

# Freshwater Biological Association Guidelines on Good Practice in Research

## 1. Introduction

- 1.1 The Freshwater Biological Association (FBA) is committed to ensuring that all research conducted using its facilities is conducted to the highest standard of integrity.
- 1.2 This document contains good practice Guidelines for the conduct of research which are intended to ensure that all research conducted at the FBA, either by its own representatives or by external users of its facilities, is of the highest standard. Guidance is offered on leadership and cooperation, training and supervision, ethical practice, use of data, publication of research and research misconduct.
- 1.3 Responsibility in research rests with the individual researcher, and these guidelines have been produced in order to provide the support required by individuals in making research-based decisions.

## 2. Definitions

- 2.1 **Research** is any activity that generates data/information or that uses new or previously generated data, or previously published information/ideas to develop new ideas, opinions or reviews.
- 2.2 **FBA facilities** include the static research infrastructure (stream channels, hatchery tanks, electron microscopes, laboratories, etc.), movable equipment (microscopes, dataloggers, etc), information resources (libraries, unpublished collections, etc.) and research funding.
- 2.3. **FBA staff** includes salaried staff involved in research, volunteers undertaking research for FBA and Honorary Research Fellows.
- 2.4 **External researchers** include all those using FBA facilities or funds for research purposes who are not FBA staff. This therefore includes employees of other organisations, students funded either wholly or partially by the FBA, students not funded by the FBA but using its resources, and privately funded individuals including those doing research for personal interest.
- 2.5 Reference to the **employer** of an external researcher includes for a student the institute with which s/he is registered.

## 3. General

- 3.1 The FBA is committed to maintaining the highest possible standards of integrity and probity in the conduct of academic research, by FBA staff and external researchers, including those funded by FBA but carrying out research elsewhere, and those not employed by FBA but using its research facilities.
- 3.2 These guidelines and procedures are intended to make researchers aware of their responsibilities with regard to research.
- 3.3 External researchers are expected to be covered by guidelines issued by their employers or contractors. Where acceptable guidelines do not exist, external researchers will be expected to follow those produced by the FBA.

- 3.4 Even where an external researcher can produce acceptable guidelines, the following clauses from the FBA guidelines will apply irrespective of the wording of external guidelines: 6.1, 6.2, 7.2, 7.3, 7.4, 8.3.

#### **4. Leadership and cooperation**

- 4.1 The FBA Director and Council have a responsibility to ensure that a climate is created that allows research to be conducted in accordance with the principles in these Guidelines. They should aim to create a research environment of mutual co-operation in which all FBA staff and external researchers are encouraged to develop their skills and in which the open exchange of ideas is fostered.
- 4.2 FBA staff and external researchers should strive to cooperate with other researchers in order to advance our understanding. They should strive to recognise and avoid conflicts of interest and should acknowledge the direct and indirect contribution of colleagues, collaborators and any others involved in the research.

#### **5. Training and supervision**

- 5.1 Training and/or experience is expected in the following fields for FBA staff and external researchers: research design, regulatory and ethics approvals and consents, equipment use, confidentiality, use of information resources, data management, record keeping, publication, research team leadership, health and safety, budget management; other topics may be added as appropriate. External researchers are expected to receive training from their employers
- 5.2 The Director will ensure that FBA staff are adequately trained, and that they understand and adopt best practice. Appropriate training for new research staff will be provided on commencement of their employment.
- 5.3 The Director should ensure that appropriate procedures and mechanisms are in place for the mentoring of research staff. This will include ensuring that researchers are aware of their responsibilities not only for the conduct of their research, but also to their colleagues and the wider community.
- 5.4 Research students associated with the FBA will be registered at external institutions. They should, therefore, adhere to the codes of practice for the institution in which they are registered. Copies of such codes of practice should be provided to the FBA for all students using FBA research facilities or funded by the FBA, to ensure that they match the requirements of the FBA.
- 5.5 The Director should ensure that any FBA staff involved in supervision of research students are adequately trained and informed about the processes of supervision and progression.

