THE UNIVERSITY of EDINBURGH
School of GeoSciences

Research Ethics and Integrity
Self-Assessment Guidance Notes

These Guidance Notes should be used when completing the School of GeoSciences Research Ethics and Integrity Assessment Form. If you have identified your research as requiring a Full Research Ethics and Integrity Assessment (see below), or your research has been flagged as requiring a higher level of assessment, please use the Full Ethics and Research Ethics and Integrity Assessment Guidance Notes in conjunction with these Guidance Notes.

Please note that the Committee understands research ethics to be a situated concept; there will occasionally be exceptions to the rule and there will be times when it is impossible to predict how the research will progress. In order for us to work with you within the constraints of these somewhat necessarily 'universal' guidelines (given the breadth of research interest in the School) it is important that you provide as much contextual detail as possible.

As a Committee we are happy to provide additional guidance and advice where we can. If you have a question please contact the Research Ethics and Integrity Secretary and one of the Committee will get back to you as soon as possible.

A Full Research Ethics and Integrity Assessment is required when the research project involves 'vulnerable' human subjects (e.g. children, very elderly people, people who may not be fluent in English, people who may have cognitive disabilities, and – especially where the research is to be undertaken in a developing country - people in very limited economic circumstances), invasive procedures or addressing sensitive issues (e.g. video-taping without informed consent, questions about sexuality or about criminal behaviour), and/or biophysical research which requires extraordinary permission from landowners, involves significant disturbance to vulnerable species or habitats, sampling rare/endangered or harmful taxa/species, and/or transporting samples/specimens between countries or significant 'boundaries'.

You do not have to submit your answers to the individual questions raised in this guidance but you are encouraged to address any pertinent issues in the Additional Statement Box at the end of the Ethics Assessment Form.

If you are an Undergraduate or MSc student completing a 'Full' assessment we **strongly recommend** that you also seek guidance and support from your supervisor and append all relevant documentation as requested to minimise the need for a resubmission of your Form.

This guidance has been divided into SEVEN parts to help steer you to the correct reference material for your particular research needs and to identify questions you may need to address before, during and after your research.

BOX 1: GUIDANCE REGARDING LEGAL REQUIREMENTS, MORAL RESPONSIBILITIES AND CODES OF CONDUCT

A. Conflicts of Interest

Conflicts of interest (financial, non-financial or both) can compromise a research project, even if it does not violate legal obligations. Information on how to recognise and deal with conflicts of interest can be found on the UoE website and at UK RIO.

A key issue to consider is:

- Will research objectivity or independence be compromised in return for financial or non-financial benefits to the researcher, a relative or friend?

The responsibility for avoiding a conflict of interest lies with the individual, but potential conflicts of interest should always be disclosed. Failure to disclose a conflict of interest or to continue with the research before a conflict has been resolved may result in disciplinary action and in serious cases could result in dismissal.

B. Data Protection

General Data Protection Regulation (GDPR)

Data protection legislation will change on 25 May 2018 when the General Data Protection Regulation (GDPR) comes into force replacing the existing Data Protection Act 1998. Whenever we use personal data we must have a legal basis for doing so. In the case of surveys the legal basis is 'processing in the public interest'. Please detail below your public interest case for conducting this survey. Please also ensure that a privacy notice detailing how the data will be gathered, stored and reported is included at the start of your survey.

Guidance on this can be found here:

Necessary for public tasks:
https://www.ed.ac.uk/records-management/guidance/checklist/legal-basis/public-tasks

Privacy notices:
https://www.ed.ac.uk/records-management/guidance/checklist/privacy-notice

Surveys will not be considered for approval by the GeoSciences Ethics & Integrity Committee without a public interest case or a privacy notice.

General information on the Data Protection Act can be found on the UK Government website. More specific UoE guidance on records management can be found here and here, and via JISC Infonet

Note that different funding bodies may have different requirements (e.g. the EPSRC requires that all research-related data be securely stored and accessible for at least 10 years). The UoE has committed 0.5TB (500GB) of high quality storage with guaranteed backup and resilience to every research-active member of staff. You can store your data on the UoE DataStore.

If you are collecting personal data in another country and bringing it back to the UK, the data protection considerations are the same. For example, you must be open and up front with individuals when letting them know what you will do with the information you have collected about them, including letting them know where and how it will be stored in the UK. You will also need to take appropriate security

measures – these may be different in different countries.

If you are transferring personal data outside the European Union some prior thought and preparation is required. Both the UoE and the ICO offer guidance on data transfer.

