Good Research Practice

25 June 2002

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1. Introduction

Scholarly research has been conducted at Trinity College, Dublin for over four centuries. In that time, there has been no indication other than this research has been carried out to the highest international standards. However, in many areas, research has become very competitive and more complex in its collaborative links. Moreover, society is now seeking increasing accountability and transparency in its public institutions. To that end and to bring Trinity into line with best international practice the Board has adopted a policy on Good Research Practice. The guidelines laid down in this policy apply to all staff categories, to all research students and to all in the research community, including visitors, throughout the college, including its affiliated teaching hospitals and other institutions. Good research practice cannot be policed. Rather it must be inculcated in the research ethos of the college and it will be the responsibility of heads of departments and equivalents to ensure that an appropriate system is in place to inform all concerned about their rights and duties as laid out in this document. Good research practice will in some areas place limits on the nature of research being carried out. However, the principle of academic freedom must at all times be defended. It is recognised that, given the novel nature of this policy and its complexity, frequent revisions may be required in its early days. The research Committee should provide a progress report to Council on the implementation of this policy every three years.

2. Ethics

2.1 Preamble

The following guidelines apply to all biomedical, behavioural and social research involving human subjects and participants; research involving animals; research involving human biological material and research involving genetically modified organisms.

2.2 General Guidelines

The following sites offer comprehensive guidelines on good ethical practice when conducting research involving human participants, or samples of human material, and animals.

2.2.1 In biomedical research ethical principles have been summarised as:

- respect for the individual
- beneficence (research should have the maximum benefit with minimal harm)
- justice (all research subjects and populations should be treated equally)

For guidelines on biomedical research see the Declaration of Helsinki http://www.wma.net/

2.2.2 For research using pharmaceuticals see International Conference on Harmonisation Guidelines for Good Clinical Practice (The International Conference on Harmonisation of Technical Requirements for Registration of Pharmaceuticals for Human Use (ICH))
http://www.ifpma.org/ich1.html

2.2.3 For guidelines on biomedical and behavioural research involving human participants see the Belmont Report
http://ohrp.osophs.dhhs.gov/humansubjects/guidance/belmont.htm

2.2.4 For human participants involved in behavioural research, the autonomy of the potential research participant should be respected by providing maximum information on the implications of participation in a project and allowing independent decision-making on whether to participate. The information should include written details of risks and benefits in participating, and a guarantee of confidentiality. The participant should sign a consent form but be free to withdraw from the project without penalty. Participants are also free to access their own data at any time under the Freedom of Information Act.

For guidelines using human participants in behavioural research see
US Department of Health and Human Services: Office for Human Research Protections: http://ohrp.osophs.dhhs.gov/
The American Anthropological Association's code of Ethics:
http://www.aaanet.org/committees/ethics/ethcode.htm

The British Sociological Association: http://www.britsoc.org.uk/about/ethic/ht

2.2.5 When research involves children or other potentially vulnerable groups, rigorous adherence to the appropriate professional codes of ethical practice is required and particular attention must be paid to issues such as access, informed consent by both participants and carers, and duty of care. Detailed guidelines for such research are available:
The (UK) National Children's Bureau http://www.ncb.org.uk/resguide.htm

2.2.6 Research involving animals is governed by EC directive 86/609. Researchers must have completed a training programme and must be licensed by the Department of Health and Children. For guidelines on the use of animals in scientific research see:
http://www.tcd.ie/BioResources/teach/healthlaw.htm

2.2.7 For guidelines on research involving genetically modified organisms (GMOs) and genetically modified (GM) products see the Australian Commonwealth Department of Health and Ageing, Office of the Gene Technology Regulator:
http://www.health.gov.au/ogtr/committees/gtec.htm

2.3 Relevant Regulations

2.3.1 EC legislation on Biomedical Ethics
http://www.cordis.lu/rtd2002/science-society/ethics.htm

2.3.2 The use of medications and medical devices in research may require the permission of the Irish Medicines Board under the Control of Clinical Trials Acts 1987 and 1990
http://www.imb.ie/pubs/pubs.htm

2.3.3 The use of radiation is covered by permission from the Radiological Protection Institute of Ireland
http://www.rpii.ie
Additional details are available on the Trinity College Radiation website
http://www.tcd.ie/Buildings/Radiation/index.html
(Note: There is no regulatory requirement for non-ionising radiation techniques such as ultrasound and magnetic resonance imaging (MRI)

2.3.4 Irish Legislation on genetically modified organisms
http://www.environ.ie/environ/envindex.html

2.3.5 The use of hospital resources may require the permission of hospital authorities.

2.4 Proposal for Trinity College Research Ethics Committee

It is proposed that an institutional research ethics committee be established to protect the rights and welfare of human research participants and samples of human material, research involving animals including research involving genetic material, conducted

under the auspices of Trinity College. This committee will function independently of but in co-ordination with other sub-committees (see 2.4.2. below). It is recommended that the existing College Medical Ethics Committee cease to function allowing relevant issues to be referred to various hospital-based ethics committees.

