BBSRC Statement on Safeguarding Good Scientific Practice

1. INTRODUCTION

1.1 As a publicly-funded organisation, the BBSRC has a responsibility to ensure that the funds it disperses are spent properly, in accordance with the law and in the public interest. Included within this responsibility is a need to draw the attention of members of the scientific community funded by the BBSRC to the need to conduct their research, and to be seen to do so, according to best scientific practice.

1.2 BBSRC expects the highest standards of scientific integrity to be adhered to by the researchers and students it funds, whether they are employees of the BBSRC or of other institutions. The BBSRC also expects these standards to be maintained by all individuals engaged on the BBSRC's business, in particular in the setting of scientific priorities and in the assessment of research. This statement addresses the issues involved in the proper conduct of scientific research, and provides guidance on the standards expected. It also considers the procedures to be followed should allegations of scientific misconduct be made.

This statement applies to:

- any individual who is granted funding or applies for funding from the BBSRC, including:
  - researchers, fellows and scientific support staff at Higher Education Institutions and academic analogues;
  - researchers, fellows and scientific support staff employed by or otherwise working in or for institutions funded by the BBSRC;
  - students funded by the BBSRC and their supervisors;
  - members of the scientific community wishing to apply to the BBSRC for funding;
- administrators at Higher Education Institutions and academic analogues;
- any person involved in BBSRC's peer review processes, including:
  - members of BBSRC Council, Council's Boards, Panels, and Committees;
  - Visiting Groups reviewing BBSRC-sponsored institutes;
  - other BBSRC peer review bodies;
  - referees;
  - BBSRC administrators;
- any institution or body which employs, engages or sponsors any individual supported by BBSRC funding or applicant for BBSRC awards. BBSRC funding is awarded to the institution, not to the individual.

2. PRINCIPLES OF GOOD SCIENTIFIC PRACTICE

2.1 The BBSRC cannot be prescriptive about individual approaches taken by scientists to solving particular research problems. However, in the conduct of

all research, all persons to whom this statement applies must comply with the following general principles:

Professional standards

Honesty

2.2 At the heart of all scientific endeavour, regardless of discipline or institution, is the need for scientists to be honest in respect of their own actions in scientific research and in their responses to the actions of other scientists. This applies to the whole range of scientific work, including experimental design, generating and analysing data, publishing results, and acknowledging the direct and indirect contributions of colleagues, collaborators and others. All individuals to whom this statement applies must not commit any act of scientific misconduct. Scientific misconduct includes:

- piracy: the deliberate exploitation of ideas from others without acknowledgement;
- plagiarism: the copying of ideas, data or text without permission or acknowledgement;
- fraud: deliberate deception, including the invention of data, and the omission from analysis and publication of inconvenient data.

Openness

2.3 While recognising the need for scientists to protect their own research interests in the process of planning their research and obtaining their results, the BBSRC encourages the scientists it funds to be as open as possible in discussing their work with other scientists and with the public. Once results have been published, where appropriate, the BBSRC expects scientists to make available relevant data and materials to others, on request. Further details on data sharing are set out in BBSRC's data sharing policy, available at http://www.bbsrc.ac.uk/publications/policy/data-sharing-policy.aspx .

Guidance from professional bodies

2.4 Where available, scientists shall observe the standards of scientific practice set out in guidelines published by scientific societies and other relevant professional bodies.

Leadership and cooperation in research groups

2.5 The culture and tone of procedures within any organisation must be set by individuals in authority. Within science, it is the responsibility of the heads of research institutions (Vice Chancellors, Principals, Institute Directors, etc) and their senior colleagues to ensure that a climate exists which allows research to be conducted in accordance with good scientific practice. Within a research group, responsibility lies with the group leader. These individuals 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 scientific ideas is fostered. They must also ensure that appropriate direction of research and supervision of researchers and research students are provided, and that staff under their direction are aware of relevant legislation and published guidance. It is the responsibility of individual researchers and support staff to work in accordance with the standards set and to contribute to the research effort in a spirit of cooperation.

A critical approach to research results

2.6 Scientists 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 BBSRC expects research results to be checked for accuracy and consistency by the individual researcher responsible for them and by the team leader before being made public: individual researchers and relevant research team members must be able to explain and justify how the results were reached.

Documenting results and storing primary data

2.7 Throughout their work, BBSRC requires researchers to keep clear and accurate records of the scientific procedures followed and of the results obtained, including interim results. This is necessary not only as a means of demonstrating proper scientific practice, but also in case questions are subsequently asked about either the conduct of the research or the results obtained. For similar reasons, data generated in the course of research must be kept securely in paper or electronic form. BBSRC expects data to be securely held for a period of ten years after the completion of a research project, and institutions receiving funding from the BBSRC to have guidelines setting out responsibilities and procedures for keeping data.

Publishing results

2.8 It is a condition of BBSRC awards for research and training that research results are published in an appropriate form, usually papers in refereed journals. This has long been widely accepted as the best system for research results to be reviewed - through the refereeing process - and made available to the scientific community for verification or replication. The issue of authorship is important in the context of good scientific practice, and the BBRSC expects the matter to be taken seriously. In line with the general guidance given by *Nature*, the BBSRC requires that anyone listed as an author on a paper to accept personal responsibility for ensuring that they are familiar with the contents of the paper, and that they can identify their contributions to it. The practice of honorary authorship is unacceptable. BBSRC also requires acknowledgement of its support in all publications arising from the research it funds, with the award number quoted where possible.

2.9 In the interests of making publicly-funded research increasingly accessible, the Research Councils, under the auspices of Research Councils UK, are

developing a joint position statement on access to published research outputs, the main points of which will be incorporated into Research Councils' terms and conditions of grant. The current draft statement is available at http://www.rcuk.ac.uk/access/index.asp. At such time as the draft statement is approved by the Research Councils it will be incorporated into and form part of this statement.

Acknowledging the role of collaborators and other participants

2.10 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. Failure to acknowledge the contributions of others is regarded as unprofessional conduct. Conversely, collaborators and other contributors carry their share of the responsibility for the research and its outcome.

The needs of new researchers

2.11 Researchers who are new to the scientific community may face particular difficulties. Responsibility for ensuring that students, fellows and other new researchers understand good scientific practice lies with all members of the community, but particularly with senior scientists and research training supervisors. Research institutions should have in place systems which allow students and new researchers to adopt best practice as quickly as possible, for example, formal training or mentoring schemes.

3. IMPLEMENTATION OF THE PRINCIPLES

3.1 The BBSRC expects all institutions in receipt of its funding to accept their responsibilities in safeguarding good scientific practice. To be eligible to receive funding, each institution must have in place (a) code(s) of good practice addressing each of the issues raised in this statement. The code(s) should be available to and binding on all relevant staff in the institution.

3.2 All individuals involved in research or training funded by BBSRC must abide by their institution's code. Moreover, any individual who has reason to believe that malpractice in research has taken place should draw this to the attention of the appropriate authorities, normally the employer of the person(s) suspected of perpetrating the malpractice. Individuals who make allegations in good faith are protected by the Public Interest Disclosure Act 1998 (http://www.opsi.gov.uk/ACTS/acts1998/19980023.htm).

4. INVOLVEMENT IN ASSESSMENT PROCEDURES

4.1 The need for proper conduct applies equally to those involved in the BBSRC's procedures for setting scientific priorities and for assessing research, including

the initial decisions on what will be funded, the monitoring of progress and the evaluation of the outcome. This section is relevant to applicants for BBSRC support, members of BBSRC Council, Council's Boards, all peer review committees and panels, referees and members of staff at BBSRC Office.

Integrity in applying

4.2 When seeking BBSRC support of any kind (grants, fellowships and studentships), applicants must ensure that the information they submit is in accordance with this statement, the guidance provided by the BBSRC, and is clear and accurate. All parties to the application form (applicants, co-applicants, heads of department, finance officers and institutions) carry this responsibility. Any act of scientific misconduct in an application may result in BBSRC applying any of the sanctions set out in section 5 of this statement.

4.3 In the course of the appraisal process, applicants must not seek to identify or approach assessors. Applicants are normally asked to nominate suitable referees who may be invited to comment at the discretion of the BBSRC. The BBSRC will also normally respect an applicant's stated wish not to approach particular individuals.

The role of peer reviewers

4.4 The assessment procedures used by the BBSRC are based extensively on peer and merit review, combining as necessary the views of expert referees and of committees or panels, whose members have been drawn from the BBSRC's academic and other user communities. The BBSRC recognises that the system relies heavily on the good will of the research community and strives to minimise the calls on an individual's time. The BBSRC is also aware of the potential pitfalls associated with peer review, and has in place mechanisms for monitoring its procedures.

Individuals agreeing to contribute to the BBSRC's peer review processes are required to observe the following rules.

- All the information made available to them as peer reviewers must be treated in confidence; it must not be disclosed to other parties, except in circumstances where an individual wishes to seek specific additional expert advice; in such cases the third party must also respect the confidentiality of the information, and BBSRC must be informed that this has happened;
- Assessors (referees and members of the peer review body) must not take advantage of any information obtained as a result of their role; in particular they must not copy or plagiarise unfunded proposals.
- They must declare any conflicts of interest and, normally, decline an invitation to referee or withdraw from the relevant discussion(s). In particular, the BBSRC regards anyone with close professional, personal or commercial interest in a piece of work, or members of the same university or institute department as the applicant(s), as ineligible to comment.
- If individuals consider themselves to be insufficiently expert in the area of science on which they have been asked to comment, they must make this clear; in such circumstances, they should return the document(s) they have been asked to judge, and delete all electronic versions.

4.5 BBSRC-sponsored institute staff, and members of peer review panels/ committees often play a part in the development of BBSRC policy. Members are selected for their individual expertise and not as representatives of particular areas of science or any other group. In discussions of scientific priorities they should not lobby for any particular interest but, as far as is possible, offer impartial advice.

The role of administrators

4.6 Within BBSRC Office, staff involved in the peer review process also have responsibilities for ensuring the procedures are properly conducted. These procedures include the appraisal of applications, the evaluation of final reports, and the assessment of research groups and institutes by peer review panels, including Visiting Groups.

BBSRC staff must:

- treat as strictly confidential all information provided to them in the course of the procedures;
- ensure that data provided (electronically or on paper) are held securely;
- not divulge to applicants or award holders the names of referees;
- provide feedback to applicants and award holders in line with the BBSRC's agreed procedures;
- as far as possible be open and helpful when communicating with applicants and award holders.

See BBSRC's statement on peer review and freedom of information at http://www.bbsrc.ac.uk/web/FILES/Policies/peer_review.pdf.

4.7 More widely, the BBSRC has a responsibility to have in place clear and readily available guidance on the various procedures to be followed by applicants (see BBSRC's Research Grants Guide at http://www.bbsrc.ac.uk/funding/grants/grants-index.aspx). In setting assessment policy, the BBSRC must also keep in mind the pressures imposed on the community by assessment procedures, in terms both of the growing burden on individuals, and of the perceptions held by the community on the need to publish at all costs. Assessment procedures should achieve the right balance between qualitative and quantitative methods. They should also allow the identification and, if considered appropriate, the separate treatment of applications from new researchers.

5. ALLEGATIONS OF SCIENTIFIC MISCONDUCT

5.1 The BBSRC takes seriously any allegation of scientific misconduct. Where any allegation of scientific misconduct is made, the institution as identified in paragraph 5.2 must thoroughly investigate the allegation and prepare a written report.

5.2 Where the accused individual is employed by an institution, that institution is responsible for investigating the allegation. Where the accused is a student, the institution employing the student's principal supervisor is responsible. Where the accused individual is working at an institution, but not formally employed there (eg a visiting researcher), the institution at which the accused is working at the time of the alleged transgression is responsible.

5.3 Once an allegation is brought to its attention, BBSRC reserves the right to suspend the processing of any applications in which the accused is/are involved, pending the outcome of the investigation. The applicant shall only be entitled to resubmit the application if:

(a) The applicant is subsequently found not to have committed an act of scientific misconduct or the allegation is withdrawn; and

(b) BBSRC is reasonably satisfied with the investigation which has been concluded.

Institutions funded by the BBSRC must have in place written procedures for dealing with allegations of scientific misconduct. The procedures must be made available to all relevant members of staff, research students, visiting researchers, and anyone else involved in research at the institution.

The procedures must ensure that:

- the responsibilities of those dealing with the allegation are clear and understood by all interested parties;
- anyone accused of misconduct or implicated in the investigation has the right to respond;
- the appropriate people are informed of the allegation; as a funder of research the BBSRC must be informed at the earliest opportunity;
- the allegation is dealt with promptly;
- proceedings are confidential to those directly involved and, where appropriate, BBSRC;
- as far as possible the record should be agreed by all interested parties; where this is not possible, differences should be accurately recorded;
- proper records of the proceedings are kept;
- the outcome is made known as quickly as possible to all interested parties including BBSRC.

If requested by BBSRC, institutions must:

- provide all information about the proceedings;
- allow BBSRC to be represented at proceedings and make submissions as part of those proceedings;
- obtain all the necessary consents required to provide information to BBSRC.

Sanctions: BBSRC as funder

The role of institutions

5.4 If an institution fails to comply with its obligations, such that:

(a) the investigation into an allegation is prejudiced, suspended or not completed; and/or

(b) it does not correctly follow its own procedures for investigation of the allegation,

BBSRC reserves the right to revoke the award of the relevant grant or reject the application in question.

5.5 If an institution fails to comply with its obligations, such that:

(a) it persistently fails correctly to follow its own procedures for investigation of allegations; and/or

(b) persistent scientific misconduct has been committed by individuals from that institution applying for, or in receipt of, funding from BBSRC or any other Research Council,

BBSRC reserves the right to suspend any further applications from that institution.

5.6 Institutions must have in place clear sanctions against an individual in instances where an allegation is upheld.

Implications for individuals

5.7 If, as a result of any internal investigation(s) carried out by an institution, court proceedings, disciplinary proceedings, or other proceedings heard by a competent tribunal, the individual is found to have committed an act of scientific misconduct, either in the application itself (and supporting documentation), or in carrying out the research at any point after funding has been awarded, BBSRC reserves the right to:

(a) reject any applications received from the individual and under consideration by BBSRC at that point in time; and/or

(b) withdraw any funding which the institution is receiving from BBSRC in connection with research being carried out by the individual (whether related to the grant, or application in question or not); and/or

(c) prevent the individual from submitting any further applications for funding to BBSRC indefinitely (or for such period of time as BBSRC determines in its absolute discretion); and/or

(d) reclaim from the institution any and all money awarded by BBSRC in connection with the application, or grant, in question.

5.8 If, following any investigations in accordance with paragraph 5.4, the individual is found not to have committed an act of scientific misconduct, or the allegation is withdrawn, the institution must protect the interests of the individual, and make the outcome clear to all who have been involved. If the allegation was made publicly, the institution must make public the outcome of the investigation. Investigators should also make clear whether or not they believe the allegation was made in good faith. If it was, the interests of the complainant must also be protected, in keeping with the Public Interest Disclosure Act 1998. If the investigators suspect the allegation was malicious this would constitute malpractice, and should be dealt with according to the relevant procedures.

Sanctions: BBSRC as employer

5.9 For BBSRC employees, the BBSRC's Staff Code, which forms part of the individual's terms and conditions of employment, states that: "employees must maintain the highest standards of honesty and integrity in presentation of scientific work, data and results. Fabrication of data or results is gross misconduct". Under the code, gross misconduct may lead to dismissal for a first offence, and this dismissal may be summary.

6. MONITORING

6.1 The BBSRC will monitor the efficacy of policies put in place to ensure good scientific practice, calling if necessary on the offices of an independent ombudsman. Together with other Research Councils, the BBSRC requires the institutions it funds to report annually to RCUK the number of allegations involving its funding that have been or are being formally investigated.

7. REFERENCES

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http://www.epsrc.ac.uk/CMSWeb/Downloads/Other/GoodPracticeGuideSciEngRes.doc

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