C. Feedback
There is often a moral obligation to provide feedback to research participants, either respondents in interviews or organisations and agencies that supported the research in some way (e.g. by granting permission to use a field site or data). Whenever possible, it is good practice to provide feedback to research participants in an appropriate format.

D. Research integrity
The key to research integrity is attention to the day-to-day practices in the lab, the field, or any context in which researchers engage in inquiry, analysis, and dissemination of findings. A useful distinction can be made between academic misconduct and misbehaviour. Misconduct (e.g. plagiarism, falsification, fabrication) may be actionable legally whereas misbehaviour relates to the day-to-day practices of research (e.g. dropping observations or data points from analyses, overlooking others' use of flawed data or questionable interpretation of data, inadequate record keeping, inappropriate attribution of authorship credit, and other 'questionable research practices').

The University of Edinburgh has now formally adopted the UK Research Integrity Office's Code of Practice for Research (2009).

Other useful sources of information on research integrity include:
Research Councils UK (2013) Policy and guidelines on governance of good research conduct
Universities UK (2012) Concordat to support research integrity
University of Oxford 'Integrity and ethical practice in the conduct of research' and Research Integrity Podcasts

Guidance on research misconduct and the potential misuse of research (e.g. for military purposes, dual-use research) is provided by the EU Commission, the Resources for Research Ethics Education website, and Ethics CORE.

E. Codes of Professional Conduct
Links to various established Codes of Professional Conduct and ethical guidelines provided by professional bodies which may be relevant to researchers based in the School of GeoSciences are provided below. Note that the most relevant code of practice from which to seek guidance will be dictated, in part, by the subject and scope of the research being undertaken.

American Geophysical Union
Association of Internet Researchers (2012) Ethical Recommendations
Biotechnology and Biological Sciences Research Council
British Antarctic Survey (2007) Ethics Policy
British Educational Research Association
British Sociological Association (2004) Ethical Guidelines
Department for Innovation, Universities and Skills (2007) Universal Ethical Code for Scientists
Mental Capacity Act (2005)/Adults with Incapacity (Scotland) Act
Economic and Social Research Council (2015) Framework for Research Ethics
EdQual (2008) Research Ethics in International Collaborative and Participatory Research
ESRC National Centre for Research Methods, 'Visual Ethics: Ethical Issues in Visual Research' (2008)
European Science Foundation, 'The European Code of Conduct for Research Integrity' (2011)
European Textbook on Ethics in Research
Forest Research Social and Economic Research Group (2010) Research Ethics

Geological Field Work Code
Market Research Society (2014) Code of Conduct
Natural Environment Research Council (2005) Ethics Policy
Oral History Society (2003) Ethics
Research Councils UK (2015) Governance of Good Research Conduct
Royal Geographical Society with IBG (2006) Research Ethics and a Code of Practice
Social Policy Association Guidelines on Research Ethics
Social Research Association (2003) Ethical Guidelines
UCL Research Ethics Committee Guidance Note 1: Research Involving Children
UKRIO Code of Practice for Research

Please note that we are always seeking to update this list. If you know of a Code of Practice or set of ethical guidelines which might be informative for colleagues within the School of GeoSciences please email the Research Ethics and Integrity Secretary with your suggestion at ethics.geos@ed.ac.uk

F. Research in developing countries
If undertaking work outside the UK (and, in particular, in a developing country), it is worth considering the benefit(s) that might be derived from having the research fully or partially ethically reviewed in the host country as well. Host Research Ethics Committees (RECs) may be better placed to comment on issues concerning research priorities, consent, inducements and the protection of research participants/proposed field sites. That said, properly functioning RECs are often absent, ineffective or under-resourced in developing countries.

The Nuffield Council on Bioethics, the Parliamentary Office of Science and Technology (2008), and The Welcome Trust all offer advice on the ethics of conducting research in developing countries.

Further food for thought is offered in Lunn, J. (ed) (2014) *Fieldwork in the Global South: Ethical challenges and dilemmas*. Abingdon & New York: Routledge.

Please note that we are always seeking to update our list of non-UK RECs which do not charge for their services. If you know of a non-UK REC which might be relevant to the work of colleagues within the School of GeoSciences please email the Ethics Secretary with your suggestion at ethics.geos@ed.ac.uk

G. Prevent Duty
The University is required to comply with the duty to prevent people being drawn into terrorism ("the Prevent duty"). Government guidance for HEI's on implementation of this duty includes the statement that: "We (the UK government) would expect to see clear policies and procedures for students and staff working on sensitive or extremism-related research". As a result of this the Research Policy Group has requested that all research ethics questionnaires in use across the University, covering both student and staff research activities, are amended to include a question on research concerning groups which may be construed as terrorist or extremist?