2.4.1 The role of the Trinity College Research Ethics Committee will be:

- to develop policy;
- to monitor and review all matters pertaining to research ethics at the University;
- to be responsible for liaison with external organisations; and
- to be responsible for the co-ordination of information and education and training of staff and students in research ethics policy and procedures. (see 2.4.3 below)

The Research Ethics committee should establish several sets of broad guidelines governing the wide array of research in College. For certain types of project it may be possible to develop generic or expedited forms of approval.

2.4.2 Extant Ethics Committees based in or affiliated with Trinity College, Dublin

- Trinity College Medical Ethics Committee
- Trinity College Bio-Resources Use of Animals in Scientific Research
- Trinity College Department of Psychology Ethics Committee
- The Joint Research Ethics Committee (St James's Hospital, Adelaide and Meath Hospital and Dublin Dental Hospital)
- St Patrick's Hospital Research Ethics Committee
- Rotunda Hospital Research Ethics Committee
- School of Nursing and Midwifery Research Ethics Committee: http://www.tcd.ie/nursing_midwifery/ethics/ethics.html

2.4.3 Education and training may, for example, be web based with a printable certificate on completion. The US Department of Health and Human Services, Office for Human Research Protections currently has such a facility. Their certificate of ethical training is accepted by, and is a requirement of all US research funding bodies (e.g. NIH). This training could be adopted by Trinity College: http://ohrp.osophs.dhhs.gov/irbasur.htm

2.4.4 For each ethics committee the following may be required:

- standard operation procedure with details including: membership; frequency of meetings; application form, define studies requiring ethics clearance, lines of reporting; autonomy, appeals
- Secretarial support
- Legal support and advice
- Indemnity

3. Integrity

3.1 Preamble

Research Integrity covers many issues including research misconduct, conflict of interest and policies for inquiring into allegations of research misconduct. Many organisations have already put in place definitions and policies. These include, the University of Queensland, the University Of Glasgow, Stanford University, the Office of Research Integrity (U.S. Office of Health and Human Services), University of Canberra, Medical Research Council UK and Active Risk Management in Education project web site, a UK project – funded through HEFCE. The following guidelines for researchers in Trinity College, Dublin are extracted broadly from all of the above sources.

3.2 General Guidelines

This section starts by addressing the definition of research misconduct whilst making provision for honest error or differences of opinion. A subsection on potential conflict of interest and its definition follows. Disclosure of any potential conflict of interest is essential for the responsible conduct of research and reference is made to Appendix 1 (Section 7) at the end of this document showing the form to be used in making a declaration of interest. The next subsection outlines the stages that should take place when dealing with an allegation of research misconduct. The section on research integrity concludes with references which provide comprehensive background information and which were utilised in the development of guidelines for this section of the good research practice document.

Where existing relevant mechanisms are in place (such as in the case of Policy and Procedures for Dealing with Complaints of Harassment including Sexual Harassment or the Policy on Fraud) these are cited and references provided.

3.3 Research Misconduct

3.3.1 Research Misconduct Defined

3.3.1.1 Research Misconduct is defined as but is not limited to fabrication, falsification or plagiarism in proposing, performing, or reviewing research, or in reporting research results.

3.3.1.2 *Fabrication* is making up data or results and recording or reporting them.

3.3.1.3 *Falsification* is manipulating research materials, equipment, or processes, or changing, distorting, dishonestly misinterpreting or omitting data or results such that the research is not accurately represented in the research record. The omission of data is considered falsification when it misleads the reader about the results of the

research. Publication of data known or believed to be false or misleading is regarded as falsification.

3.3.1.4 The *research record* is the record of data or results that embody the facts resulting from scientific inquiry, and includes, but is not limited to, research proposals, laboratory records, both physical and electronic, progress reports, abstracts, theses, oral presentations, internal reports, and journal articles.

3.3.1.5 *Plagiarism* is the appropriation of another person's ideas, processes, results, or words without giving appropriate credit, or dishonest use of unacknowledged sources. Plagiarism is also dealt with in the University of Dublin, Trinity College's calendar in the section dealing with 'General regulations and information' (section G).

3.3.1.6 Research misconduct includes misquotation or misrepresentation of other authors or inappropriate attribution of authorship.

3.3.1.7 Research misconduct does not include honest error or honest differences of opinion in interpretations or judgements of data. In particular, the analysis of either old or new material and subsequent drawing of new conclusions, as exemplified in Arts and Humanities research is not considered to be Research misconduct.

3.3.1.8 Maliciously making false accusations of research misconduct against someone is considered a serious matter that may be dealt with using disciplinary measures. However, drawing new conclusions from material previously interpreted in a different way, which may result in previous conclusions being contested, as exemplified in Arts and Humanities Research, is not regarded as maliciously making false accusations of research misconduct (see also 3.3.1.7 above).

3.3.1.9 Included as research misconduct is retaliation of any kind against a person, who acting in good faith, reported or provided information about suspected or alleged misconduct.

3.3.1.10 Research misconduct includes failure to obtain appropriate permission where required to conduct research, whether deliberate, reckless or negligent and also includes misuse of research funds or research equipment. Fraud or misuse of research funds or research equipment may also be dealt with under separate Financial Regulations and Fraud Policy in the College.

