Dundalk Institute
of Technology

Good Research Practice Guidelines

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Good Research Practice Guidelines

Dundalk Institute of Technology is committed to achieving excellence in research and scholarship. The pursuit of excellent research and the realisation of our responsibilities to participants in research, research users and the wider community require the maintenance of the highest standards of integrity, rigour and ethics in all research carried out at, and in partnership with, the Institute.

To maintain the high standards of research practice at DkIT, the Institute will uphold the commitments outlined in the National Policy Statement on Ensuring Research Integrity in Ireland. The information below sets out the principles to which all research and scholarship at DkIT should adhere and provides guidance on where to seek further advice on specific research integrity issues.

DkIT expects all researchers, be they staff, students or visitors to the Institute, to abide by National, European and International Standards of Research Integrity[1,2,3,4] and responsible research and innovation[5].

This comprises:

Honesty in all aspects of research, including:
- Presentation of research goals, intentions and findings.
- Reporting on research methods and procedures.
- Gathering data.
- Using and acknowledging the work of other researchers.
- Conveying valid interpretations and making justifiable claims based on research findings.

Meticulous care, thoroughness and excellence in research practice:
- In performing research and using appropriate methods.
- In adhering to an agreed protocol where appropriate.
- In drawing interpretations and conclusions from the research.
- In communicating their results.

Transparency and open communication:
- In declaring conflicts of interest.
- In the reporting of research data collection methods.
- In the analysis and interpretation of data.
- In making research findings widely available, including sharing negative results as appropriate.
- In presenting the work to other researchers and to the general public.

Care and respect for:
- All participants in and subjects of research, including humans, animals, the environment and cultural objects.
- The protection of research and scholarship for future generations.

In addition to these core principles, researchers should ensure that their research is conducted according to appropriate ethical and professional frameworks, obligations and standards. This includes seeking ethical approval for research where appropriate. Researchers are also expected to treat colleagues with integrity, honesty and respect, including the fair provision of references and peer review. As part of its commitment to the principles of the National Policy Statement on Ensuring Research Integrity in Ireland, the Institute will support researchers to maintain the highest standards of integrity in research by:

- Providing clear policies and procedures, as well as training and guidance to help researchers better understand how to maintain high standards of research integrity.
- Having suitable mechanisms for reviewing ethical issues raised by research.
- Using transparent, robust and fair processes to deal with allegations of research misconduct.
- Continuing to work to strengthen the integrity of its research through regular review and monitoring of its support, policies and procedures.

Dundalk Institute of Technology has a number of policies that relate to research integrity issues.

These include:

- Postgraduate Research Degree Regulations (*dkit.ie/research/dcu-dkit- graduate/academic-regulations-research-awards)*.
- Research Ethics (*dkit.ie/registrars-office/academic-policies/ethics-policy)*.
- Academic Integrity (*dkit.ie/registrars-office/academic-policies/academic-integrity-policy-procedures)*.
- Intellectual Property and Research Commercialisation.
- Policy on Personal Data and Data protection (under development).

1 iua.ie/wp-content/uploads/2014/06/National-Policy-Statement-on-Ensuring-Research-Integrity-in-Ireland-2014.pdf

2 European Code of Conduct for Research Integrity, European Science Foundation and ALLEA (All European Academies), March 2011, www.esf.org

3 universities.ac.uk/highereducation/Pages/Theconcordattosupportresearchintergrity.aspx

4 Ensuring Integrity in Irish Research, 2010, www.ria.ie

5 ec.europa.eu/programmes/horizon2020/en/h2020-section/responsible-research-innovation

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Introduction

Dundalk Institute of Technology's Good Research Practice Guidelines have been developed to emphasise the importance of integrity and rigour in all research carried out at, and in partnership with, the Institute. The policy covers openness, supervision, training, intellectual property, the use of data and equipment, publications of research results and ethical practice.

