

## JIC Policy on Scientific Integrity

### Introduction

The John Innes Centre (JIC) has a responsibility to ensure that the funds it disperses are properly spent, in accordance with the law, funder requirements and in the public interest. Researchers have a duty to their profession, to JIC and to research funders, to conduct their research according to best scientific practice and the highest professional standards.

#### *Policy aims*

Research misconduct (as defined below) is least likely to arise in an environment where professional standards and principles of good practice are adopted and where appropriate managerial systems are in place to provide support and oversight. JIC is committed to the maintenance of such an environment through the provision of this policy and through supervision at all levels to ensure good research practice is adhered to at all times.

#### *Who this policy applies to*

This policy applies to all staff, students or visiting workers working at JIC, including but not limited to: research, support and administrative staff employed by JIC; staff employed on grants or short-term contracts. Students may also be subject to additional policies of their sponsor or registering University. Students registered at UEA will also be required to adhere to the UEA policy <https://www.uea.ac.uk/research/our-research-integrity>

The term 'research' as used here refers to all aspects of the research process, including but not limited to: applications for funding; the formulation of a hypothesis; the designing of experimental protocols; the performance of experiments and the generation of data; the recording, analysis, publication and archiving of data; the preparation and publication of experimental designs, data and conclusions; the communication of research to colleagues and the wider community; and the use of experimental organisms and materials.

### PROFESSIONAL STANDARDS

JIC researchers must adhere to the following standards of professional conduct at all times:

1. Honesty and fairness: JIC scientists should be honest when reporting on their research, particularly concerning how it is conducted, interpreted and reported, its potential implications, and in acknowledging the work of others.
2. Accuracy and rigour: in conducting, reporting and publishing research, clarifying what the data and conclusions are based on, where they were derived from, and how they can be verified. Proper record keeping of the primary data is essential, as is the fair representation of individual contributions.
3. Accountability to funders and the general public.
4. Openness and transparency: Researchers should have no other interest beyond their own scientific integrity and should always be willing and able to account for their actions. Researchers should always be prepared to communicate, analyse, report and question the outcome of their research and to disclose any conflicts of interest.
5. Independence: Researchers are expected to conduct their research with independence and impartiality, in keeping with the environment of academic freedom they work in and regardless of the funder of the research. Researchers should not interfere with the independence of their colleagues or team members.
6. Respect for colleagues and for experimental organisms and subjects, including compliance with relevant research ethics policies and requirements.
7. Co-operation and collegiality in scientific interactions and communications, and in the sharing of resources.

## **DEFINITION OF RESEARCH MISCONDUCT**

JIC researchers are expected to observe the highest standards of professional conduct, outlined above in the proposing, conducting and reporting of research. Any practice or conduct that deviates from ethical and professional standards for these activities constitutes misconduct.

Research misconduct includes, but is not limited to:

1. Mis-representation, falsification or fabrication of data, including fraud – intentionally misleading or deliberately false reporting of information.
2. Unacknowledged appropriation of other's work, including plagiarism, piracy, the abuse of confidentiality with respect to unpublished materials, or misappropriation of results, materials or other resources.
3. Conduct that contravenes the professional standards expected by JIC or other relevant bodies, including funders, and that deviates from accepted ethical and professional standards in research.
4. Failure to follow accepted procedures or to exercise due care in avoiding unreasonable risk of harm to colleagues or research subjects or organisms.
5. Mismanagement or inadequate preservation of data and primary materials, as outlined in the guidelines below.
6. Inappropriate conduct in peer review, including failure to disclose conflicts of interest, disregard of the requirement for confidentiality, or the misuse of data for personal advantage.
7. Misrepresentation of involvement or authorship.
8. Improper dealing with allegations of misconduct.

Full definitions agreed by RCUK of misconduct in research and other acceptable research behaviour are included in Appendix B of the "Research Council Investigation Allegations of Misconduct Research Policy" within the BBSRC Employment Code:

<http://www.bbsrc.ac.uk/about/policies/employment/code/disciplinary/a12b-1-main/>

Research misconduct does not include honest error, or honest differences in the interpretation or assessment of data.

However, once an error is detected it is the researcher's responsibility to address the issue and fix the record in a timely fashion. Failure to do so could be construed as research misconduct.

## **PRINCIPLES OF GOOD RESEARCH PRACTICE**

### **A Critical Approach**

Researchers should always be prepared to question the outcome of their research. JIC expects all research results to be checked by Project Leaders before being made public. It is important that research can be challenged and tested once published.