If you answer Yes to this question you must complete and submit a Prevent Duty Form and submit it alongside your ethics form.

BOX 2: GUIDANCE REGARDING THE RIGHTS OF HUMAN SUBJECTS

Research involving human subjects or that might involve the identification of individuals must ensure that subjects know their rights in participation and their right to maintain confidentiality. It is also important that the subjects are capable of providing informed consent.

The UK Data Archive offers lots of useful advice on data management.

A. Confidentiality

As a researcher, you should offer research subjects the right to maintain their confidentiality, and if appropriate, that of the organisation or institution they may represent. Issues to consider include:

- Will promises to not use names be sufficient to protect confidentiality?
- Will other people beyond the researcher have access to the data?
- Will feedback, and the opportunity to edit responses, be given to respondents?
- Will steps be taken to ensure that individuals are not spatially identifiable?
- Will the project involve the transfer of personal data overseas/between countries? If yes, how will confidentiality be maintained? If yes, does the receiving country have adequate data protection regulations, or has appropriate contact been made with the recipient of the data which specifies the data protection requirements that must be upheld?
- If the research will include the use of material sourced from internet communities (e.g. forums, newsgroups) will steps be taken to ensure participant confidentiality beyond the removal of personal information? NB: powerful search engines can index newsgroups so that the original message, including the email address of the sender, could be retrieved by anybody using the direct quote as a query. You will also need to consider if the explicit consent of the participant to be quoted verbatim will be obtained during data collection and if they will be made aware that their email address may be identifiable?
- Will participants be advised that research data given in confidence does not enjoy legal privilege and may be liable to subpoena by a court?
- Does the funding body require the archiving of data? Will the participants be informed of this when giving consent?
- Will the data collected in this research be made available for secondary use? If yes, what arrangements are in place to ensure confidentiality?

Additional guidance can be found in The University of Sheffield's Specialist Research Ethics Guidance Paper on 'Principles of anonymity, confidentiality and data protection' and The Welcome Trust's policy position on research involving human participants.

The University of Lancaster, University of Southern California Office for the Protection of Research Subjects, The British Psychological Society (social media), and the Collaborative Online Social Media Observatory all provide guidance on researching via the internet and/or social media.

B. Consent

Comprehensive guidance on consent can be found in the ESRC Framework for Research Ethics. Issues to consider include:

- Is the research subject capable of understanding what is involved in the study?
- Is sufficient detail about the study provided and in an appropriate format? Have you got a Plain Language Statement (PLS) that explains to potential participants what your research is about? NB: In some contexts the provision of a written PLS will be inappropriate. Nonetheless, a statement such as this should form the basis of any verbal communication with participants about your research objectives. In some contexts it may be appropriate to supplement verbal communication with an illustrated/visual equivalent of the PLS.
- Will research subjects understand the risks involved?
- Will research subjects understand that they can withdraw from the study at any time?
- Will research subjects know who to contact in the event that they are unhappy with the conduct of the study or the researchers?
- Are research participants truly free to grant consent related to the research (e.g. for an interview)?
- Will written consent be sought from participants? NB: In some contexts written consent may not be obtainable or meaningful. If written consent will not be obtained for some or all participants

please explain why circumstances make obtaining written consent problematic or inappropriate.

- Will verbal consent be sought from participants? Consider how this will be recorded and if you will need a witness.
- Does the researcher hold a position of power or authority over the research subjects?
- Does the university hold a position of power or authority over the research subjects?
- Will the research require the collection of personal information (e.g. from educational establishments, employers, other agencies) about individuals without their direct consent? If so, consider what information will be sought and why written/verbal consent for access to this information will not be obtained from the participants themselves.
- If contact details will be obtained from private sources, do you have a relevant approval letter?
- If recruitment will be conducted by a third party (e.g. employer, doctor) do you have a letter requesting their assistance, and/or a letter confirming their willingness to assist?
- Does the research require administrative consent? NB: Administrative consent may be deemed sufficient: a) for studies where the data collection involves aggregated (not individual) statistical information and where the collection of data presents no invasion of privacy and/or no potential social or emotional risks; b) for studies which focus on the development and evaluation of guidelines or programs rather than the study, observation and evaluation of individuals.
- If applicable, will administrative consent be sought in lieu of participants' consent? If the answer is no, why is administrative consent not necessary?
- Will the data collected in this research be made available for secondary use? If yes, what arrangements are in place to ensure the consent agreements?