These guidelines are informative, rather than prescriptive. They offer assistance to researchers in helping them to determine how to apply the baseline standards set by policies and regulations of the Institute, as well as by wider legal and contractual requirements and ethical customs. Research will require adherence to principles of ethics and integrity according to the type of research undertaken. Therefore these general guidelines may need to be supplemented by other research-related policies, guidelines and values. This policy will be routinely reviewed every three years unless earlier revision is required due to a major change in the legislation, regulations and guidance that govern good research practice. The Research Office welcomes feedback on the content of this document. Anyone with comments or suggestions regarding the Guidelines is invited to send them to *researchoffice@dkit.ie*

Dundalk Institute of Technology is responsible for ensuring that its research is carried out in conformity with current legislation. The Institute expects all those engaged in research to observe these rules and regulations, whether they are employees or students of The Institute and irrespective of the sources of their funding, or their area of research. Researchers should make efforts to understand and meet the expected standards of integrity and good practice relevant to their work. To facilitate such efforts, this document provides guidelines on good practice in research. It is intended for all staff and students carrying out research at or on behalf of The Institute.

Academic Freedom

The principle of academic freedom has been enshrined in the Institutes of Technology Act (2006) and among the major purposes of an Institute of Technology, is to provide vocational and technical education and training for the economic, technological, scientific, commercial, industrial, social and cultural development of the State.

Academic freedom is at the very core of the mission of the Institute, and is essential in achieving these goals. A fully developed higher education system cannot exist without it. Academic freedom was acknowledged in the Institutes of Technology Act (2006) which stated that an Institute in performing its function shall:

"have the right and responsibility to preserve and promote the traditional principles of academic freedom in the conduct of its internal and external affairs."

At the level of the individual, the Act is specific in stating that:

"A member of the academic staff of a college shall have the freedom, within the law, in his or her teaching, research and any other activities either in or outside the college, to question and test received wisdom, to put forward new ideas and to state controversial or unpopular opinions and shall not be disadvantaged, or subject to less favourable treatment by the college, for the exercise of that freedom."

Funder Requirements

Research funders cannot be prescriptive about individual approaches taken by researchers to solving particular research problems. However, funders can reasonably expect the Institute to ensure that an adequate policy framework exists that promotes good research practice, that emphasises integrity and rigour in research and that facilitates the development of a culture in which the following general principles can be understood and observed.

A list of relevant policies and guidance from various funders is provided at the end of this document. Researchers should ensure that they are aware of and abide by all policies and guidelines that apply to their research. Researchers should be aware of these obligations and seek advice where required. Researchers should report any significant changes in the direction of funded research to the funder or any other relevant body. Best practice would be to discuss any change in direction of the research with the funder prior to its implementation. Most funding agreements will provide a mechanism for handling this process. The Institute's Research Office can provide guidance on funder requirements and funding agreements.

Integrity

All individuals involved in research at DkIT are expected to observe the highest standards of integrity, honesty and professionalism in their own actions in research and in their responses to the actions of others.

This applies to the whole range of research work including, but not limited to:

- Designing studies and experiments.
- Generating, recording, archiving, analysing and interpreting data.
- Sharing data and materials; applying for funding.
- Presenting and publishing results.
- Training new researchers, staff and students.
- Peer reviewing the work of other researchers.

The Institute expects research results to be checked for accuracy and consistency by the researchers responsible for them before being made public. Researchers must be able to explain and justify how results were reached. The Institute is committed to upholding the commitments outlined in the National Policy Statement on Ensuring Research Integrity in Ireland. This requires those involved in research to abide by National, European and International standards of research integrity and to embed good practice in every aspect of their work. All researchers should be aware of their responsibilities under the policy.

For more details please refer to the following documents on the Research section of the DkIT website:

- Academic Integrity Policy.
  - DkIT Referencing Guidelines and How to Avoid Plagiarism.
  - Student Code of Conduct.
- Ethics policy.
- Guidelines on Good Research Practice.
- Postgraduate Degree Regulations.
- National Policy Statement on Ensuring Research Integrity in Ireland.

Research Misconduct

The Institute takes all allegations of misconduct in research very seriously. The Institute is committed to ensuring that allegations of misconduct in research are investigated with all possible thoroughness and vigour. All members of the Institute have a responsibility to report any incident of misconduct, whether this has been witnessed, or is suspected.

Definition of Research Misconduct

Research misconduct[6] means fabrication, falsification, or plagiarism, in proposing, performing, or reviewing research, or in reporting research results.

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

Falsification is manipulating research materials, equipment, or processes, or changing or omitting data or results such that the research is not accurately represented in the research record.

Plagiarism is the appropriation of another person's ideas, processes, results, or words without giving appropriate credit.

While Fabrication, Falsification, and Plagiarism represent the most serious examples of misconduct, there are also additional types of poor practices which, while not as serious as FFP in individual instances, are probably more widespread and therefore potentially more damaging to the reputation of research and the research community's integrity.