Researchers should not become subject to other pressures such that the normal processes of research inquiry cannot be enforced, e.g. via their Project Leader or by constraints imposed by the source of funding of the research. Pressure to produce results that suit the specific interests of a funder must be resisted. This is particularly the case where researchers could be perceived to have a conflict of interest, e.g. where they might have an equity share in the funder, or may hold a position with or be involved in consultancy with the funder. Any such conflict of interest, whether real, potential or perceived, should be disclosed at the earliest opportunity to The Head of the Directorate and entered on the register of outside interests.

### **Documenting Results**

Throughout their work, researchers should keep clear and accurate records, in English, of the procedures they have followed, the sources of research material, where archives or collections

are located and of the results obtained, including interim results. This is necessary not only as a means of demonstrating proper research practice, but also for effectively responding to questions and concerns, for example, about how research has been conducted, about the results obtained, and about the ownership of the data or results. The proper documentation of lab work and the correct archiving of raw data (see point below) will minimise instances where essential information required for dealing with allegations of research misconduct, such as the original data, have allegedly been lost or cannot be replicated. It is recommended that all primary data and relevant analysis, images and documents relating to a publication are held in a specific folder or directory. This makes it easier for all staff concerned with a publication to access the relevant data, have version control on the document and to be able to revisit the data in future as necessary.

### **Storage and Disposal of Data**

Primary data that forms the basis of published work should be securely stored for at least 10 years in a durable form, and in accordance with funder requirements. The means of data storage should be appropriate to the task. Provision should be made for the automatic back-up of data or software stored on a computer or other internal storage system with an automatic back up facility. Special attention should be paid to guaranteeing the security of electronic data. Responsibility for provision of appropriate backup facilities lies with the Project Leader, and it is the responsibility of researchers to use these facilities to ensure all data is appropriately backed up and stored securely.

### **Authorship and Publication**

Authorship is important in the context of good research practice. Authors are generally defined as individuals who have made substantial contributions to the conception or design of the work, and to the acquisition, analysis, or interpretation of data for it; they also contribute to drafting and revising the article for its intellectual content and must approve its final version for publication. Authors must therefore be familiar with the content of the published article and be accountable for all aspects of the work, and for ensuring that questions relating to the accuracy or integrity of any part of the work are appropriately responded to, investigated and resolved. Where co-authors cannot be contacted or are deceased, it is at the Project Leaders discretion to include them on the paper. However such inclusion must be made adhering to the highest standards of integrity.

It is critical that Project Leaders appreciate the importance of authorship to their team members and co-authors. Authorship is the primary currency of productivity in science and it can dramatically impact a researcher's career. Therefore, senior/corresponding authors should ensure that authorship and author ranking is distributed in a fair and transparent manner. Pre-arranged authorship deals, e.g. when a team member is promised first authorship prior to the completion of the experiments, should not be made. Conversely, team members should appreciate the importance of authorship to their peers and should not aggressively and unfairly lobby their Project Leader for a position that doesn't reflect their contribution relative to their colleagues.

If a researcher at the Institute is informed of, or discovers for themselves, errors in a published article that they have co-authored that diminish the reliability of the published results or the key conclusions drawn, they must discuss this with the lead investigator of the paper and notify promptly any co-authors and the journal concerned. A rapid correction to the published work should be sought, either in the form of a published correction or a retraction, depending on the circumstances involved.

### **Collaborators and Partners**

Any person who participates in a substantial way in conceiving, executing or interpreting a significant part of the relevant research should be given the opportunity to be included as an author of a publication that derives from that research. The practice of honorary authorship is unacceptable - only those who have participated in the research should be listed as an author. The contributions of formal collaborators and all others who directly assist or indirectly support the

research should also be properly acknowledged. This applies to any circumstances in which statements about the research are made, including provision of information about the nature and process of the research, and in publishing the outcome. In accordance with funders requirements and where appropriate, the funders of the research and other collaborating bodies should be acknowledged.

### **Exploitation and Protection of Intellectual Assets**

Exploiting intellectual property (IP) generated by research is important both to improve economic competitiveness and to generate revenue. The potential to exploit IP should be considered when submitting applications or negotiating contracts, or in discussion with industry partners, and before data are submitted for publication or presented in any other public forum, including the internet. Final decisions on patent inventorship are made by a patent lawyer, but the contribution of all potential inventors should be brought to the attention of the lawyer so that a fair judgement can be made. Where the publication of a piece of work has financial implications, such as filing a patent application, this must always be disclosed on submission of the work for publication.