Plain language statements

If you have a PLS (or equivalent) it should include (as appropriate): institution and research unit identification; the project title; details of the researcher(s) and how to contact them; the project requirements (e.g. involvement in interviews, completion of a questionnaire, audio/film recording), the estimated time of commitment, and any risks involved; the source of funding; a note that research ethics and integrity have been considered; advice about parameters of anonymity and confidentiality; advice on their rights of participation; information on measures that will be taken to protect confidentiality of data (and any limitations to this); information regarding the destruction or non-destruction of the research data; advice that if participants have any concerns about the conduct of the research they can contact the Chair of the School Ethics and Research Integrity Committee; and, any other relevant information. A range of sample PLSs are available on the School Research Ethics and Integrity webpages.

Written consent forms

If you will be using written consent form(s) they should include (as appropriate): the institution and research unit identification; the project title; details of the researcher(s) and how to contact them; confirmation that the project is for research purposes; confirmation that involvement is voluntary and that participants are free to withdraw at any time; confirmation of the particular requirements of participants; advice on legal limitations of data confidentiality; information on the potential uses of the research; and, any other relevant information. A range of sample consent forms are available on the School Research Ethics and Integrity webpages.

Covert research and deception

In a very few instances it may be necessary to withhold information about the true objectives of the research from the people participating in it in order to ensure the viability and validity of the research. Wherever possible such research should be avoided, however, if this type of research is judged to be necessary, researchers should exercise particular caution and be able to fulfil the following requirements:

1. Demonstrate unequivocally that alternative procedures to avoid withholding information or deliberate deception are not available, or, if available, are not feasible for the particular research

in question; and
2. Explain in detail why withholding information, or an element of concealment or deception, is necessary for the viability and validity of the research.

Covert research (e.g. deliberate concealment of the research) should only be considered in exceptional circumstances. If you choose to undertake covert research you must be able to:

1. Provide a convincing case for the research;
2. Demonstrate unequivocally that the research in question cannot be done using any other, more transparent approaches;
3. Explain in detail what steps will be taken to protect, and to monitor the safety and well-being of, the researcher(s); and
4. Explain in detail what steps will be taken to protect, and to monitor the welfare, dignity and rights of, the participant(s).

In some cases retrospective consent may help to ensure that the research is, and is seen to be, properly ethically managed. This involves informing the participants about the nature of the deception once the research is complete. In such cases, the researchers should be prepared for people to refuse to consent.

Participatory Action Research
Additional guidance for those proposing to undertake Participatory Action Research can be found in The University of Sheffield's Specialist Research Ethics Guidance Paper on 'Ethical consideration in participatory research/participatory action research (PAR)'.

Internet research
There are a number of web-based resources addressing the ethics of online research methods, e.g. ReStore Online Research Methods, Digital Methods Initiative.

C. Young people
Please consult the Full Research Ethics and Integrity Assessment Guidance Notes. Child Ethics and The Research Ethics Guidebooks are good sources of information for researchers wishing to work with children.

D. Abuse and criminal activity
In general, researchers (as citizens or legal residents of the United Kingdom) have a responsibility to report any actions or planned actions, discovered during the course of research, which they believe are likely to result in serious and immediate harm to others to the relevant authorities.

Researchers have responsibilities to participants, too. Participation in research should not place people in greater hazard than they would otherwise be. Researchers should, if they anticipate that they may become aware of illegality, tell actual and potential research participants about their responsibilities and about the nature and limits of whatever confidentiality they feel they can offer. This should be part of negotiations about consent.

There is no general requirement in law to report a crime in the UK though there is frequently a moral responsibility. When researchers become aware of the possibility of criminal activities or abuse, we recommend that they notify the relevant authorities and inform the participants of their plan to do so. Where, after careful consideration of all the circumstances, it is determined that the better course of action is likely to be not to report crimes (e.g. for reasons to do with the personal safety of anyone involved in the research) interviewees do not need to be warned of the possibility of a report. A case should be made to this effect in the ethics form. The law in other countries may differ and you should ensure that you are operating within the relevant legal framework.

