CODE OF PRACTICE FOR RESEARCH

Dr Diana Leighton – REF Manager
Professor Andy Young – Director of Research & Innovation Services

Version 1.0 - September 2010

First approved Academic Board – 27 September 2010
Reviewed and approved October 2012 & November 2014 (University Research and Scholarship Committee)

Review Date – October 2016

Contents

Section 1. Introduction

1.1 Liverpool John Moores University's Code of Practice for Research, hereafter referred to as the Code, has been adapted from the UK Research Integrity Office Code of Practice for Research www.ukrio.org/publications/code-of-practice-for-research/. It also aligns closely with the Universities UK Concordat to support research integrity http://www.universitiesuk.ac.uk/highereducation/Pages/Theconcordattosupportresearchintegrity.aspx#.VH9Hgf5ybdY. As such the Code takes into account sector-wide developments in this area and has been designed to encourage good conduct in research and help prevent misconduct, enabling researchers to conduct research of the highest quality by providing general principles and standards for good practice in research.

1.2 The Code is applicable to all subject areas and does not attempt to micromanage research. No single publication can expect to cover the nuances of all types of research in all disciplines; therefore, the Code should not be seen as prescriptive but as a set of guiding principles and standards to inform the management and conduct of research.

1.3 The Code covers areas of good practice in research with detailed guidance given on core standards for good practice in research.

1.4 The Code complements existing and forthcoming guidance on research conduct, such as that provided by Research Councils UK, the Wellcome Trust or the Council for Science and Technology. Similarly, the Code complements other Universities policies, such as those for health and safety, raising concerns at work, or management of finances or of intellectual property, and does not seek to replace them.

1.5 The Code is organised in the following Sections:

a) Section 2 contains broad Principles which define the responsibilities and values in the conduct of research;

b) Section 3 lists Standards for good practice in research that researchers should comply with. The Standards apply to all disciplines of research;

c) Section 4 is a Recommended Checklist for Researchers. This is a nontechnical checklist summarising the key points of good practice in research and is applicable to all subject areas

1.6 Note that, for the purposes of this Code, "research" refers to the definition used for the Research Excellence Framework in 2014 (REF2014) as published in the REF2014 Assessment Framework and guidance on submissions, p.48; http://www.ref.ac.uk/pubs/2011-02/:

a) 'Research'…"is defined as a process of investigation leading to new insights, effectively shared. It includes work of direct relevance to the needs of commerce, industry, and to the public and voluntary sectors; scholarship*****; the invention and generation of ideas, images, performances, artefacts including design, where these lead to new or substantially improved insights; and the use of existing knowledge in experimental development to produce new or substantially improved materials, devices, products and processes, including design and construction. It excludes routine testing and routine analysis of materials, components and

processes such as for the maintenance of national standards, as distinct from the development of new analytical techniques. It also excludes the development of teaching materials that do not embody original research. It includes research that is published, disseminated or made publicly available in the form of assessable research outputs, and confidential reports".

b) Within Liverpool John Moores University, '*Scholarship'…."is defined as a process of systematic and rigorous enquiry through which novel and contemporary knowledge is created or acquired, adapted and applied to the furtherance of research, the development of the subject and curriculum, and to the practice of teaching, learning and assessment".

Section 2. Principles

2.1 Researchers should adhere to the following Principles, which set out the responsibilities and values relevant to research. While some elements may seem self-evident, and there is some overlap, these Principles aim to encourage all involved in research to consider the wider consequences of their work and to engage critically with the practical, ethical and intellectual challenges that are inherent in the conduct of high quality research.

2.2 Researchers should be guided by these Principles when implementing and complying with the core Standards described in section 3 and the Recommended Checklist for Researchers in Section 4.

2.3 *EXCELLENCE:* researchers should strive for excellence when conducting research and aim to produce and disseminate work of the highest quality.

2.4 *HONESTY:* researchers should be honest in relation to their own research and that of others. They should do their utmost to ensure the accuracy of data and results, acknowledge the contributions of others, and neither engage in misconduct nor conceal it.