### **INSTITUTE SUPPORT AND OVERSIGHT**

Support and oversight are two key responsibilities held by JIC in support of research integrity. In recognition of this, JIC provides training and oversight to all employees in the following ways.

#### **Training on Research Integrity**

JIC provides an annual workshop for staff at all levels to train them on key aspects of research integrity and publishing ethics.

All newly-appointed scientific members of JIC are required to attend the workshops during their first year of employment at the JIC. Appropriate management action will be taken in relation to any non-attendance.

#### **JIC oversight of good practice**

JIC is expected to adhere to the highest standards of research integrity. As part of the annual audit programme of research groups by Quality Assurance data relating to publications will be checked to determine that it is appropriately managed and all collated in a single location, with signposting to data sources as necessary, and in compliance with this policy.

JIC undertakes an internal and regular oversight process twice a year, whereby six papers submitted by JIC researchers are selected by a Scientific Standards Committee (SSC) representative, who will look to spread the selection over the Project Leader cohort. The authors of these papers are then required to provide the original supporting data, or the location where they can be accessed, to the Chair of the Committee within a given time (unless the Chair of the Committee paper has been selected whereby an alternative Project Leader on the Committee will be the recipient of the information). Either a SSC Project Leader Committee Member or a Project Leader designate will then review and make a judgement on the robustness and integrity of the submitted manuscript; in particular supporting data for figures will be checked. The findings of the review will be presented to the SSC and appropriate follow up actions implemented as a consequence of findings and in accordance with policy on misconduct.

This process is restricted to published papers whose senior author is at JIC. In the case of papers published in collaboration with other organisations, JIC encourages collaborators to share their primary data in the interests of rigour and transparency.

### **PROCEDURE FOR REPORTING ALLEGATIONS OF RESEARCH MISCONDUCT**

JIC is committed to upholding the most rigorous standards of good conduct to ensure that the highest-quality research is conducted at and published by researchers at the JIC. It will not condone any form of malpractice in the workplace and is committed to creating a safe, fair and honest working environment within the framework of the public disclosure act.

Individuals raising in good faith a genuine concern about malpractice, or co-operating in associated investigations, will be protected from any form of retribution or detriment as a result of doing so, including harassment or victimisation from another employee.

The John Innes Centre encourages and enables employees to speak out when they encounter or suspect malpractice. This is supported by public interest disclosure (whistleblowing) policies available on the HR pages of the intranet. While these procedures provide for the anonymous reporting of allegations, employees are encouraged to make open and specific disclosures in order aid any necessary investigation.

Any allegation reported by staff, visiting workers or students will be managed in accordance with the relevant procedure or arrangements applicable to the parties involved. This may include, but is not limited to:

Research Council Investigating allegations of misconduct in research policy:

<http://www.bbsrc.ac.uk/about/policies/employment/code/disciplinary/a12b-1-main/>

Research Council Whistleblowing policy:

<http://www.rcuk.ac.uk/RCUK-prod/assets/documents/terms/WhistleblowingPolicy.pdf>

Research Council Disciplinary Procedure:

<http://www.rcuk.ac.uk/RCUK-prod/assets/documents/terms/DisciplinaryPolicy.pdf>

BBSRC policy on good scientific practice

<http://www.bbsrc.ac.uk/documents/good-scientific-practice-pdf/>

JIC Disciplinary Procedure and Policy – available on the HR pages of the intranet

JIC Whistleblowing Procedure Policy – available on the HR pages of the intranet

UEA registered students will also be required to adhere to UEA policy on research integrity

<https://www.uea.ac.uk/research/our-research-integrity>

If an individual has a concern about potential research misconduct they should seek advice on process from the JIC HR Manager and/or the Manager of the Graduate Studies Office if you are a student. Additionally, they may seek advice their line manager, a Project Leader, Head of Department, the Director or, in the case of a matter involving the Director, the Chair of Governing Council. In all cases, the concerns should be referred without delay.

### **Reporting of Outcomes/ Findings**

The Governing Council considers the issue of scientific misconduct to be of the utmost importance. A full record of allegations will be presented to the Governing Council annually for review.

In formulating this policy, the JIC was informed by the integrity policy introduced at The Sainsbury Laboratory 2015 and the Universities UK Concordat to Support Research Integrity and The RCUK Policy and Guidelines on the Governance of Good Research Conduct.