3.3.1.11 Research Misconduct also includes collaborating with others to become involved in research misconduct or encouraging others to be involved or concealing research misconduct by others when there is clear evidence to that effect.

3.3.1.12 *Deception in relation to research Proposals.* Principal Investigators should take all reasonable measures to ensure that accuracy and completeness of information is contained in applications for funding.

Misrepresentation of a researcher's qualifications or ability to perform the research in grant applications or similar submissions may constitute falsifications or fabrication in proposing research.

3.3.1.13 *Integrity in Managing Research Projects.* Principal Investigators should take all reasonable measures to ensure compliance with sponsor, institutional, legal, ethical and moral obligations in managing projects.

3.3.1.14 *Behaviour in the Conduct of Research***.** The University acknowledges that it must play a proactive role in helping researchers achieve Good Practice in Research. Researchers must strive continually to improve their scholarship and to ensure that their knowledge is current. Above all, they must bring due care and diligence to bear upon the discharge of their academic duties in relation to research. This is so for staff involved in research on animals, as well as humans (section 2 – Ethics) who must not engage in unethical behaviour. In particular staff involved in research must ensure that deviation from good research practice does not occur where this results in unreasonable risk of harm to humans, particularly children and vulnerable adults, animals or the environment. Researchers must refrain from participating in or initiating work that they are not competent to perform. They should be willing, when in doubt, to obtain such advice and assistance as will enable them to execute their research competently.

3.3.1.15 *General Principles of Sound Research Design*. In seeking new knowledge, it is imperative that a good methodology (i.e. sound research design) be employed that ensures trust in the accuracy of the data collected and facilitates correct interpretation of the data.

3.3.1.16 *The Good Image of the University and the Academic Community*. Researchers must refrain from any conduct or action in their role as a researcher employed by the University which would unfairly detract from the good name of the institution and the relevant professional body to which they may belong.

3.3.1.17 *The Determination of Research Misconduct*. The College will investigate all allegations of Research Misconduct using the procedures outlined in section 3.4 in order to make a judgement as to whether Research Misconduct as defined above has occurred.

3.3.1.18 In human or animal experimentation, departing from approved protocols (see section 2, Ethics) accepted by a specific discipline would constitute serious misconduct.

3.3.2 Findings of Research Misconduct

A finding of research misconduct requires that:

There be a significant departure from accepted practices of the relevant research community; and the misconduct be committed intentionally, or knowingly, or recklessly; and the allegation be proven by a preponderance of evidence.

It should be noted that this definition clearly supports that reinterpretation of scripts as exemplified in Arts and Humanities Research is not research misconduct.

The University take seriously any allegation of research misconduct and has a written procedure for investigating and resolving such allegations.

Any member of the University who believes that an act of research misconduct has occurred or is occurring should report it using the process laid out below (see section 3.4 Policy and Procedure for inquiring into Allegations of Research Misconduct).

3.3.3 Conflict of Interest

The text below sets out the definition of conflict of interest and refers to a Declaration of Interest document that is to be signed at contract signature stage. The College may decide in the future to use an annual declaration of interest instead of a declaration of interest per contract. The primary purpose of seeking declarations of interest is one of transparency. The College and society as a whole has the right to know that a recognised expert in a given area has an interest, material or otherwise which could be seen to pose a conflict. Declaring such interests is one way of indicating that the declared interest is perfectly ethical and need not interfere in the researcher's capacity to conduct independent research.

3.3.3.1 Definition of Conflict of Interest
For the purposes of this policy, the definition of Conflict of Interest shall include, but not be limited to, the following:

3.3.3.1.1 When a person's judgement concerning a primary interest could be unduly influenced by a secondary interest.

3.3.3.1.2 Apart from financial interests (including benefit in kind), conflicts might, for example, be personal, academic or political.

3.3.3.1.3 Conflicts of interest can occur at any stage of the research endeavour. For example, submitting the same proposal to different grant bodies may be acceptable, whereas accepting more than one source of funding for exactly the same proposal may not be acceptable.

3.3.3.1.4 There is nothing inherently unethical in finding oneself in a position of conflict of interest; what is required is to recognise the fact and deal with it accordingly.

3.4 Disclosure of potential conflict of interest

3.4.1 Disclosure of any potential conflict of interest is essential for the responsible conduct of research. This should cover disclosure of such interests to the persons responsible for institutional research management, to the editors of journals to which papers are submitted (some editors already require this) and to bodies from which funds are sought.

3.4.2 As part of the College's policy on Good Research practice, an obligation is placed on the recipients of research grants to declare any interest that would interfere with or compromise the performance of research supported by the grantor. This is to ensure the technical integrity and impartiality of the researcher's work. Declarations of interest of all participants or proposed participants in research must be disclosed at the time of contract acceptance (See Annex 1 – Declaration of Interest Form). Intentionally failing to reveal a known interest may be regarded as research misconduct and may be subject to disciplinary action.

3.4.3 When circumstances may exist (at contract acceptance stage or during the course of any research project) which could lead to a conflict of interest or be seen to do so, the investigator is required to divulge sufficient such information to the University.