6 OECD, Best practices for ensuring scientific integrity and preventing misconduct: based on a workshop held on 22-23 February 2007, in Tokyo, Japan, submitted to the first World Conference on Research Integrity, Lisbon, September 2007; http://www.oecd.org/sti/scienceandtechnologypolicy/40188303.pdf

These poor practices include but are not confined to:

- Data-related poor practice e.g. not preserving primary data, poor data management and/or storage.
- Publication-related practice e.g. claiming undeserved authorship, denying authorship to contributors, artificially proliferating publications.
- Personal behaviours e.g. inadequate leadership/ mentoring of next generation of researchers and scholars, inappropriate personal behaviour.
- Financial and other malpractice e.g. peer review abuse, non-disclosure of a conflict of interest, misrepresenting credentials.
- Poor research procedures e.g., harmful, dangerous or unethical research methods.

Where specific issues arise in relation to the Code of Good Research Practice these should be addressed, where feasible, within the research team before being raised at the Department or School level.

For more details please refer to the following documents on the Research Pages of the DkIT website:

- Ethics Policy
  - Guidelines for the Conduct of Ethical Research at DkIT
- Postgraduate Research Degree Regulations
- Academic Integrity Policy
  - DkIT Referencing Guidelines and How to avoid Plagiarism
  - Student Code of Conduct

Conflict of interest

Researchers should declare and manage any real or potential conflicts of interest, both financial and professional. Researchers should ensure that they abide by any conflict of interest requirements of funders or that are otherwise relevant to their research.

Openness

Whilst recognising the need for researchers to protect their own intellectual property rights (IPR), The Institute encourages researchers to be as open as possible in discussing their work with other researchers and with the public. The Institute is committed to disseminating research and scholarship as widely as possible, whilst affirming academic freedom to choose the location and nature of publication. In keeping with this commitment, the Institute encourages its researchers to make their research available through Open Access. Where research funders include Open Access requirements as a condition of grant funding, researchers are expected to ensure that they comply with such requirements.

Once results have been published, the Institute expects researchers to make available relevant data and materials to other researchers, on request, provided that this is consistent with any ethical approvals and consents which cover the data and materials, confidentiality considerations, and any intellectual property rights in them. Many funders will have data sharing policies that must be abided by where appropriate.

For more details please refer to the following documents on the Research Pages of the DkIT website:

- Open Access policy.
- Social Media Policy.
- Privacy Policy.
- Data Protection Policy.
- Information Security Policy.

Leadership & Co-operation

Heads of School, Principle Investigators, Research Centres and Groups should ensure that a research climate of mutual co-operation is created in which all members of a research team are encouraged to develop their skills and in which the open exchange of ideas is fostered. Efforts should also be made to foster an environment where research is conducted in accordance with good research practice and to ensure that all those involved in research are made aware of these guidelines and related policies and guidelines. Senior researchers should make particular efforts to help new members of the scientific community understand and adopt best practice. Within a research group, responsibility to ensure that good research practice is maintained throughout the research process ultimately lies with the group leader.

Health & Safety in Research

Researchers need to understand and manage the hazards and risks to their own and others' health and safety associated with their project. Core to developing such understanding is the identification of hazards and the assessment of risks on the project. It is expected that researchers will work closely with their supervisors to identify and control significant risks associated with their work and to develop their competence (through specific training etc) in the safety aspects of their research. In addition researchers must make themselves aware of the health and safety policies (both local and DkIT wide) applicable to their work.

For further information please refer to the DkIT Statement of Health and Safety and Local School / Research Centre Safety Statements.

Supervision

There is a responsibility on supervisors (including those of research and of taught programme students undertaking research), to ensure that good practices are learned and followed. Research misconduct is less likely to occur in an environment where good research practice is encouraged and where there is adequate supervision at all levels. A researcher must decline appointment as a supervisor of a research programme or thesis if that person expects not to be able to discharge the responsibilities in full.

The role of research supervisors is detailed in full in the Academic Regulations for Postgraduate Degrees by Research which is accessible on the Research section of the DkIT website.

Supervisory Responsibility

Dundalk Institute of Technology ensures that appropriate training and direction of research and supervision of researchers is available. Training in supervisory skills is provided as part of the Institute's overall staff development programme. All supervisors must be appropriately qualified and have undergone the Institute's supervisory training programme and the Academic Regulations for Postgraduate Research Degrees clearly sets out supervisor responsibilities.

