

## **CODE OF GOOD PRACTICE IN RESEARCH**

### **1. THE PRINCIPLES OF GOOD RESEARCH PRACTICE**

#### **1.1 Introduction**

The University of Edinburgh has a responsibility to ensure that the research it supports is carried out in conformity with the law and in accordance with the best current practice.

The University expects those engaged in research to act with the highest standards of integrity whether they are employees of the University, students or researchers, and irrespective of the source from which their posts or research is funded, whether this is internal or external to the University.

The University also expects these standards to be maintained by all individuals engaged on University business, in particular in the setting of research priorities and in the assessment of research.

This document provides guidelines on the issues involved in the proper conduct of research, and on the standards expected.

This document is intended for:

- »» academic, research and relevant support staff employed by the University, and other individuals carrying out research at, or on behalf of, the University;
- »» students and their supervisors;
- »» any persons with honorary positions conducting research within, or on behalf of, the University;
- »» individuals involved in the peer review of research process.

#### **1.2 Principles of Good Research Practice**

The University cannot be prescriptive about approaches taken by individuals to solving particular research problems. However, in the conduct of all research, the University expects the following general principles to be understood and observed. Unless otherwise stated, the principles apply to all University employees and students as well as any others working in the University.

It is important that a culture of honesty and integrity in research should be fostered and maintained. This culture should be inculcated in inexperienced researchers and students. Researchers should be aware of any areas of conflict of interest and these should be declared in the first instance, in accordance with the Policy of Conflict of Interest.

Unless otherwise agreed, the University owns Intellectual Property (IP) arising from research undertaken by employees in the course of the employment<sup>1</sup>. Custom and practice in the University, in common with most other Universities, is for the University to waive rights to copyright of specific articles to enable authors to assign copyright to publish specific articles in journals or books. Again unless otherwise agreed, the University does not own the output from its students' research. If it is necessary for the University to own this IP (e.g. as a result of a sponsor's requirements) then this must be the subject of specific written agreement with the student. The Staff Administration Manual clearly outlines the University's position (SAM 5:7.3).

The principles of good research practice include the following aspects:

- »» fundamentals of research such as: maintaining open and honest professional standards; documenting results; questioning one's own findings; acknowledging honestly the contribution of others;
- »» leadership, organisation and cooperation in research groups;
- »» taking special account of the needs of inexperienced researchers;
- »» securing and storing primary data; and
- »» taking appropriate measures to protect intellectual assets.

## **2. MANAGEMENT OF GOOD RESEARCH PRACTICE**

### **2.1 Professional Standards**

#### **2.1.1 Honesty**

At the heart of all research, regardless of discipline or institution, is the need for researchers to be honest in respect of their own actions in research and in their responses to the actions of other researchers. This applies to the whole range of work, including experimental design, generating and analysing data, publishing results, and acknowledging the direct and indirect contributions of colleagues, collaborators and others. All individuals in the University's employment, or working within the University, must refrain from plagiarism, infringement of intellectual property or the fabrication of results. Committing any of these actions is regarded as a serious disciplinary offence.

#### **2.1.2 Openness**

While recognising the need for researchers to protect their own research interests in the process of planning their research and obtaining their results, the University encourages researchers to be as open as possible in discussing their work with other researchers and with the public. Researchers should contact Edinburgh Research and Innovation (ERI) for advice on releasing results which might affect the potential to protect the research at a later date. Once results have been published, researchers

---

<sup>1</sup> The issues relating to intellectual property rights are under consideration by the Joint Consultative and Negotiating Committees with a view to agreeing a University policy on that topic.

should make available relevant data and materials to others on request for appropriate purposes.<sup>2</sup>

### **2.1.3 Accountability**

Researchers, and in particular those named as principle investigators or grantholders, must ensure that the research that they are undertaking is consistent with the terms and conditions as defined by the sponsoring body and / or covered by agreements between the University and the Sponsor. This includes, but is not restricted to, ensuring that the research programme carried out is as defined in the original proposal to the Sponsor, unless amendments have been agreed in writing; that finance is used solely for the purpose that it was intended; that reports are both accurate and produced on time and that conditions relating to publication and ownership of Intellectual Property are adhered to.

### **2.1.4 Conflict of Interest**

In addition, researchers must be honest about conflict of interest issues, whether real, potential or perceived, when reporting results.

## **2.2 Leadership and Organisation in Research Groups**

The culture and tone of procedures within any organisation must be set by individuals in authority. Within the University, it is the responsibility of the Principal, Vice Principals, Heads of College and Heads of School to ensure that a climate is created which allows research to be conducted in accordance with good research practice.

Within a research group, responsibility lies with the group leader. Group Leaders should create a research environment of mutual cooperation, in which all members of a research team are encouraged to develop their skills and in which the open exchange of ideas is fostered. They must also ensure that appropriate direction of research and supervision of researchers and research students is provided. Responsibilities should be clearly allocated and understood.<sup>3</sup>

Research misconduct is least likely to occur in an environment where good research practice (e.g. documentation of results, peer review of research, regular discussion and seminars) is encouraged and where there is adequate supervision at all levels.