3.4.4 If a researcher working with an organisation is approached by a competing entity, the onus is on the researcher to inform the latter entity that he/she is already conducting some work for the former entity provided there is a substantial overlap in the research endeavour. Similarly, the researcher should only accept a contract with the latter entity if he/she has informed the former entity of this new contract (if there is a substantial overlap in the research endeavour).

3.4.5 Given that documents relating to the Declaration of Interest will be accessible to any who may request it under the Freedom of Information Act, the onus is on a researcher to think carefully about their position before filling in the declaration of interest form. Only exceptionally will such a document be withheld (for example, if the research is commercially sensitive).

3.4.6 Every researcher should exercise responsibility when applying to and/or accepting money from a sponsor.

3.4.7 The Declaration of Interest Documents should be kept for a minimum period of five years.

3.5 Policy and Procedure for inquiring into Allegations of Research Misconduct

It is inevitable that there will be some incidence of allegations of misconduct and it is essential that procedures exist to deal with such allegations.

Trinity College, Dublin has a number of existing mechanisms in place to deal with various aspects of misconduct. The Office of the Senior Dean and the Office of the Junior Dean deal with various aspects of disciplinary action at the academic and student level. There is also a College policy on how to deal with allegations of Fraud. Policies and procedures also exist in College to deal with complaints of harassment including sexual harassment. It is suggested that these policies be used as a template (subject to some adaptations) for dealing with allegations of Research Misconduct. The Office of the Senior Dean should take responsibility for this aspect of Good Research Practice

3.5.1 Essential Steps in Handling Allegations of Scientific Misconduct

A procedure should include all of the following stages:

- Preliminary action
- Assessment Stage
- Outcome of an assessment stage
- A formal Investigation stage
- Conclusion of the Investigation stage
- An Appeals stage

Allegations of misconduct should be investigated and appropriate action taken. All elements of the procedure should be handled as expeditiously as possible. In the case where Research Misconduct is found, procedures should be put in place to prevent it from recurring.

Whilst all procedures put in place must adhere to the Freedom of Information Act, the method of dealing with allegations should ensure that, in so far as is possible, care be taken to protect the positions and reputations of those who reported the alleged misconduct as well as of those who have been accused.

3.5.2 Procedures

Only those directly involved in an inquiry or investigation should be aware that the process is being conducted or have any access to information obtained during its course. Where appropriate, efforts should be made to restore the reputations of those accused when allegations are not confirmed (Stanford). However, all members with an interest in the allegation need to be protected and this will therefore also include research students/trainees and other staff members working with the accused staff member. Other interested parties could include the public, if for example surveys or clinical trials using the public were involved, journals if fraudulent papers have been or are about to be published and funding bodies who have funded or part-funded the research in question.

3.6 References

3.6.1 Stanford University, Scientific Misconduct: Policy on Allegations, Investigations and Reporting (Research Policy Handbook section 2.5) – http://www.standford.edu/dept/DoR/rph/2-5.html

3.6.2 Oireachtas Registers of Interests – http://www.irlgov.ie/poc/2376_246.htm

3.6.3 The University Of Glasgow - Code of Policy and Procedures for Investigating and Resolving Allegations of Misconduct in Research – http://www.gla.ac.uk/R-E/pub/policies/index.html#goodpractice

3.6.4 Office of Research Integrity, U.S Department of Health and Human Services – web address: http://ori.dhhs.gov/html/news/fedreg76260.asp

3.6.5 Active Risk Management in Education project web site – funded through HEFCE - web site: http://armed.ilrt.bris.ac.uk/

3.6.6 University of Canberra – Guidelines for Responsible Practice in Research and Dealing with Problems of Research Misconduct - http://wasp.canberra.edu.au/secretariat/respprac.html

3.6.7 Trinity College, Dublin – Policy and Procedures for Dealing with Complaints of Harassment including Sexual Harassment – http://www.tcd.ie/Secretary/Policies/harass.html

3.6.8 Trinity College Dublin – Fraud Policy – http://www.tcd.ie/Secretary/Policies/fraud.html

3.6.9 The University of Queensland –Revised Procedures for the conduct of Research and the Declaration of Interest Form http://www.uq.edu.au/hupp/contents/view.asp?s1=4

4. Good Publication Practice

4.1 Preamble

Several International Committees have drawn up lists of rules and laws relating to Good Publishing Practice. Prominent examples are the Committee On Publication Ethics (COPE) report 1998, published by the British Medical Journal and the Vancouver Group Requirements, published, for example, by the New England Journal of Medicine. Both committees were established by medical journal editors to provide guidelines both for researchers in submitting manuscripts to journals and for editors in dealing with breaches of research and publication ethics. Many national and international grant funding bodies and Research Councils have also summarised the rights and responsibilities of researchers in relation to publication ethics. Examples are the UK Medical Research Council Ethics Series on Good Research Practice and the Danish Committee on Scientific Dishonesty Guidelines for Good Scientific Practice. These documents incorporate many of the central principles drawn up by the two Editorial Groups mentioned above. Although these guidelines were drawn up for research in natural sciences the general principles are equally relevant for publication in the areas of behavioural and social research and in literary and linguistic studies.