2.5 *INTEGRITY:* researchers must comply with all legal and ethical requirements relevant to their field of study. They should declare any potential or actual conflicts of interest relating to research and where necessary take steps to resolve them.

2.6 *COOPERATION:* researchers should promote the open exchange of ideas, research methods, data and results and their discussion, scrutiny and debate, subject to any considerations of confidentiality.

2.7 *ACCOUNTABILITY:* researchers should recognise that in and through their work they are ultimately accountable to the general public and should act accordingly. They should ensure that any research undertaken complies with any agreements, terms and conditions relating to the project, and allows for proper governance and transparency. Researchers should follow the requirements and guidance of any professional bodies in their field of research. Researchers who are members of a regulated profession must follow the requirements and guidance of the body regulating their profession.

2.8 *TRAINING AND SKILLS:* researchers should ensure that they have the necessary skills, training and resources to carry out research, in the proposed research team or through collaboration with specialists in relevant fields, and report and resolve any unmet needs identified.

2.9 *SAFETY:* researchers should ensure the dignity, rights, safety and wellbeing of all involved in research and avoid unreasonable risk or harm to research subjects, patients, participants, researchers and others. They should report and address any concerns relating to the dignity, rights, safety and wellbeing of those involved in research. Research should be initiated and continued only if the anticipated benefits justify the risks involved.

Section 3. Standards for Researchers

3.1 General guidance on good practice in research

3.1.1 Researchers must comply with all legal and ethical requirements and other guidelines that apply to their research. This includes submitting research proposals for ethics review where appropriate and abiding by the outcome of that review. They should also ensure that research projects are approved by all applicable bodies, ethical, regulatory or otherwise.

3.1.2 When conducting, or collaborating in, research in other countries, researchers based in the UK should comply with the legal and ethical requirements existing in the UK and in the countries where the research is conducted. Similarly, researchers based abroad who participate in UK hosted research projects should comply with the legal and ethical requirements existing in the UK as well as those of their own country.

3.1.3 Researchers should ensure that all research projects have sufficient arrangements for insurance and indemnity prior to the research being conducted.

3.1.4 Researchers should:

a) recognise their responsibility to conduct research of high ethical standards;

b) be aware of Liverpool John Moores University's policies and procedures on good practice in research;

c) make sure that their research complies with these policies and procedures, and seek guidance when necessary;

d) ensure that they have the necessary training, resources and support to carry out their research.

3.2 Leadership and supervision

3.2.1 Researchers should promote and maintain an environment which fosters and supports research of high ethical standards, mutual co-operation, professionalism and the open and honest exchange of ideas. They should foster a culture where good conduct in research is promoted and inappropriate conduct is identified and addressed.

3.2.2 Researchers involved in the supervision and development of other researchers should be aware of their responsibilities and ensure that they have the necessary training, time and resources to carry out that role, and request support if required.

3.3   Training and mentoring

3.3.1 Researchers should undergo training in order to carry out their duties and to develop their knowledge and skills throughout their career, repeating training where necessary to ensure that skills are kept up-to-date. They should identify needs for training when they arise and report them to their manager or other appropriate person as identified by the University.

3.4   Research design

3.4.1 When designing research projects researchers should ensure that:

a) the proposed research addresses pertinent question(s) and is designed either to add to existing knowledge about the subject in question or to develop methods for research into it;

b) the design of the study is appropriate for the question(s) being asked and addresses the most important potential sources of bias;

c) the design and conduct of the study, including how data will be gathered, analysed and managed, are set out in detail in a pre-specified research plan or protocol;

d) all necessary skills and experience will be available to carry out the proposed research, in the proposed research team or through collaboration with specialists in relevant fields;

e) sufficient resources will be available to carry out the proposed research and that these resources meet all relevant standards; and

f) any issues relating to the above are resolved as far as possible prior to the start of the research.

3.4.2 Researchers should conduct a risk assessment of the planned study to determine:

a) whether there are any ethical issues and whether ethics review is required;

b) the potential for risks to the organisation, the research, or the health, safety and wellbeing of researchers and research participants; and

c) what legal requirements govern the research.