Issues to consider include:

- Is it likely that you will observe illegal activities in the course of this particular research project? If so, is there a way to design the project to avoid this?
- What will you do if you uncover or a participant reveals that criminal activity has taken, or is taking, place? Are you aware of your legal obligations?
- Is it possible that this research will lead to the disclosure of information about child abuse or neglect? What is the likelihood of such disclosure and what is your proposed response to this? If there is a real risk of such disclosure triggering an obligation to make a report to the relevant authority, a warning to this effect must be included in the information and consent documents.
- How might informants be briefed to allow their informed consent in the light of the possibility of observing illegal activity?
- What will you do if you are approached by the police in relation to some work you have undertaken or concerning a participant?
- Have you considered the appropriateness of providing information about support services (e.g. leaflets for counselling or self-help groups) to participants who may reveal they are distressed (either as a result of the research or independently)?
- Do you need to debrief your participants?
- Do you need to make contact with a professional to whom you can seek advice/refer participants on to?

The University of Sheffield, University of Brighton, and The Research Ethics Guidebook all offer advice and guidance on research which may uncover illegal activity.

E. Data protection

The Data Protection Act (1998) and the UoE Data Protection procedures apply to all research. For research involving human subjects, the key provisions are:

- Individuals have the right to see any personal information you hold about them.
- You must tell people what you are doing with information about them including whom you are disclosing it to.
- You must use appropriate security measures to protect personal data.
- Do not transfer personal information outside the European Economic Area, including publishing personal information on the internet, without safeguards.
- You must not keep personal data for longer than is necessary unless the funding body specifically requires it.
- If relevant, how will the data be disposed of?

Further guidance on data protection and data transfer can be found in Box 1 Guidance for legal, moral responsibilities and Codes of Conduct.

BOX 3: GUIDANCE REGARDING HARM, DISCOMFORT OR STRESS FOR HUMAN SUBJECTS

As researchers, we have obligations to minimise the stress and harm that may accompany our research.

A. Psychological harm or stress

Issues to consider include:

- Could the research induce any psychological stress or discomfort? If so, what is the nature of the risk and what measures will be taken to deal with such problems?
- Will the research address sensitive issues? If so, what steps will be taken to ameliorate distress?
- Will the researchers approach research subjects with sensitivity to cultural differences?
- Will distressful questions be asked if they are only incidental to the research?

B. Physical harm or discomfort
Issues to consider include:

- If the research will address sensitive issues what steps will be taken to mitigate any threat of physical harm or discomfort?
- Will the research involve foreseeable physical discomfort or harm? What steps will be taken to minimize or ameliorate these effects?
- Does the research require any physically invasive or potentially physically harmful procedures? If so, what procedures will be put in place to deal with potential problems?
- Is the field site in a hazardous area (e.g. MOD range, road and railway cutting, cave, mine, quarry, previous war zone, etc.) and are permissions required?

C. Violation of cultural or social norms/practices
Researchers by their very presence can often disrupt cultural and social norms/practices. Disruption can be positive or negative; however, it is important to be aware of, and sensitive to, the potential for such disruption, particularly when doing research outside of the UK. Issues to consider include:

- Will the researchers approach the community or area in which research is undertaken with sensitivity to cultural differences? What steps will be taken to minimise the effects of disruption (if applicable)?
- What steps are required to gain permissions for access to field site(s)?
- What are the rules that govern the field site(s)?

D. Conflict or discomfort for humans or non-humans
Issues to consider include:

- Is there any purpose to which the research findings may be put that could adversely affect individual participants? What are the potential risks for participants of use of this data? What steps will be taken to protect participants?
- Could the research adversely affect members of particular groups of people? What might these adverse effects be and what protection will be put in place against them?
- Could this research adversely affect participants in any other way? How and what procedures will be put in place to deal with such problems?
- What remedies or courses of action will be available to those who feel harmed or impacted upon by the research?

You may wish to consider debriefing participants at the conclusion of the study.

Guidance on assessing risk can be found in the ESRC Framework for Research Ethics.
Other useful sources of information include the Natural Environment Research Council Health and Safety Policy, the British Mountaineering Council (for advice on tropical walking, winter mountaineering, avalanche awareness, and dealing with altitude), the Health and Safety Executive, and the Suzy Lamplugh Trust (for advice on personal safety, lone working).

BOX 4: GUIDANCE FOR EFFECTS ON THE ENVIRONMENT

A. Environmentally sensitive areas
To determine if your proposed field area is protected contact the appropriate authorities. In Britain these include:

Joint Nature Conservation Committee (JNCC)
Scottish Natural Heritage/+44 (0)1463 725000
Natural England/+44 (0)845 600 3078
Countryside Council for Wales - Cyngor Cefn Cymru/+44 (0)845 1306 62299
Northern Ireland Environment Agency /+44 (0)845 302 0008

When planning research outside the UK, researchers will have to refer to international guidelines or conventions, European Directives, national laws or guidelines, guidelines produced by the funding bodies, institutional guidelines, local laws, and recommendations from advisory bodies and/or local stakeholders. Guidance on European and other international legislation relating to environmental protection is provided by the JNCC.