#### **6. Ethical practice**

- 6.1 Research involving human participants. Researchers should ensure the confidentiality of personal information relating to all participants in research, and that the research fulfils any legal requirements such as those of the Data Protection Act.  
Research subjects have the right to choose whether or not they participate in research, and obtaining informed consent is central to the ethical conduct of research involving human subjects.
- 6.2 Research involving animals. Research involving vertebrate animals should have the approval of FBA Council. Experimental work on vertebrate species should have Home Office licenses for the FBA site, the investigator and the project. Advice should be sought from the Director and Business Manager before applications are made for grants or contracts involving animals.
- 6.3 Standards of Professional Bodies. Where available, the FBA expects researchers to observe the standards of practice set out in guidelines published by relevant professional and other organisations.

## 7. Use of data

- 7.1 Researchers should keep clear and accurate records of the procedures followed and the documentation generated during the research process, including records kept of the interim results obtained as well as the results of the final outcomes. This is necessary not only as a means of demonstrating proper practice, but also in case questions are subsequently asked about either the conduct of the research or the results obtained.
- 7.2 Data and intellectual property (IP) generated by FBA staff are the property of the FBA. Ownership of data generated by external researchers will be determined before research commences; the FBA does not assume a right to ownership of such data, but requires that, unless the external researcher has an acceptable mechanism for data stewardship, copies of data generated using its facilities are provided for its own records. Unless otherwise agreed, IP for work carried out by external researchers is assumed to belong to the researcher or his/her employer.
- 7.3 Data generated and details of procedures followed in the course of research should be kept securely in an appropriate format. Electronic formats are normal but wherever possible a back up paper format copy should be made and lodged, for archiving purposes only, with the FBA's Unpublished Collection.
- 7.4 Samples should be kept if they are environmental (as opposed to experimental) and records associated with them should be linked to the datasets to which they apply and to any publications arising from the data.
- 7.5 The FBA encourages researchers to review their research results to identify intellectual property rights that might be registered or protected to allow commercial exploitation. In relation to patent applications it is important to recognise that premature disclosure through publications or discussions and the incorrect listing of inventors can lead to invalidity and loss of rights.

## 8. Publication of research

- 8.1 Results should be published in an appropriate form. Anyone listed as an author on a paper should accept responsibility for ensuring that s/he is familiar with the relevant contents of the paper and can identify his/her contribution to it.
- 8.2 The contributions of formal collaborators and all others who directly assist or indirectly support the research should be properly acknowledged.
- 8.3 Where work is carried out by an external party using FBA facilities or having received financial or other assistance from the FBA, this contribution should be clearly acknowledged in all relevant publications.

## 9. Research misconduct

- 9.1 The FBA is committed to ensuring that a professional research culture is encouraged and enhanced, so that research misconduct is avoided. Research misconduct is taken to include in particular (but not limited to):
  - 9.1.1 **Falsification** – defined as the alteration of data in order to create the desired results;
  - 9.1.2 **Fabrication** – defined as the creation of apparent datasets without actually carrying out the research required to produce the data;
  - 9.1.3 **Piracy** – defined as the deliberate exploitation of ideas from others without proper acknowledgement;
  - 9.1.4 **Plagiarism** – defined as the copying or misappropriation of ideas (or their expression), text, software or data (or some combination thereof) without permission and/or due acknowledgement;
  - 9.1.5 **Misrepresentation** – defined as deliberate attempt to represent falsely or unfairly the ideas or work of others, whether or not for personal gain or enhancement;
  - 9.1.6 **Fraud** – defined as deliberate deception (which may or may not include the invention or fabrication of data).
- 9.2 If allegations of research misconduct are made against FBA staff or external researchers, these must be examined and dealt with as expeditiously and fairly as possible. Such investigations will

be carried out by members of FBA Council, under the direction of the Chairman of Council. Allegations of misconduct in research made by any person about a member of the FBA or an external user of FBA facilities should be referred in the strictest confidence to the Chairman who will arrange for an investigation to take place.

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