3.4.3 Where the design of a study has been approved by ethics, regulatory or peer review, researchers should ensure that any subsequent alterations to the design are subject to appropriate review to determine that they will not compromise the integrity of the research or any terms of consent previously given.

3.4.4 Researchers should try to anticipate any risks that the proposed research might produce results that could be misused for purposes that are illegal or harmful.

Researchers should report any risks to, and seek guidance from, the appropriate person(s) in their organisation and take action to minimise those risks.

3.4.5 Researchers should be prepared to make research designs available to peer reviewers and journal editors when submitting research reports for publication.

3.5   Collaborative working

3.5.1 Researchers should pay particular attention to projects which include participants from different countries or where work will be carried out in another country due to the additional legal and ethical requirements and other guidelines that may apply. See also sections 3.1.2, 3.7.2 and 3.8.2.

3.5.2 Researchers should be aware of the standards and procedures for the conduct of research followed by any organisations involved in collaborative research that they are undertaking. They should also be aware of any contractual requirements involving partner organisations, seeking guidance and assistance where necessary and reporting any concerns or irregularities to the appropriate person(s) as soon as they become aware of them.

3.5.3 Researchers should try to anticipate any issues that might arise as a result of working collaboratively and agree jointly in advance how they might be addressed, communicating any decisions to all members of the research team. In particular, agreement should be sought on the specific roles of the researchers involved in the project and on issues relating to intellectual property, publication, and the attribution of authorship, recognising that, subject to legal and ethical requirements, roles and contributions may change during the time span of the research.

3.6   Conflicts of interest

3.6.1 Researchers must recognise that conflicts of interest (i.e. personal or institutional considerations, including but not limited to financial matters) can inappropriately affect research. Conflicts of interest must be identified, declared and addressed in order to avoid poor practice in research or potential misconduct.

3.6.2 When addressing a conflict of interest, it must be decided whether it is of a type and severity that poses a risk of fatally compromising the validity or integrity of the research, in which case researchers should not proceed with the research, or whether it can be adequately addressed through declarations and/or special safeguards relating to the conduct and reporting of the research.

3.6.3 Researchers should comply with their organisation's policy for addressing conflicts of interest, as well as any external requirements relating to conflicts of interest, such as those of funding bodies. This should include declaring any potential or actual conflicts of interest relating to their research to: their manager or other appropriate person; any ethics committee which reviews their research; and when reporting their findings at meetings or in

publications. Conflicts of interest should be disclosed as soon as researchers become aware of them.

3.6.4 Researchers should agree to abide by any direction given by Liverpool John Moores University or any relevant ethics committee in relation to a conflict of interest.

3.7   Research involving human participants, human material or personal data

3.7.1 Researchers should make sure that any research involving human participants, human material or personal data complies with all legal and ethical requirements and other applicable guidelines. Appropriate care should be taken when research projects involve: vulnerable groups, such as the very old, children or those with mental illness; and covert studies or other forms of research which do not involve full disclosure to participants. The dignity, rights, safety and wellbeing of participants must be the primary consideration in any research study. Research should be initiated and continued only if the anticipated benefits justify the risks involved.

3.7.2 When conducting, or collaborating in, research in other countries, researchers based in the UK should comply with the legal and ethical requirements existing in the UK and in the countries where the research is conducted. Similarly, researchers based abroad who participate in UK hosted research projects should comply with the legal and ethical requirements existing in the UK as well as those of their own country.

3.7.3 Researchers should ensure the confidentiality and security of: personal data relating to human participants in research; and human material involved in research projects.

3.7.4 Researchers working with, for, or under the auspices of, any of the UK Departments of Health and/or the National Health Service (NHS) must adhere to all relevant guidelines, for example the Department of Health's Research Governance Framework for Health and Social Care and the guidance provided by the Health Research Authority. Researchers involved in clinical trials on medicinal products for human use should comply with the principles of Good Clinical (Research) Practice.

3.7.5 Researchers should submit research projects involving human participants, human material or personal data for review by all relevant ethics committees and abide by the outcome of those reviews. They should also ensure that such research projects have been approved by all applicable bodies, ethical, regulatory or otherwise.