The responsibilities of the supervisor(s) are:

- To provide guidance and advice to the student regarding the research project and the standard expected on an on-going basis.
- To establish and maintain a timetable for the research with the student.
- To provide contact and guidance through regular meetings with the student maintaining a record of such formal meetings.
- To assess on an on-going basis the training needs of the student in both discipline- specific and generic transferable skills through the conducting of a skills audit.
- To ensure the student receives the required training.
- To formally monitor the student's progress during the course of the research programme whilst ensuring that the student is aware of any inadequacies of progress or standards.
- To make recommendations on requests for transfer to a higher or lower register.
- To advise on the format and the methodology of the thesis as well as the examination process.
- To formally acknowledge the contribution of the student in any presentation or publication involving the student's work.

Supervisors should supervise all stages of the research process, including outlining or drawing up a hypothesis, preparing applications for funding, the design of experimental or research protocols, data recording and data analysis. The Institutes Academic Regulations for Postgraduate Research Degrees states "All supervisors must be appropriately qualified and have undergone the Institute's supervisory training programme, or an equivalent programme administered through another Higher Education Institute. All supervisors shall participate in support and refresher training relevant to their experience".

As such, the Institute offers an annual course for supervisors consisting of the following workshops:

- Lifecycle 1: Initial Phase.
- Lifecycle 2: Moving forward.
- Lifecycle 3: Progress to completion.
- Lifecycle 4: Demystifying the Viva and beyond.
- Training workshop for Research degree examiners and Viva chairs.
- Catch up Review of lifecycles 1 to 4.

Performance Review

The main aims of the Performance Review are to enhance and support the strategic planning of research within research groups and departments, to ensure that individual research paths are in line with departmental strategy; and to ensure that the research environment within departments is supportive and responsive to the needs of research staff. The focus of the Performance Review is developmental for both individuals and departments with an emphasis on research assistants, postdoctoral fellows and research fellows.

Supervisors and researchers are to agree a Personal Development Plan which will clearly detail the expectations and outputs for the researcher. The Performance Review will provide staff with feedback on their performance and an opportunity to agree priorities for the coming year. There should be regular reviews so that appropriate action can be taken, such as the provision of additional training or guidance.

For more details please refer to the following documents on the Research section of the DkIT website:

- Roles and Responsibilities for Contract

Research & Professional Development

Research and Professional Development planning is an integral part of the structured PhD programme at DkIT. On leaving the Institute with a PhD it will be expected that, in addition to having produced a body of original research, the student will also have developed a set of skills programme.

Central to the student's research programme are regular meetings with their supervisor to discuss their research, their professional development and their progress in achieving their goals. A mandatory outcome of the meetings with the student's Supervisor is a formal record of the student's research and professional plans and their progress to date.

In cooperation with the student's supervisor the student should consider the following issues:

- Skills and training needs assessment (0-3 months)
  - *What do I need to start and enhance my PhD?*
- Prepare for transfer assessment (12-15 months)
  - *Describe the thesis plan and work to date.*
- Thesis preparation (30-40 months)
  - *Structure & content of thesis, publications, and discuss extern and viva the student can meet more often than this, twice a year would be a good guide.*

The Irish Universities' Association has issued a graduate student skills statement[7] which describes the desired learning outcomes and skills that PhD students are expected to develop during their studies.

These include:

- Research Skills and Awareness.
- Ethics and Social Understanding.
- Communication Skills.
- Personal Effectiveness/Development.
- Team-working and Leadership
- Career Management.
- Entrepreneurship and Innovation.

The structured training offered by DkIT ensures that these 'transferable skills' are addressed through a series of workshops and training events (See Page 19). With respect to Research Career Development DkIT is a member of Vitae. Vitae are the global leader in supporting the professional development of researchers. All staff and students of Dundalk Institute of Technology have access to the Vitae website and associated research career development policy documents, training resources and tools.

For more details please refer to the following documents on the Research section of the DkIT website:

- Roles and Responsibilities for Contract Researchers.
- Vitae members pages *vitae.ac.uk/vitae-community*.
- Postgraduate Degree Regulations.