B. Permission to access site(s)

If the area is a Site of Special Scientific Interest (SSSI) or otherwise protected the appropriate agency will advise you as to the procedures required for obtaining access and field work permits. SSSI's are protected areas due to their importance regarding the flora, fauna, and/or geology of the area. Ramsar sites are areas designated under the Convention of Wetlands of International Importance. You should also contact the local council offices for the proposed field area to find out if there are any local bylaws, etc.

In England, Wales and Northern Ireland, permission from the landowner must be obtained. In Scotland, although there are free rights of access to the public (see http://www.outdooraccess-scotland.com), you should always contact the local farmer and/or landowner before carrying out any geological fieldwork or other research-related work on the land. You must always obey the Countryside Code (England, Scotland).

If the research is to take place outside the UK, researchers will have to refer to international laws, European Directives, national laws or guidelines, guidelines produced by the funding bodies, institutional guidelines, local laws, and recommendations from advisory bodies and/or local stakeholders. If possible, check local laws with collaborators from the country familiar with the legislation requirements. Note that you may also need to obtain prior informed consent from the indigenous or local community as well as the relevant national/local authority.

Issues to consider include:

- What steps are required to gain permissions for access to field site(s)?
- Have you determined whether prior informed consent to use the field site(s) needs to be sought from the relevant authorities (e.g. government, national cooperation partner)? NB: Informed consent is necessarily sometimes an iterative, progressive process, which benefits significantly from collaboration with local intermediaries and support organisations.
- If prior informed consent is required, does the request include (as applicable): information about the primary investigator and their affiliation; information about local partners and their affiliation(s) (if applicable); the project structure and organisation; confidentiality policies; comprehensive information on the source and nature of the resources to which access is sought; the timing and duration of the research activity; exact geographic data on the area in which the research is to take place; the purpose and objectives of the research, type of research activity; the potential utilisation of research findings; definition of the research benefits derived from the purely scientific use of the resources will be shared; and, a clear and agreed designation of the beneficiaries under any benefit-sharing agreement?
- What are the rules that govern the field site(s)?
- Will the relevant authorities and/or stakeholders receive any financial or other material benefits for providing access to the field site(s)? What benefits will be offered and why, will it be appropriate to the local context, and how will you avoid it becoming an inappropriate inducement to grant access that would not otherwise be considered?
- Will the data collected in this research be made available for secondary use? If yes, what arrangements are in place to ensure the consent agreements?

Please ensure that the person or people you contact are truly free to grant consent (e.g. for granting access to property).

C. Abuse or criminal activity
In general, researchers (as citizens or legal residents of the United Kingdom) have a responsibility to report any actions or planned actions, discovered during the course of research, which they believe are likely to result in serious and immediate harm to the environment to the relevant authorities. Researchers should, if they anticipate that they may become aware of illegality, tell the relevant individuals about their responsibilities and about the nature and limits of whatever confidentiality they feel they can offer.

There are specific legal requirements when researchers become aware of the possibility of criminal activities or abuse; these are always important to respect, but are particularly important when the research involves vulnerable properties.

Issues to consider include:

- What will you do if you uncover or a fellow researcher or landowner/manager reveals that criminal activity has taken, or is taking, place? Are you aware of your legal obligations?
- What will you do if you are approached by the police in relation to some work you have undertaken or concerning a particular site/location?

The University of Sheffield offers advice on research involving criminal activities.

D. Sample collection
Issues to consider include:

- Are the proposed concepts, methods and techniques of research the most appropriate approach to investigate the region(s) in which the field site(s) is/are located?
- Will sample/specimen collection be kept to a minimum? What steps will be taken to ensure this?

The Scottish Geodiversity Forum offers guidance on ethical rock collection.

E. Disruption
Issues to consider include:

- If the field work is to be carried out on agricultural or other farm land, could the work cause any distress or harm to crops or livestock or in any way interfere with the work of the farmer or land owner? What steps will you take to discuss this with the farmer and/or land owner?
- Have you considered noise or light pollution? If relevant, what steps will be taken to mitigate this?
- Are there any sensitive, rare or endangered flora/fauna in the area (e.g. birdlife, wildlife, plants)? If so, how will you minimise the impact of your work?
- Will steps be taken to alert the relevant authorities about any impending threat to the field site area(s) (e.g. depletion of plant populations, erosion) and to make recommendations for remedial action?
- Will the disturbance caused to local residents/wildlife be kept to a minimum? What steps will be taken to ensure this.
- Will the research coincide with the hunting season?