3.7.6 Researchers on projects involving human subjects must satisfy themselves that participants are enabled, by the provision of adequate accurate information in an appropriate form through suitable procedures, to give informed consent, having particular regard to the needs and capacities of vulnerable groups, such as the very old, children and those with mental illness.

3.7.7 Researchers should inform research participants that data gathered during the course of research may be disseminated not only in a report but also in different forms for

academic or other subsequent publications and meetings, albeit not in an identifiable form, unless previously agreed to, and subject to limitations imposed by legislation or any applicable bodies, ethical, regulatory or otherwise.

3.7.8 Researchers who are members of a regulated profession must ensure that research involving human participants, human material or personal data complies with any standards set by the body regulating their profession.

3.7.9 Researchers have a duty to publish the findings of all clinical research involving human participants. In addition, it is government policy to promote public access to information about any research and research findings affecting health and social care, including the principle that trials should appear on public registers. In this context "trials" means all comparative studies of health interventions, not just ones conducted in a clinical setting.

3.7.10 If researchers consider that human participants in research are subject to unreasonable risk or harm, they must report their concerns to their manager, or other appropriate person, and, where required, to the appropriate regulatory authority. Similarly, concerns relating to the improper and/or unlicensed use or storage of human material, or the improper use or storage of personal data, should be reported.

3.8   Research involving animals

3.8.1 Researchers should make sure that research involving animals adheres to all legal and ethical requirements and other applicable guidelines. They should consider the opportunities for reduction, replacement and refinement of involving animals in research projects and should refer to the relevant guidance.

3.8.2 When conducting, or collaborating in, research in other countries, researchers based in the UK should comply with the legal and ethical requirements existing in the UK and in the countries where the research is conducted. Similarly, researchers based abroad who participate in UK hosted research projects should comply with the legal and ethical requirements existing in the UK as well as those of their own country.

3.8.3 Researchers should submit research projects involving animals for review by all relevant ethics committees and abide by the outcome of that review. They should also ensure that such research projects have been approved by all applicable bodies, ethical, regulatory or otherwise.

3.8.4 If researchers consider that animals involved in research are subject to unreasonable risk or harm, they must report their concerns to their manager or other appropriate person, and, where required, to the appropriate regulatory authority.

3.9   Health and safety

3.9.1 Researchers should ensure that all research carried out under their auspices, or for

which they are responsible, fulfils all requirements of health and safety legislation and good practice. They should bear in mind that certain types of research, for example social research in a conflict zone, can present particular issues of health and safety. They should ensure that all research which involves potentially hazardous or harmful material or which might cause harm to the environment complies with all legal requirements and other applicable guidelines.

3.9.2 Researchers should submit such research for all forms of appropriate review and abide by the outcome of that review.

3.10   Intellectual property

3.10.1 Researchers should ensure that any contracts or agreements relating to research include provision for ownership and use of intellectual property. Intellectual property includes, but is not limited to: research data and other findings of research; ideas, processes, software, hardware, apparatus and equipment; substances and materials; and artistic and literary works, including academic and scientific publications.

3.10.2 Researchers should not give prior disclosure of research or the findings of research when this might invalidate any commercial property rights that could result. Researchers should recognise, however, that the presumption should be that any intellectual property discovered or developed using public or charitable funds should be disseminated in order to have a beneficial effect on society at large. That presumption may be rebutted where there is an express restriction placed on any such dissemination. Any delay in publication and dissemination pending protection of intellectual property should be kept to a minimum.

3.10.3 Researchers should comply with any additional conditions relating to intellectual property required by funding bodies.

3.10.4 Researchers should try to anticipate any issues that might arise relating to intellectual property at the earliest opportunity and agree jointly in advance how they might be addressed, communicating any decisions to all members of the research team.

3.11   Finance

3.11.1 Researchers should ensure that the terms and conditions of any grant or contract related to the research are adhered to.

3.11.2 Researchers should comply with Liverpool John Moores University guidelines regarding the use and management of finances relating to research projects. They should cooperate with any monitoring and audit of finances relating to research projects and report any concerns or irregularities to the appropriate person(s) as soon as they become aware of them.