7 iua.ie/wp-content/uploads/2014/10/IUA-PhD-Graduate-Skills-Statement-20141.pdf

Training

The Institute offers many courses to enable students, staff and new researchers to understand and adopt best practice in research as quickly as possible. Supervisors should encourage students and colleagues to attend relevant courses as part of their overall career development. Lists of courses are available on the Research section of the Institute website. Relevant courses are increasingly available as part of the Institute's teaching programme.

The Institute therefore expects researchers to undertake appropriate training and offers the following training for Postgraduates, Post Docs and Research Staff:

- Literature Research on the Web.
- Research Publishing Workshop: Strategies for Research Writing and Successful Publication.
- Strategies for Time Management.
- Measuring your Research Impact.
- Innovation and Design Thinking.
- Training as a Tutor and Graduate Teaching Assistant.
- Surviving the Viva.
- EU Application Writing Workshop.
- Research Ethics at DkIT: Principles and Practice.
- Academic Writing Workshop.

Primary Data & Samples

Ownership & Responsibilities

There should be clarity at the outset of the research programme as to the ownership and use of, where relevant:

- Data and samples used or created in the course of the research.
- The results of the research.
- Patient questionnaires.
- Equipment paid for by funders.

The responsibilities and procedures for the storage and disposal of data and samples (including compliance with the requirements of any ethics committee) should be made clear at the commencement of any project. Any research collaboration agreement relating to the research should contain clauses describing any necessary arrangements.

Research Data

Research data should be generated using sound techniques and processes and accurately recorded in accordance with good research practices by those conducting the research. When collecting personal data, researchers must comply with the Data Protection Act 2003 and when transposed, with the EU General Data Protection Regulation (2016). This will include explaining to any participants in their research what they will be doing with their data, who will have access to it, and who (if anyone) they intend to pass it to outside Dundalk Institute of technology. This is doubly important to researchers who intend to share the personal data of their research participants with any collaborators or funders based outside of the EEA.

Further guidance on data protection will be provided by the Policy on Personal Data and Data Protection (currently being developed). The Policy will address how:

- All research data must be managed and curated effectively throughout its lifecycle to ensure integrity, security and quality and where possible to support new research and research data sharing.
- Data stored locally on a computer should be backed-up.
- Electronic files containing personal data should be encrypted or password protected and access to them should limited to as few people as possible.
- It is of paramount importance that confidentiality, where required, is maintained.

The appropriate period for retaining data will depend on circumstances and the research field in question. Equally the means of data storage should be appropriate to the task. Even if the individuals responsible for generating the data relocate, a set should be retained in DkIT. This is particularly important in the case of Masters and PhD students who leave the university on completion of their higher degree. Data sets are an important resource, which enable later verification/audit of scientific interpretation and conclusions, and may also be the starting point for further studies.

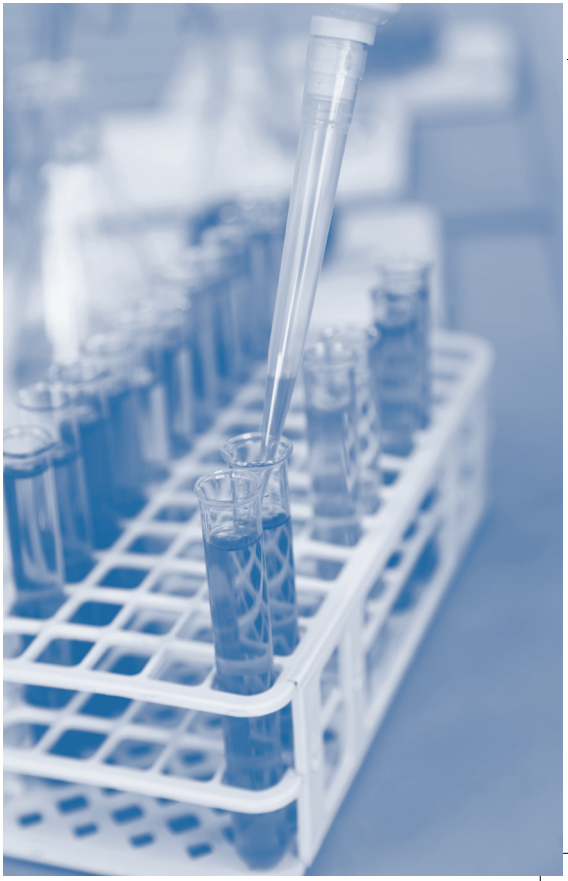
Researchers must also pay particular attention to any non-disclosure agreements entered into and/or non-disclosure clauses in proposed funding agreements and ensure they do not compromise good practice in data/sample retention and/or publication of research outputs.