The US Online Ethics Centre for Engineering and Science offers useful advice and case study examples for scientists.

Note that you may need to complete Box 2 Rights of human subjects if your work requires extensive interaction with land users or other people in the course of your research.

BOX 5: GUIDANCE FOR INSTITUTIONAL/AGENCY CONSENT

A. Permissions

Issues to consider when undertaking research using archives or data repositories include:

- Is it clear who owns the dataset and who has Intellectual Property Rights to it?
- Are there any charges for use or for reproduction of the data?
- Are issues on data handling and consent for use of the data clearly spelled out?
- Is there a requirement to complete and return a signed copy of the terms and conditions/terms of supply/license agreement?
- What are the restrictions on use and further dissemination of the data?

B. Terms of supply

Issues to consider when using data obtained from another researcher, agency, archive, or other source include:

- What are the guidelines concerning acknowledgement for access and use of the data in any subsequent publications? Does the data policy include a standard text to be used when acknowledging the data archiver? Is there also a requirement to acknowledge the original data provider?
- Is there a requirement on you to subsequently report to the data archiver any publications or conference presentations you make, which utilise the data provided?

C. Data Handling

Issues to consider include:

- Will (and should) the privacy of the individuals who created, or are the subjects of, the archival material be respected?
- Will the process of data collection be fully accountable? Do you accept responsibility for ensuring that good records are made and kept?
- Does the research adhere to ethical and legal obligations in relation to the accurate capture and storage of the data in the record, its 'stewardship' as property, its preservation as an authentic record over time, and to the protection of personal data from inappropriate disclosure?
- If the archival material is considered 'sensitive' have the risks associated with disclosing the identity of individuals been fully evaluated?
- Will your research abide by the rules of the institution within which the archival material is kept?
- Will all possible steps be taken to minimise physical impacts on original material/artefacts?
- Does the dataset contain 'personal data' that may be subject to the Data Protection Act 1998? Is the dataset registered with the Data Protection Registrar?
- What is the obligation on you after you have finished using the dataset for your research (e.g. to destroy your copy of the data)?

You must refer to any data policy, terms of supply or terms and conditions that pertain to the datasets being requested or accessed online. Remember that data held in a repository may have been collected and owned by a third party not associated with the data provider and that the third party may have specified certain rights and obligations on access to and dissemination of the data.

JISC and the UoE both provide guidance on records/data management.

Timescapes (2012) offers useful guidance on 'The Ethics of Researching Lives Qualitatively Through Time' (2012).

BOX 6: COLLABORATIVE WORKING

Collaborative working has many benefits, particularly if one of the partners is based in the country in which the research is to take place. It is important, however, to have specific contractual agreements and an understanding of everyone's role(s) and responsibilities before the research commences.

A. Formal agreement with academic partner(s)

Issues to consider include:

- Are you aware of the power differentials that may exist between the UoE the partner institution?
- Have all parties agreed on the nature and degree of collaboration?
- What steps will be taken to clarify the roles, rights, obligations of team members in relation to matters such as the division of labour, responsibilities, access to and rights in data and field notes, publication, co-authorship, professional liability, etc? Has this been recorded in writing?
- Will all partners be fully informed about where financial and other resources come from, how their use is planned, and what they have in fact been used for?
- Has provision been made on both organisational and technical levels for all the partners to have sufficient regular contact with each other?
- Will the partners meet regularly to review ongoing work and plan future activities?
- Does the proposed research give due consideration to the social, cultural, political, economic, ecological and technical needs and situation of the partners?
- If the partners are based in a developing country, have you thought about the long-term sustainability and implications of the research once the funding ends?

See the Realities Toolkit #06 for advice on working in a research team and the Realities Toolkit #11 for advice on leading and working on mixed methods projects.

B. Formal agreement with non-academic partners

Please refer to the guidance provided under the point above, however, an additional point to consider is:

- How might collaborating with an NGO or other non-academic organisation (by this we mean not part of a University) impact positively or negatively upon the research?

Additional guidance for those proposing to undertake Participatory Action Research can be found in The University of Sheffield's Specialist Research Ethics Guidance Paper on 'Ethical consideration in participatory research/participatory action research (PAR)'.