3.12 Collection and retention of data

3.12.1 Researchers should comply with all legal, ethical, funding body and organisational requirements for the collection, use and storage of data, especially personal data, where particular attention should be paid to the requirements of data protection legislation. They should also maintain confidentiality where undertakings have been made to third parties or to protect intellectual property rights. Researchers should ensure that research data relating to publications is available for discussion with other researchers, subject to any existing agreements on confidentiality.

3.12.2 Data should be kept intact for any legally specified period and otherwise for three years at least, subject to any legal, ethical or other requirements, from the end of the project. It should be kept in a form that would enable retrieval by a third party, subject to limitations imposed by legislation and general principles of confidentiality.

3.12.3 Researchers should comply with any subject specific requirements for the retention of data; for example, certain disciplines, such as health and biomedicine, may require research data to be retained for a considerably longer period.

3.12.4 If research data is to be deleted or destroyed, either because its agreed period of retention has expired or for legal or ethical reasons, it should be done so in accordance with all legal, ethical, research funder and organisational requirements and with particular concern for confidentiality and security.

3.12.5 Researchers should consider how data will be gathered, analysed and managed, and how and in what form relevant data will eventually be made available to others, at an early stage of the design of the project.

3.12.6 Researchers should collect data accurately, efficiently and according to the agreed design of the research project, and ensure that it is stored in a secure and accessible form.

3.13 Monitoring and audit

3.13.1 Researchers should ensure that research projects comply with any monitoring and audit requirements. Any researchers charged with carrying out such monitoring and audits should have sufficient training, resources and support to fulfil the requirements of the role.

3.13.2 Researchers should consider any requirements for monitoring and audit at an early stage in the design of a project.

3.13.4 Researchers should cooperate with the monitoring and audit of their research projects by applicable bodies and undertake such when required. They should cooperate with any outcomes of the monitoring and audit of their research projects. If they become aware of a need for monitoring and audit where it is not already scheduled, they should report that need to the appropriate person(s).

3.14 Peer review

3.14.1 Researchers should be aware that peer review is an important part of good practice in the publication and dissemination of research and research findings; the assessment of applications for research grants; and in the ethics review of research projects.

3.14.2 Researchers who carry out peer review should do so to the highest standards of thoroughness and objectivity.

3.14.3 Researchers should maintain confidentiality and not retain or copy any material under review without the express written permission of the organisation which requested the review. They should not make use of research designs or research findings from a paper under review without the express permission of the author(s) and should not allow others to do so. Researchers acting as peer reviewers must declare any relevant conflicts of interest.

3.14.4 While carrying out peer review, researchers may become aware of possible misconduct, such as plagiarism, fabrication or falsification, or have ethical concerns about the design or conduct of the research. In such cases they should inform, in confidence, an appropriate representative of the organisation which requested the review, such as the editor of the relevant journal or chair of the relevant grants or ethics committee.

3.15 Publication and authorship

3.15.1 Researchers should accept their duty to publish and disseminate research in a manner that reports the research and all the findings of the research accurately and without selection that could be misleading.

3.15.2 Researchers should address issues relating to publication and authorship, especially the roles of all collaborators and contributors, at an early stage of the design of a project, recognising that, subject to legal and ethical requirements, roles and contributions may change during the time span of the research. Decisions on publication and authorship should be agreed jointly and communicated to all members of the research team.

3.15.3 Authorship should be restricted to those contributors and collaborators who have made a significant intellectual or practical contribution to the work. No person who fulfils the criteria for authorship should be excluded from the submitted work. Authorship should not be allocated to honorary or "guest" authors (i.e. those that do not fulfil criteria of authorship). Researchers should be aware that anyone listed as an author of any work should be prepared to take public responsibility for that work and ensure its accuracy, and be able to identify their contribution to it.

3.15.4 Researchers should list the work of all contributors who do not meet the criteria for authorship in an acknowledgements section. All funders and sponsors of research should be clearly acknowledged and any competing interests listed.