Record Keeping

Researchers should keep clear and accurate records of the procedures followed and the approvals granted during the research process, including records of the interim results obtained as well as of the final research outcomes. This is necessary not only as a means of demonstrating proper research practice, but also in case questions are subsequently asked about the conduct of the research, the results obtained, or inventorship on patentable inventions.

For more details please refer to the following documents on the Research section of the DkIT website:

- Privacy Policy.
- Data Governance Policy.
- Information Security Policy.



Communication, Dissemination & Publication of Results

The Institute encourages the publication of and dissemination of results of high quality research but believes that researchers must do this responsibly and with an awareness of the consequences of any such dissemination in the wider media. Dissemination will normally be a requirement of research funding. Funding agreements will normally require funders to be informed of any potential publication or dissemination of the research findings. This will enable the funder in question to have adequate time and accurate information to protect any arising intellectual property or to plan their own public relations, in conjunction with the Institute.

Advice on press releases and publicity can be obtained from the Institute's Communication and Marketing Manager. Arrangements and responsibilities for the publication of results should be taken into account when planning a study and should ideally be agreed by all investigators at the outset. These should be revisited where role and contributions change over the life cycle of the study. Such discussions might include authorship, authorisation for the content of papers, and the intended place of publication. Researchers should take into account the following guidance when publishing or disseminating their research or research findings including any plans they may have to publish or publicise research at conferences or on websites.

Research should normally be peer reviewed prior to it being published, publicised or disseminated. If research is placed in the public domain before peer review has been undertaken, the researcher must make this clear in any publicity.

- Funding sources should normally be acknowledged in any publication or publicity.
- Results of research should be published in an appropriate form.
- Anyone listed as an author on a paper should accept responsibility for ensuring that he or she is familiar with the contents of the paper and can identify his or her contribution to it. Honorary authorship is not good practice.
- The contributions of formal collaborators and all others who directly assist or indirectly support the research should be both specified and properly acknowledged.
- Researchers should make every effort to ensure that research is disseminated in a responsible manner, in such a way that results are not overstated or hyped. The Research Office can advise on how best to achieve this aim.
- Any potential intellectual property is protected appropriately prior to disclosure.

Researchers should adhere to the Institute's Code of Practice on Authorship which can be attained through the Research Office.

Intellectual Property

The protection and management of Intellectual Property emanating from the Institute's research activities is guided by both National[8] and European best practice[9]. DkIT researchers have a duty to ensure that intellectual property arising from their work is properly protected. Researchers must inform the Research Office and the Technology Transfer Manager of any intellectual property rights that may arise from research and in the case of externally funded research also inform the sponsor, if they so request. Full details of the Institute's Intellectual Property and Commercialisation Policy can be found on the Research section of the Institute website. It is essential to keep thorough records of experimental work as part of good research practice and also for intellectual property purposes. Carefully maintained laboratory notebooks may be necessary to prove the date of an invention and its reduction to practice. It is particularly important that appropriate laboratory notebooks are used for projects involving industrial collaborators and in many cases it is stipulated in collaborative research agreements. The Technology Transfer Office can clarify how the Intellectual Property and Commercialisation Policy operates, and it exists to help Dundalk Institute of Technology inventors, innovators and entrepreneurs make their ideas and concepts more commercially successful for the benefit of society, the economy, the inventors and the Institute.

8 "The National IP Protocol" - knowledgetransferireland.com/managingIP/

9 "The Plan for the Exploitation and Dissemination of Results in Horizon 2020" - iprhelpdesk.eu/sites/default/files/newsdocuments/FS-Plan-for-the-exploitation-and- dissemination-of-results_1.pdf

Ethical Practice

All research carried out at the Institute must comply with relevant legal, regulatory, professional and ethical requirements and standards. Researchers should be familiar with, and know how to access such requirements including ethical guidance and policies. Researchers who are unsure whether such requirements apply to their projects should seek advice. Researchers should work to ensure that, throughout the lifecycle of their investigations, ethical issues relating to their research projects are identified and managed. Ethical issues should be interpreted broadly and may encompass areas where regulation and approval processes exist as well as areas where they do not. All appropriate licences, permissions and approvals must be in place before research starts and be updated as necessary if plans change.

As required by many external research funding bodies and in keeping with good practice, DkIT operates a research ethics approval system. Research projects with human or animal participants are required to be approved through these procedures, protecting the research participants, the researchers, and the good name of the Institute. DkIT's Research Ethics Committee (REC) provides guidance on these procedures.

The quality of any research depends not only on its scientific rigour, but also on its ethical adequacy. Ethical issues are many and varied, and may be quite complex. In general, it is expected that members of the DkIT research community will pursue their research activities in a manner that is consistent with the highest standards of ethical and scientific practice, and will seek to maximise the benefits and minimise the harm associated with their research.

Supervisors of students, both undergraduate and postgraduate have ultimate responsibility to work with students on the submission of project proposals to the REC where required, and the subsequent monitoring of ethical standards in the conduct of the projects.

Details of The Institute's research ethics review system, including contact details for research ethics committees, are available on the Research section of the Institute website. The ethical issues that researchers encounter in their work may vary according to the type of research they undertake. As such, researchers should familiarise themselves with the ethical guidance relevant to their subject area or issued by their department or funder.

Research Involving Animals

The Institute and its funders require that research involving animals should have been subject to the following (through the appropriate bodies):

– Ethical Review Process

Researchers are required to consider the opportunities for Reduction, Replacement and Refinement of animal involvement in research – the principle of "The Three Rs".

Research Misuse, Non-Proliferation & Dual-Use Research

Researchers must consider any risks that their research will generate outcomes that could be misused for harmful purposes both when setting up research collaborations, communicating results and teaching.

Financial Integrity in the Management of Research Funds

Research funding bodies all have their own rules on the administration of awards, including financial management and reporting requirements. It is the responsibility of the award recipient, usually identified as Principal Investigator, to ensure compliance with all funding body rules.

Expenditure on a project grant from internal and/or external sources will be permitted only when a grant or contract has been formally accepted by Research Office on behalf of the Institute, the Finance Office has been notified and a specific research account has been set up for the Principal Investigator. It is the responsibility of the Principal Investigator to ensure that expenditure on the grant is in accordance with the budget and the associated terms and conditions. Financial irregularities, including overspends, are considered serious breaches of good practice. If they are not resolved with the Principal Investigator (in conjunction with his/her Head of School/ Centre) they may be dealt with through the Institute's disciplinary procedures.

Financial management responsibilities include:

- Integrity of the financial reporting cycle from initiation of transactions through to financial reporting externally and internally.
- Accurate coding of transactions at initiation stage.
- Regular monitoring and review of recorded costs with financial budgets.
- Authorised, accurate and complete financial data recorded for each project.
- Adherence to Irish Employment/Tax Laws Prior to relocating to another institution, the Research Office and the Finance Office should be notified when existing research grants are to be transferred to another institution to ensure appropriate arrangements are in place.
- Responsibility remains at all times with the individual to ensure that their personal tax affairs are in order. The Institute at all times is obliged to and will comply with Irish Revenue Law.
- Audits: The Finance Office is the principal point of contact for sponsors in respect of financial audits. Principal Investigators should be available to answer audit queries and provide such assistance as is required.

There is a requirement and need to review and proactively manage projects on an ongoing basis and not just near the end of the project life cycle when funds are scarce. The Finance Office personnel are available to discuss any financial management issues. Noncompliance with the highest levels of financial integrity can result in:

- Stopping all further expenditure on specific grant(s).
- Removal of access to internal funding including research overheads.
- Formal disciplinary action.

Collaboration

Research is increasingly collaborative, involving individuals from different disciplines and from institutions within and beyond Ireland. In establishing research collaborations researchers should be mindful of the Institute's policies and guidelines, as well as funder, legal and regulatory requirements, and ensure that research partners and their employing institutions are able to meet the required standards of research conduct. There needs to be clear agreement on and articulation of the standards and frameworks that will apply to collaborative work[10]. This is particularly important in relation to the provenance of intellectual ideas and ownership of research outcomes as well as the specific conditions under which these may be shared. All parties should be clear about their respective roles and responsibilities within the collaboration, which should be set out in any formal collaboration agreement. The Research Office can advise and has various model agreements for use.

10 Montreal Statement on Research Integrity in Cross-Boundary Research Collaborations.

Good Research Practice Guidelines