4.2 General Guidelines

4.2.1 Researchers have a fundamental right to publish their findings. This right must be taken into consideration when contractual agreements are made with funding partners. An individual researcher's right in this context must be within the framework of any collaboration with other participants, having respect for agreements made and for other participants' rights (see 4.3 below).

4.2.2 Researchers should publish their findings in good time and should not unnecessarily withhold data that may be of interest to the public or to the advancement of knowledge.

4.2.3 Research findings should be disseminated in such a way that the researcher's peers and/or the public can make objective assessments of the results. Suitable vectors include peer-reviewed or similarly reputable publications in journals, books, software, policy statements, specialist conferences or expert reports.

4.2.4 The quality of the results of a project must provide the sole reason for the decision to publish. Therefore, finished research results should be presented for publication even when results differ from previous expectations. Deviations from this principle result in biased reporting.

4.2.5 Supervisors of postgraduate students should firmly protect the students' rights in terms of publication and authorship. Clear rules should apply in terms of students who do not write up their postgraduate work within a reasonable time as determined by the Department. All authors of review articles should have read and critically assessed the literature quoted in the review. These rules must uphold the student's basic rights as a colleague who has contributed substantially to the creative process.

4.2.6 Duplicate publication of data from the same study is not acceptable.

4.2.7 Before dissemination, authors should familiarise themselves with published ethical guidelines. Examples of such guidelines in the scientific area are the COPE guidelines or the Vancouver Requirements. In Arts and Humanities research, the College expects that authors do not publish libellous or defamatory material and that standard codes of political, ethnic or moral ethics are not breached.

4.2.8 Authors must ensure that they are not guilty of plagiarism in their publication. Thus, they should provide a complete reference list of all sources of information used in the preparation of their article or talk; they should fully cite the sources of tables, diagrams, quotations, paraphrases, etc. that are included in the article, and they should obtain permission from holders of copyright where necessary.

4.2.9 Material published on the college Web is supervised and edited by a College Web Steering Committee. The code of conduct for users of the computer facilities in College precludes the use of College facilities to publish material that is "obscene, libellous, defamatory or in violation of any right of any third party".

4.3 Authorship Rights and Responsibilities in group research

In many disciplines, research may be carried out in collaboration with other colleagues, either contractually or informally. In particular, where national and international funding agencies are involved in sponsoring the research, a principal investigator within college is identified. This investigator assumes the overall responsibility for the project within College. Authorship rights and responsibilities of researchers working as part of a research group within College are summarised in the guidelines below.

4.3.1 The principal investigator of a research team should authorise all aspects of a proposed publication. This includes the content of the paper, the appropriate authorship, the place of publication, the protection of intellectual property rights, the agreed rights of sponsors and any release of results on the Internet.

4.3.2 To obtain the right to authorship a researcher should:

4.3.2.1 Contribute substantially to the creative process within any of the following areas; generation of hypotheses, design of experiments, experimental work, collection, analysis or interpretation of data.

4.3.2.2 Contribute substantially to the preparation of the article to be published either through preparation of drafts or through critical revision.

4.3.2.3 Accept in writing the final draft and be prepared to take public responsibility for the content. It follows that all authors must be given

the opportunity to review and approve the final version of an article to be submitted for publication.

4.3.2.4 Within reasonable limits accept responsibility for the contents of the report being based on honest research.

4.3.3 It is important that the list of authors on a publication accurately reflects the originators of the work, therefore authors have a responsibility to accept the right of authorship. By extension, individuals have a duty not to accept gift authorship or to relinquish their rightful authorship to co-workers who do not satisfy the criteria for authorship

4.3.4 A right to authorship must not be tied to an individual's function, position or seniority. In this respect, the role of a supervisor may vary considerably and the right of a supervisor to authorship should be subject to the four criteria stated above.

4.3.5 Supportive and isolated assistance or guidance in a research programme that does not justify authorship should be acknowledged in a separate section of the paper.

4.3.6 All involved parties (authors, sponsors and editors of journals) have a duty to publish information of any sponsorship or other major material help obtained for a project.

4.3.7 Researchers participating in a collaborative research project should not prepare separate publications or deliver an oral dissemination without prior consent of the collaborators.

4.3.8 Individuals who use results from a research project for a special publication such as an academic dissertation must formally request permission from the research group and must fully acknowledge the source of the data in the dissertation.

4.3.9 The principal researcher in a publication must assume the responsibility of correcting errors and if necessary retracting published findings if errors are found that substantially degrade the worth of the work.

4.4 References

4.4.1 Committee on Publication Ethics. The COPE Report 1998
http://bmj.com/misc/cope/tex1.shtml

4.4.2 Uniform Requirements for Manuscripts submitted to Biomedical Journals. International Committee of Medical Journal Editors. The New England Journal of Medicine 1997,336:309-315.
http://www.nejm.org/general/text/requirements/1.htm

4.4.3 MRC Ethics Series. Good Research Practice, 2000. http://www.mrc.ac.uk

4.4.4 The Danish Committee on Scientific Dishonesty Guidelines for Good Scientific Practice ISSN 1395-098. Copenhagen, 1998. http://www.forsk.dk/eng/uvvu/index.htm.