## **2.3 The Needs of New Researchers**

Researchers who are new to the academic community may face particular difficulties. Responsibility for ensuring that students and other new researchers understand good research practice lies with all members of the community, but particularly with research group leaders and Heads of School. Good practice would include "mentoring" less experienced workers in their new environment.

Postgraduate students should receive good supervision and should not be put under unwarranted or unsupervised pressure to produce results at any cost. Postgraduate

---

<sup>2</sup> This may not always be possible, e.g. where the volume of data is physically too great for any system to hold it, or where the data is held by an international collaboration at a remote site, or where the format in which the data is stored makes distribution very difficult.

<sup>3</sup> Postgraduate Studies Committees may also have a responsibility in this area.

students and their supervisors should refer to the Postgraduate Code of Practice documents.

### **3. RESEARCH RESULTS**

#### **3.1 The Need for a Critical Approach**

Researchers should always be prepared to question the outcome of their research. While acknowledging the pressures - of time and resources - under which researchers often have to work, the University expects research results to be checked before being made public. It is important that ideas can be challenged and tested.

Equally, it is important that researchers or research groups should not become subject to such commercial pressures that the normal processes of research inquiry cannot be enforced, e.g. by constraints imposed by the source of funding of the research.

This is particularly the case where the individual researcher(s) could be perceived to have an interest in the research results, e.g. where they might have an equity share of the funding source, or may be involved in consultancy with the funding source. Researchers should refer to the Policy on Conflict of Interest.

#### **3.2 Documenting results and storing primary data**

##### **3.2.1 Record Keeping**

Throughout their work researchers are required to keep clear and accurate records of the procedures followed and of the results obtained, including interim results. This is necessary not only as a means of demonstrating proper research practice, but also in case questions are subsequently asked about either the conduct of the research or the results obtained. Therefore, primary data as the basis for publications should be securely stored for an appropriate time in a durable form. In cases where transcripts of interviews are the basis for research, these should be kept as confidential according to the procedures in place when the data was collected.<sup>4</sup> The keeping and maintenance of laboratory notebooks, and other data sources, can also help to ensure that intellectual property (IP) can be protected.

Proper documenting and storage procedures will minimise cases of allegations of research misconduct where original data “have disappeared” or allegedly been lost.

##### **3.2.2 Storage of Records**

The appropriate period for retaining data depends on circumstances (e.g. in some fields, the importance and relevance of data can be superseded very rapidly). Equally the means of data storage (paper, diskette, CD-ROM, etc) should be appropriate to the task. Provision should be made for automatic back-up of electronically stored data. Even if the individuals responsible for generating the data relocate, the University should still have access to data (*refer to footnote 1*). Guidance on appropriate timescales and data storage is the responsibility of the Research Group Leader, and should be confirmed in writing at the outset of the research programme.

---

<sup>4</sup> This should be in accordance with Data Protection Act procedures

Appropriate storage of research data is a requirement of the University and of several sources of external funding. Researchers should confirm these requirements with the funding source at the outset of the research programme, and a written statement regarding data storage should be included in the description of the research to be carried out.

### **3.3 Publishing Results**

The issue of authorship is important in the context of good research practice, and the University expects the matter to be taken seriously. The University expects anyone listed as a author on a paper to accept personal responsibility for ensuring that they are familiar with the contents of the paper. All named individuals should be able to identify their contributions to the paper.

The practice of honorary authorship is unacceptable, i.e. only those who have contributed to the research should be listed.

The standard position of the University is that research be published when appropriate and wherever possible. This is a necessary adjunct to making research available to the public and is frequently a condition of funders. Delays in publication should be avoided except, e.g. in relation to proprietary information of the sponsor incorporated in the research results or where journals require amendments or modifications. The University also acknowledges the legitimate interest of the sponsor in securing patent protection for inventions made in the course of research. Accordingly short delays in publishing are acceptable to allow patents to be filed, but these delays should be limited to a maximum of 90 days.

Researchers should refer to current University guidelines on IP.

### **3.4 Acknowledging the role of collaborators and other participants**

In all aspects of research, the contributions of formal collaborators and all others who directly assist or indirectly support the research must 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. Where appropriate, the sponsors of the research should be acknowledged.

#### **Appendix:**

Current links to existing policies are:

- »» Conflict of Interest – <http://www.personnel.ed.ac.uk>
- »» Postgraduate Studies - <http://www.postgrad.ed.ac.uk/publicat/index.htm>
- »» Data Act Protection – <http://www.dataprotection.ed.ac.uk>
- »» IP Protocols- <http://www.research-innovation.ed.ac.uk>
- »» Investigating Allegations of Research Misconduct – <http://www.personnel.ed.ac.uk>