The National Co-ordinating Centre for Public Engagement offer useful advice on what to consider when undertaking community based participatory research.

C. Local field assistants

Careful selection and management of field assistants (including guides and translators) is vital. Issues to consider include:

- How will local field assistants be recruited? Will the procedure for employing local field assistants be transparent and non-discriminatory?
- Will adequate training be provided to local field assistants to enable them to do their job effectively and responsibly?
- What steps will be taken to ensure a sound transactional relationship is established with the local field assistant(s)? What will the boundaries of this relationship be?
- Have you agreed the responsibilities for the management and supervision of local field assistants?

D. Ethical and research integrity standards

Issues to consider include:

- Will relevant Codes of Conduct and ethical guidelines be communicated to all the research partners (including local field assistants and/or translators) in a manner that is understood by

all?

- Have the partners/individuals involved in implementing the research received appropriate research ethics and integrity training? If not, how will you mitigate this?

E. Intellectual property rights

Note that 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. Issues to consider include:

- Will Intellectual Property Rights (IPR) on data and results be shared fairly among the academic partners (in accordance with their overall contributions)?
- Will all members of the research team be invited to contribute to the writing up and publication of the research findings?
- Will all contributions (including that of local field assistants and/or translators) to the research be acknowledged?
- Does the funding body (or bodies) claim proprietary rights to intellectual property or to data collected through the research?

Further information on IPR is provided by the UoE here and here (on exploitation of IP), JISC, the ESRC, Ready to Research (specifically aimed at PhD students), Digital Scholarship.

The Committee of Publication Ethics offer advice on 'How to handle authorship disputes: a guide for new researchers'.

BOX 7: DISSEMINATION AND BENEIFT SHARING

The timely dissemination of research is usually expected by funding bodies; however, there are a number of issues to consider when disseminating your research (particularly if working collaboratively).

A. Accurate representation of the data

Interesting papers on this issue include: Martinson *et al* (2005) "Scientists behaving badly" and Fanelli (2009) How Many Scientists Fabricate and Falsify Research? A Systematic Review and Meta-Analysis of Survey Data.

UKRIO offer guidance for researchers on retractions in academic journals.

B. Depositing research findings and publications

Issues to consider include:

- Will duplicate sets of all samples/specimens collected, and records of any pertinent information, be deposited in the country in which the research took place and/or with other agreed curators?
- If the research findings, associated publications, and/or data are to be made available where the research took place will they need to be translated into the national and/or local language(s)?
- What might the impact of total or partial disclosure of raw or processed data, or the revelation of their participation, be on research participants, collaborators and members of the research team?

Note that different funding bodies may have different requirements (e.g. the EPSRC requires that an online record be created within 12 months of the data being generated that describes the research data and how to access it). The UoE repository is PURE and is used to record metadata. Published research papers based on research funded by the EPSRC should include a short statement describing how and on what terms any supporting research data may be accessed.

C. Disseminating research findings to participants/landowners

Issues to consider include:

- Have plans been made for the dissemination of results to the study participants and local people? What format(s) will this take (e.g. debrief, posters, radio broadcasts, leaflets)?
- What might the impact of total or partial disclosure of the processed data, or the revelation of their participation, be on research participants and collaborators?

D. Benefit sharing (partners)

Potential benefits of research beyond academic outputs might include access to scientific results, the availability or sharing of the infrastructure required for research activities, the formation of research networks, and continuing education. Issues to consider include:

- Will the proposed research activity contribute to increasing the research capacity of all the partners? If yes how?
- If working with partners in a developing country, are measures foreseen which will strengthen the partner institutions after the completion of the project?
- Have you come to an agreement as to what benefit sharing means, what it should consist of, and how it should be implemented?

Further information on benefits sharing is provided by
The Convention on Biological Diversity
The International Treaty on Plant Genetic Resources for Food and Agriculture
The Swiss Academy of Science
The World Intellectual Property Organisation Database of Biodiversity-Related Access and Benefit Sharing Agreements

INASP provides information on improving access to, the production and use of research information and knowledge when the research involves a global network of partners or collaboration.

E. Benefit sharing (non-academic partners, participants, local communities)

Issues to consider include:

- What benefits, if any, will the non-academic partners, participants or local communities receive and why?
- Will participants receive any financial or other material benefits because of participation? Consider what benefits will be offered to participants and why, if it will be appropriate to the local context, and how will you avoid it becoming an inappropriate inducement to accept risks that would not otherwise be considered?

END OF THE ETHICS SELF ASSESSMENT GUIDANCE