5. Supervision of Research

5.1 Preamble

The supervision of Research is an essential function of the University and the following guidelines are included as proposed Good Practice in this area.
The document is divided into a section regarding the responsibilities of the Department in terms of research supervision, a section dealing with the suitability of the supervisor, a section covering the responsibilities of the supervisor and, finally, a section dealing with the ongoing process of supervision (existing College guidelines).

5.2 Responsibilities of the Department

A number of departmental responsibilities were identified whilst examining the process of supervision of research:

5.2.1 If the Department wishes to accept research students, it must have in place clear and identifiable objectives and standards for the conduct of the research. This includes ensuring there is appropriate supervision for the duration of the research.

5.2.2 Each department should clarify to the graduate student what exactly the requirements for the award of a particular degree are, and what constitutes a PhD. Supervisors too should be fully aware of the requirements.

5.2.3 As a minimum, existing departmental procedures regarding research students should be systemised and available in a departmental postgraduate handbook.

5.2.4 Some measure of training in subject-specific technical skills should be provided to new researchers at departmental level. Complementary training in professional skills should also be offered at faculty / university level.

5.2.5 The Department should strive to provide postgraduate panels / advisory committees composed of members of the Department with the aim of monitoring the progress of each postgraduate student via presentations, reports and interviews. This gives the researcher the chance to interact with other members of the Department other than the supervisor.

5.3 Suitability of the Supervisor (adapted from University of Exeter guidelines [1.6.3])

A number of points regarding the suitability of a particular supervisor to supervise a research student are listed below:

5.3.1 A research degree is neither a necessary nor a sufficient criterion for successful research supervision [1.6.3].

5.3.2 All first supervisors should normally be:

5.3.2.1 Active or experienced researchers in a field relevant to the student's field of study

5.3.2.2 Approved to supervise by the Head of Department confirming that they have the necessary skills and experience to monitor, support and direct research students' work.

5.3.3 Experienced and successful supervisors should be approved by the Department on the basis of their record of successful supervision [1.6.3].

5.3.4 Staff new to supervision, with or without a research degree, should serve an apprenticeship normally as a second supervisor. The first supervisor would assume responsibility for the introduction of the second supervisor to the College policy on Good Research Practice.

5.3.5 Where an experienced supervisor is not available, an inexperienced supervisor might be the first supervisor.

5.3.6 Each Department should ensure departmental staff are familiar with the College's policy on Good Research Practice.

5.3.7 In regard to the number of research students that a member of staff might be expected to supervise at any one time, while a maximum number is not applied, it is suggested that:

5.3.7.1 When determining research supervision load, factors such as the expertise of the supervisor and their other commitments should be taken into account.

5.3.7.2 When considering the appointment of supervisors, the Head of Department should have available information regarding the contact load of the supervisor, as well as information regarding existing supervision duties.

5.4 Responsibilities of the Supervisor (adapted from University of Exeter guidelines [1.6.4])

The essential responsibilities of the supervisor are listed below – a number of these responsibilities appear in the section on the ongoing process of supervision.

5.4.1 To give guidance about the nature of research and the standard expected. This includes guidance on planning of the research, research methods and techniques, direction to relevant literature and sources and information about relevant training programmes on offer.

5.4.2 To ensure the candidate is aware of regulations and legal issues including, but not limited to data protection, copyright, intellectual property and ethical considerations.

5.4.3 To assist in the arrangement of necessary administrative steps such as approval of thesis title, registration, and transfer to the PhD register.

5.4.4 To establish and maintain regular contact through meetings held at a frequency commensurate with the nature, stage, and level of research being

undertaken. The frequency of such meetings is to be determined by the Department but should not be less than once per month.

5.4.5 To request written work as appropriate and return such work with constructive feedback within an agreed period of time.

5.4.6 To provide guidance and assistance to the candidate regarding presentation or publication of the research both internally and externally.

5.4.7 If necessary, to warn the student, in writing, of inadequate progress or of any unsatisfactory standard of work.

5.4.8 To provide guidance on the writing and preparation of the thesis. This should include commenting on at least one draft.

5.4.9 To ensure that the student is prepared for the *viva* and understands its role in the overall examination process.

5.4.10 To advise the student subsequently of the implications of any recommendations from the examiners and assist in the preparation of any re-submission.

5.4.11 To encourage independent thought and investigation, and to ensure the student is clearly aware of the requirements, and appreciates what they are expected to achieve, in the course of their degree.

5.4.12 To assist the student after the completion of the research degree, in providing references or direction to postdoctoral opportunities.