3.15.5 Researchers must clearly acknowledge all sources used in their research and seek permission from any individuals if a significant amount of their work has been used

in the publication.

3.15.6 Researchers must adhere to any conditions set by funding or other bodies regarding the publication of their research and its findings in open access repositories within a set period.

3.15.7 Researchers should declare any potential or actual conflicts of interest in relation to their research when reporting their findings at meetings or in publications.

3.15.8 Researchers should be aware that submitting research reports to more than one potential publisher at any given time (i.e. duplicate submission) or publishing findings in more than one publication without disclosure and appropriate acknowledgement of any previous publications (i.e. duplicate publication) is unacceptable.

3.15.9 Researchers who are discouraged from publishing and disseminating their research or its findings, or subjected to attempts to influence the presentation or interpretation of findings inappropriately, should discuss this with the Director of Research & Innovation Services so that the matter can be resolved.

3.16   Misconduct in research

3.16.1 Researchers should know what constitutes misconduct in research and report any suspected misconduct through the Liverpool John Moores University 'Procedure for the Investigation of Misconduct in Research' as soon as they become aware of it. They should recognise that good practice in research includes reporting concerns about the conduct of research and should cooperate with any investigation of misconduct in research when requested. Researchers should work with the University to support those who raise concerns in good faith about the conduct of research and those who have been exonerated of suspected misconduct.

Section 4. Recommended Checklist for Researchers

Before conducting your research, and bearing in mind that subject to legal and ethical requirements, roles and contributions may change during the time span of the research:

1. Does the proposed research address pertinent question(s) i.e. what is the **significance*** of the research?

2. Is the proposed research designed either to add to existing knowledge about the subject in question or to develop methods for research into it? In essence, can you demonstrate the **originality*** of your research?

3. Is your research design appropriate for the question(s) being asked? Can you demonstrate the **rigour*** of your research?

4. Do you have, or will you have access to all necessary skills and resources to conduct the research? Details the Researcher Development Programme is available at http://www.ljmu.ac.uk/RGSO/training/index.htm

5. Have you conducted a risk assessment to determine:
    a. whether there are any ethical issues and whether ethics review is required http://www.ljmu.ac.uk/RGSO/93042.htm;
    b. the potential for risks to the organisation, the research, or the health, safety and well-being of researchers and research participants; and
    c. what legal requirements govern the research?

6. Will your research comply with all legal and ethical requirements and other applicable guidelines, including those from other organisations and/or countries if relevant?

7. Will your research comply with all requirements of legislation and good practice relating to health and safety?

8. Has your research undergone any necessary ethics review (see 5(a) above), especially if it involves animals, human participants, human material or personal data?

9. Will your research comply with any monitoring and audit requirements (particularly where research involves human tissue or where the University is the sponsor of research conducted with the NHS)?

10. Are you in compliance with any contracts and financial guidelines relating to the project?

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* Originality, significance and rigour are three component elements of the assessment criteria in the Research Excellence Framework (REF) http://www.ref.ac.uk/

11. Have you reached an agreement relating to intellectual property, publication and authorship?

12. Have you reached an agreement relating to collaborative working, if applicable?

13. Have you agreed the roles of researchers and responsibilities for management and supervision?

13. Have all conflicts of interest relating to your research been identified, declared and addressed?

14. Are you aware of the guidance from all applicable organisations on misconduct in research? http://www.ljmu.ac.uk/RGSO/99019.htm

When conducting your research:

1. Are you following the agreed research design for the project?

2. Have any changes to the agreed research design been reviewed and approved if applicable (including ethical approval)?

3. Are you following best practice for the collection, storage and management of data? http://www.ljmu.ac.uk/RGSO/125839.htm

4. Are agreed roles and responsibilities for management and supervision being fulfilled?

5. Is your research complying with any monitoring and audit requirements?

When finishing your research:

1. Will your research and its findings be reported accurately, honestly and within a reasonable time frame?

2. Will all contributions to the research be acknowledged?

3. Are agreements relating to intellectual property, publication and authorship being complied with?

4. Will research data be retained in a secure and accessible form and for the required duration?

5. Will your research comply with all legal, ethical and contractual requirements?