new group leaders by senior staff is to be encouraged; particular guidance should be provided when a Junior Group Leader recruits lab members for the first time.

The practice of holding informal workshops/retreats for group leaders to share experiences and promote further development is another option that could be explored.

5.2.4 Where resource allows, consideration should be given to hosting workshops or training courses to provide further guidance on practical measures, such as responsible authorship and publication, record keeping and image processing.

5.3 **Peer Review**

5.3.1 Peer review should be considered a primary control route for mitigating scientific misconduct. Regular meetings should be held to allow research being undertaken to be scrutinised by peers and group leaders.

5.3.2 Every opportunity to scrutinise research being carried out should be taken. Such opportunities could include:

- Students’ meetings
- Individual lab meetings
- Group Leader meetings
- Departmental/Institute-wide meetings
- Inter-disciplinary meetings
5.3.3 Where possible, papers and funding applications should be peer reviewed prior to submission, in particular those from junior researchers.

5.4 Research Integrity Officer (RIO)

Host Institutions should have a designated member of staff who has responsibility for matters of research integrity within the organisation. Their responsibilities could include:

- Co-ordination of inductions for new starters and group leaders
- Issuing regular updates to relevant policies
- Acting as a point of contact for any research integrity-related queries.
- Ensuring that policies relating to data archiving are adhered to
- Acting as a point of contact as part of the organisation’s whistleblowing procedure
- Orchestrating internal peer review

5.5 Policies

Host Institutions should hold each of the following documents, with each either being written in-house or benchmarked against a similarly reputable organisation:

5.5.1 Procedure to Investigate Allegations of Misconduct – A document detailing the various stages that would occur when investigating allegations of scientific misconduct. Please note, this does not need to be a separate document relating specifically to scientific misconduct, i.e. it can be a procedure that covers a wide range of issues.

Please see Section 5.8 for further information.

5.5.2 Whistleblowing procedure - A policy statement regarding the treatment of whistleblowers under the Public Interest Disclosure Act (1998) should be made available, outlining:

I. that scientific misconduct is taken seriously
II. the process to follow when raising concerns
III. that any member of staff with genuine concerns can raise them confidentially without fear of suffering any detriment
IV. equally, that disciplinary procedures are in place to deal with malicious allegation.

5.5.3 Code of Good Practice – A document describing the values and behaviours that are expected to be upheld by grantholders and researchers when undertaking research at the institution.

5.5.4 The above documents, along with a copy of the Concordat and other relevant documents, should be held as a set and be clearly accessible/visible. They should be given to new starters, easily accessible via links on websites or clearly signposted on shared drives.
It is recommended that a reminder is periodically sent to all staff so that awareness of the policies and where they can be found remains high.

5.6 Data archiving

5.6.1 Host Institutions should establish clear, consistent data retention policies applicable to, and covering all data generated by, the research undertaken at the institution. All data generated should be subject to these policies.

5.6.2 It is advisable, and where resource allows, that any raw data (and in particular data relating to published research) is retained indefinitely. In addition, if image processing is used, a copy of the original image file as well as the manipulated image should be retained.

5.7 Continuous improvement

Cancer Research UK is committed to not just achieving the highest standards but maintaining them, and that the culture of research integrity outlined in Section 5.1 should be underpinned by a philosophy of continual improvement.

Given the constantly evolving world of research, the changing nature of concerns relating to scientific conduct and the emergence of new types of research, Host Institutions should periodically review processes and procedures to ensure they remain ‘fit for purpose’.

In addition, Host Institutions should seek opportunities to share their knowledge and findings with other organisations to further promote development and the dissemination of best practice.

5.8 Investigating Allegations of Misconduct

5.8.1 As per CRUK Grant Conditions, the Host Institution must have in place formal written procedures for the handling of allegations of research misconduct should they arise. The procedure(s) must be made available to CRUK upon request.

It is recommended that the policy outlines:

I. Who should make an allegation, how this should be done and to whom it should be sent.
II. The timescales within which it will be dealt.
III. The possible sanctions if the allegation is upheld.
IV. How an appeal how appeal can be made

5.8.2 CRUK considers it the Host Institution’s responsibility to investigate all allegations of scientific misconduct.

5.8.3 Host Institutions will need to give consideration to the procedures to apply to visiting researchers, (i.e. visiting researchers, students or staff) if, while based
in the Host Institution, they participate in research, regardless of if it is funded by CRUK or not.

These procedures should be consistent, clearly defined and visible, and visiting researchers should be made aware of them if and when they become applicable.

6 RELATED DOCUMENTS

6.1 Cancer Research UK’s Grant Conditions
http://science.cancerresearchuk.org/funding/terms-conditions-and-policies/index.htm

6.2 Concordat to Support Research Integrity
http://www.universitiesuk.ac.uk/Publications/Pages/concordattosupportresearchintegrity.aspx

6.3 Code of Practice for Research: Promoting Good Practice and Preventing Misconduct (UKRIO)
http://www.ukrio.org/what-we-do/code-of-practice-for-research