5.5 Process of Supervision (Existing TCD Guidelines)

The guidelines issued by the Graduate Studies Office with regards to the process of supervision of research remain in the same form as published by the Graduate Studies office and all supervisors are referred to them as an essential resource in research supervision:

The guidelines may be viewed on-line at:

http://www.tcd.ie/Graduate_Studies/Local/Staff/gl-chklist.htm

http://www.tcd.ie/Graduate_Studies/Local/Staff/gl-super.html

5.6 References

5.6.1 Trinity College Dublin – Research Supervisors Checklist [On-Line] Available: http://www.tcd.ie/Graduate_Studies/Local/Staff/gl-chklist.htm

5.6.2 Trinity College Dublin– General Comments on Postgraduate Supervision. [On-Line] Available: http://www.tcd.ie/Graduate_Studies/Local/Staff/gl-super.html

5.6.3 University of Exeter – Code of Good Practice: Appointment of Research Degree Supervisors [On-Line] Available: http://www.ex.ac.uk/admin/academic/tls/tqa/aptsuper.htm

5.6.4 University of Exeter – Code of Good Practice: Supervision of Postgraduate Research Students. [On-Line] Available: http://www.ex.ac.uk/admin/academic/tls/tqa/pgsuper.htm

5.6.5 University of New South Wales – Guidelines for the Supervision of Postgraduate Research. [On-Line] Available: http://www.chem.unsw.edu.au/postgrad/models/GuidSupvPGR.pdf

5.6.6 University of South Australia – Code of Good Practice: Research Degrees Supervision. [On-Line] Available: http://www.unisa.edu.au/adminfo/codes/research.htm

5.6.7 University of Western Australia – Code of Good Practice for Postgraduate Student Research and Supervision. [On-Line] Available: http://www.research.uwa.edu.au/policy/pg/code.html

6. Retention of Primary Data

6.1 Preamble

Primary data are those that have been collected by, or on behalf of, the researcher. The retention of primary data is of particular importance for research which is dependent on the collection of observations relating to the data subject, for example in social, medical, scientific and experimental research. A well-implemented policy on the retention of primary data enhances the quality, reputation and value of the research undertaken and provides the possibility of auditing and verifying the results of research which is based on primary data. This policy has been adapted and developed from others in common use; in particular, from those of the Biotechnology and Biological Sciences Research Council, the University of Glasgow and the Medical Research Council.

6.2 General policy

Throughout their work, researchers are required to keep clear and accurate records of the research 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. For similar reasons, data generated in the course of research must be kept where this is possible and should be retained securely in paper, electronic or other form, as appropriate to the task and the type of research undertaken. In general the College requires such data to be securely held for a period of ten years after the completion of a research project; see section 6.3.5 below.

6.3 Guidelines

6.3.1 Data should be stored in a way that permits a complete retrospective audit where necessary.

6.3.2 Data records should be stored safely, with appropriate contingency plans.

6.3.3 Data records should be monitored regularly to ensure their completeness and accuracy.

6.3.4 Original data or images should be recorded and retained. This is especially important where data or images are subsequently enhanced. If possible, both original and enhanced data/images should be stored.

6.3.5 Primary research data (and where possible, relevant specimens, samples, questionnaires, audiotapes, etc.) must be retained in their original form within the College for a minimum of ten years from completion of the project where this is practical. Where this is not possible the nearest practical alternative to retaining the original evidence must be employed (e.g. an image or data set from the original). It is the responsibility of each department to specify the

arrangements appropriate to their area; see section 6.4 ‘Departmental codes of practice’.

6.3.6 Work of significant public importance should be archived in a suitable location.

6.3.7 Research records relating to clinical or public health studies should be retained for a sufficiently extended period to provide scope for longer follow-up if necessary.

6.3.8 Researchers who are leaving the College and who wish to retain data, or copies of data, must get permission from their head of department to do so. Where personal data are involved, the request should be refused unless it is clear that future use will be consistent with the terms of the original consent given. Source data must continue to be held by the College following the departure of the researcher in order to fulfil the commitment to good research practice.

6.3.9 Publication of the data (including in theses) does not negate the need to retain source data.

6.4 Departmental codes of practice

6.4.1 Where the nature of a department’s research involves primary data, the head of department is required to adopt a code of practice for the retention of this data in their department. The code shall take into account the nature of the discipline concerned and any special factors affecting the environment for research in their department. This code must be publicly available and published on the department’s website.

6.4.2 The retention of different types of primary data raises different issues and may require different procedures. Factors affecting the precise codes adopted by departments include the nature of the primary material, which may be problematic, such as degradable specimens, toxic specimens, voluminous source material, awkward material, records needing special readers or in electronic formats no longer current, etc. Limitations on storage arising from costs of storage, staff resources required, physical problems of storage, accessibility in the context of changing technology, etc. may require a department to adopt the nearest practical alternative to retaining original source material.

6.4.3 Researchers are required to adhere to the departmental code on the retention of research data.

6.4.4 Heads of department, or those appointed to act on behalf of the head, will ensure that the code adopted for their department is implemented by those concerned.

6.4.5 Researchers or others in a department wishing to remove or dispose of research data may only do so with the approval of the head of department, or deputy.

6.4.6 Special procedures are necessary for electronically generated data.

- Data should be backed-up regularly; duplicate copies should be held on disc in a secure but readily accessible archive.
- Where feasible, a hard copy should be made of particularly important data.
- Where primary data is retained in electronic form appropriate software must be available to process it.
- Special attention should be paid to guaranteeing the security of electronic data.

6.4.7 An example of suitable guidelines for notebooks and electronic records in the medical area is given by the Medical Research Council. 'The following basic policies apply:

- All raw data should be recorded and retained in indexed laboratory notebooks with permanent binding and numbered pages or in an electronic notebook dedicated to that purpose.
- Machine printouts, questionnaires, chart recordings, autoradiographs, etc. which cannot be attached to the main record should be retained in a separate ring-binder/folder that is cross-indexed with the main record.
- Records in notebooks should be entered as soon as possible after the data are collected. Recorded data should be identified by date of the record and date of collection if the two do not coincide. Subsequent modifications or additions to records should also be clearly identified and dated.
- Special attention should be paid to recording accurately the use of potentially hazardous substances (e.g. radioactive materials) in both laboratory notebooks and any central logbooks.
- In clinical studies, consent forms should be kept securely with the raw data, and normally for the same period of time.
- Supervisors should regularly (monthly or as appropriate to the nature of the work) review and "sign off" notebooks of researchers to signify that records are complete and accurate. Queries should be discussed immediately with the individual who recorded the data and any resultant changes to the records should be signed by both. Authentication of data collected and recorded electronically requires special consideration.'

6.5 References

6.5.1 Biotechnology and Biological Sciences Research Council
Statement on Safeguarding Good Scientific Practice
http://www.bbsrc.ac.uk/funding/overview/good_practice.pdf

6.5.2 University of Glasgow
Code of Policy and Procedures for Investigating and Resolving Allegations of Misconduct in Research
http://www.gla.ac.uk/R-E/pub/policies/research-misconduct-final-draft-8jun2000.rtf

6.5.3 Medical Research Council
Ethics Series - Good Research Practice
http://www.mrc.ac.uk/pdf-good_research_practice.pdf

7. Appendix 1

The University of Dublin – Trinity College: Declaration of Interest

(Information provided on this Form may be accessed under the Freedom of Information Act)

As part of the College's good research policy an obligation is placed on the recipients of research grants to declare any interest that would interfere with or compromise the performance of research supported by the grantor. Declarations of interest of all participants or proposed participants in research must be disclosed at the time of contract acceptance. Declaration of interest extends to the researcher or his/her partner or members of his/her family or the research grouping with which the researcher has an employment relationship has an interest. An apparent conflict of interest exists when an interest would not necessarily influence the researcher but could result in the researcher's objectivity being questioned by others. Intentionally failing to reveal a known interest will be regarded as research misconduct and may be subject to disciplinary action

Please note that this Declaration of Interest may be accessed under the Freedom of Information Act.

Where a conflict of interest appears to have been revealed the University may need to consult with the grantor to ensure that the conflict of interest does not compromise the research funded by the grantor. It should be stressed that the existence of a conflict of interest does not automatically disqualify a researcher from participating in an award. (Queensland)

There are different types of conflict of interest. For example the following list, which is not exhaustive, is provided for your guidance. (WHO)

1. a current proprietary interest in a substance, technology or process (e.g. ownership of a patent), considered in or otherwise related to the subject matter of the research (adapted from the WHO);
2. a current financial interest, e.g. shares or bonds, in a commercial entity with an interest in the subject of the research (shares > 10,000 Euro except share holdings through general mutual funds or similar arrangements where the expert has no control over the selection of shares) (adapted from the WHO);
3. Positions such as employment, consultancy, directorship with current or expected financial remuneration with any commercial entity which has an interest in the subject matter related to the research contract. Consultancy is defined as professional activity related to the person's field or discipline, where a fee-for-service or equivalent relationship with a third party exists. (WHO);
4. performance of any paid work or research during the past 4 years commissioned by an organisation with interests in the subject-matter of the research endeavour. Also included is any other non funded interest in such an organisation with interests in the subject-matter of the research endeavour during the past 4 years; (WHO)
5. With respect to the above, an interest in a competing substance, technology or process, or an interest in or association with, work for or support by a commercial entity or organisation having a direct competitive interest should similarly be disclosed (WHO)

Title of Research Project:

Sponsor's Name:

Declaration:

Have you or your partner/family and/or research group any financial or other interest in the subject-matter of the research in which you will be involved, which may be considered as constituting a real, potential or apparent conflict of interest? If **yes** give details in the space below. (WHO).

Type of Interest: e.g. patent, shares etc and to whom they belong.

I, We the undersigned investigators, do hereby declare that we are familiar with the College's Code of Good Research Practice and in particular with the section on conflict of interest. I/We believe that, to the best of my/our knowledge, accepting the grant/conducting this research mentioned above through the University of Dublin, Trinity College does not involve me/us in any conflict of interest. We/I are also aware that if during the course of this research project any conflict of interest arises we/I will undertake to inform the University as expeditiously as possible and understand that the University may choose to inform the grantor. I/We hereby declare that the disclosed information is correct and that no other situation of real, potential or apparent conflict of interest is known to me/us.

Name(s):

Signature(s):

Date:

Witness to the Signatures: