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RESEARCH ETHICS POLICY FOR THE UNIVERSITY OF MINES AND TECHNOLOGY

1. INTRODUCTION

The University of Mines and Technology (UMaT) started in 1952 as the Tarkwa Technical Institute. In 1961, it was reorganised to become the Tarkwa School of Mines to train the required manpower for the mining and allied industries in Ghana. In 1976, the School was affiliated to the Kwame Nkrumah University of Science and Technology (KNUST) as a faculty of the University. It became the Western University College of KNUST in 2001. UMaT was established in November 2004 by an Act of Parliament (Act 677). UMaT is committed to applying the values of excellence, truth, transparency, service, tolerance and mutual respect, dedication, scholarship, responsibility and academic freedom in all its activities. This includes, by definition, all the research conducted at the University.

The purpose of this policy framework is to establish the fundamental principles of research ethics and scientific integrity which shall serve as the foundation for research conducted at this University. The document is a broad policy framework for the University Research Ethics Committee (UREC) and the respective Faculty Research Ethics Committees (FREC). The FRECs shall formulate their own detailed procedures and goals, and shall function independently within this framework. The University expects all those conducting research under the auspices of UMaT, whether they are employees, students or visiting Investigators at the University and irrespective of the source of funding or the field in which they conduct their research or the site where the research is conducted, to honour these principles. UMaT holds the view that good research assumes ethical acceptability according to internationally acceptable norms and this responsibility lies with every person conducting research under the auspices of UMaT.

2. VISION STATEMENT

The vision of the University is to be a Centre of Excellence in Ghana and Africa for producing world-class professionals in the fields of mining, petroleum, technology and related disciplines.

3. MISSION STATEMENT

The mission is to provide higher education in mining, petroleum, technology and related disciplines through effective teaching and learning; to promote knowledge through active research and dissemination of information and to offer professional services through extension activities to the mining and allied industries.

4. CORE VALUES

The core values of the University are Knowledge, Truth and Excellence.

5. PURPOSE OF POLICY

This policy outline is aimed at assuring and promoting ethically accountable conduct of research (involving human and non-human subjects) at UMaT. The purpose is to ensure:

- i. complete supervision of all ethics committees at UMaT;
- ii. that research activities involving human and non-human subjects are reviewed;
- iii. that ethical standards for the care and protection of both human and non-human subjects are adhered to; and
- iv. that research activities within UMaT are in compliance with all national and international regulations.

6. SCOPE OF POLICY

‘Investigator’ in this policy, refers to UMaT staff and students, visiting investigators and other persons involved in collaborative research at UMaT. Persons involved in collaborative research must agree in writing to be bound by this policy, irrespective of the site on which the research is conducted.

7. PRINCIPLES OF RESEARCH ETHICS AND SCIENTIFIC INTEGRITY

The UMaT Ethics Policy is governed by the Code of Conduct for UMaT Senior Members and the Applicable Laws and Statutory Regulations of UMaT, the Whistleblower Act 2006 (Act 720), Public Health Act 851 and other relevant laws of Ghana, the Declaration of Helsinki (1996) and the Belmont Report.

7.1 Respect for Persons

This principle places importance on human subjects and thus ensures there is adequate information available on potential benefits and risks of the research so that individuals can participate voluntarily. Respect for persons consists of two ethical principles:

a) **Respect for Autonomy**

This principle considers each individual as autonomous, having the capability to make rational decisions and choices, and thus shall be treated with respect for their self-determination capabilities.

b) **Protection of Persons with Diminished Autonomy**

This principle requests security for vulnerable or dependent individuals so they will be protected against harm.

7.2 Beneficence

This principle requires that the risk which individuals participating in a research are exposed to shall be as minimum as possible, while appropriate steps should be taken to maximise the potential benefits associated with the research.

7.3 Non-maleficance

This principle gives opportunity to research subjects to withdraw from a study at any time without penalty, and that no individuals shall be harmed at any point in time.

7.4 Justice

It requires each subject to be treated right in accordance with what is morally right, and shall be given what is due him/her, failure of which there should be a justification.

7.5 Integrity

Investigators shall maintain the highest standards of truth, honesty and integrity at all times, and do research according to internationally acceptable moral values. The University regards research dishonesty as a serious offence, and this includes lack of transparency and conflict of interest, misuse of research funds, misuse of human and animal subjects, plagiarism, fabrication and falsification of data and results.

7.6 Responsibility

Researchers shall take full responsibilities for their actions and inactions regarding their research activities, and hold themselves accountable to their professions, sponsors, societies, the University and affiliated institutions. It is the responsibility of researchers to familiarise themselves with guidelines and legislation published by relevant scientific and professional associations, statutory councils and government institutions, and to comply with them.

7.7 Scientific Validity and Peer Review

It is highly unethical and a waste of resources to engage in research which has fundamental flaws in methodology and design. Appropriate peer review is therefore required to ensure sound methodology and scientific validity.

7.8 Academic Freedom and Dissemination of Research Results

UMaT supports the principle of academic and intellectual freedom. Investigators have the responsibility of accurately reporting research results in a transparent manner either to the target group or the public. In cases where publication of research results should be delayed based on issues regarding patents or intellectual property and/or certain corporate claims, or protection of concerned individuals from harm, appropriate permission shall be sought from UREC or FREC that originally approved the research.

8. ROLES AND RESPONSIBILITIES

The UMaT Research Ethics Policy establishes and empowers all Ethics Committees to perform the following mandates:

8.1 University Research Ethics Committee (UREC)

- a. Overall responsibility for the development, implementation and monitoring of research ethics policies lies with the University Research Ethics Committee. The membership of the UREC shall consist of
 - i. Dean of Office of Research, Innovation and Consultancy as Chairman.
 - ii. Dean of the School of Postgraduate Studies.
 - iii. Dean of Planning and Quality Assurance Unit.
 - iv. Chairs of Faculty Research Ethics Committee.
 - v. A representative of the Registrar at the Office of Research Innovation and Consultancy not below the rank of Assistant Registrar shall serve as the Secretary.
- b. The UREC shall be responsible for approving the terms of reference, membership, procedures and annual reports of the Faculty Research Ethics Committees (FRECs) and give guidance to the FRECs as required.
- c. The UREC shall consider specific ethical matters on an ad hoc basis, for example, if a FREC is unable to reach a decision on a research proposal for whatever reason or if an Investigator wishes to appeal against the decision of a FREC.
- d. The UREC shall undertake an annual audit of decisions taken by the FRECs.
- e. The UREC shall exercise oversight responsibility on emerging ethical issues relating to research, and if necessary, report to the Vice Chancellor and/or Academic Board.
- f. The UREC shall provide an annual report to Academic Board.
- g. Reporting relationships of the various committees are summarised in Appendix A.

8.2 Faculty Research Ethics Committees

Research can be subject specific (e.g. Earth Science research, Humanities/ Social Science research, Engineering research) and may require specialist attention regarding how it should be handled. Accordingly, the majority of

research proposals shall be assessed by the FRECs. The following shall be the requirement of the FRECs:

- a. The membership of FREC shall consist of
 - i. Dean of the Faculty as Chairman.
 - ii. Two (2) Professorial members.
 - iii. Two (2) non-professorial members in the Faculty.
 - iv. Head of Department of the Principal Investigator.
- v. Faculty Officer, who shall not be below the rank of an Assistant Registrar, shall be the Secretary.
- b. FREC shall review all research projects involving human and non-human subjects in the faculty.
- c. FREC shall ensure respect for the dignity, rights and wellbeing of all research subjects.
- d. FREC shall seek to maximise the public benefit of research and minimise harm.
- e. FREC shall oversee the activities of approved projects and initiate periodic auditing on them.
- f. FREC shall verify compliance of on-going research with approved research protocols and inform UREC of any breach.
- g. FREC shall request prompt reportage of any occurrences throughout the approved project life cycle.
- h. FREC shall terminate or discontinue any previously approved protocol, where necessary, and report to UREC.
- i. FREC shall ensure research compliance with national and international guidelines.
- j. FRECs shall have the responsibility to evaluate the quality of all research proposals before external ethical approval, if any. The approved document (external application form and letter of approval) shall be ready within one week of receipt.
- k. The Chair of each FREC shall provide an annual report to the UREC in respect of ethical issues.
- l. FRECs shall operate in various ways appropriate to their constituencies, and shall provide an annual report to the UREC in the format specified as follows:
 - i. The current Committee membership.

- ii. Details of any suggested or agreed changes to the approved procedures.
 - iii. Where appropriate, the number of cases referred to external ethics committees.
 - iv. Where appropriate, details of high risk projects identified and under review.
 - v. Any issues for consideration by the UREC.
 - vi. Summary of action taken by the FREC including details of the number and title of applications considered, the decisions taken and any particular difficulties encountered and/or actions taken.
- m. FRECs, with nothing to report on shall be required to submit a statement to that effect.
- n. UREC shall consider the annual reports, offer advice and recommendations as appropriate, and report to Academic Board on any major policy issues or outstanding challenges.

9. THE INVESTIGATOR

- a. The Investigator shall bear primary responsibility for the protection of human and non-human subjects in research.
- b. The Investigator shall adequately explain to research subjects, prior to their participation, the need for the research, research methodology, and the potential risks and benefits to the research subjects and the society.
- c. The Investigator shall not coerce any individual to participate in any research without his/her consent on the consequences of his/her actions, and completed forms to that effect.
- d. The Investigator shall respect the privacy of research subjects and protect confidential information about them at all times.
- e. The Investigator shall clearly inform research subjects of their freedom of exit from the research without any form of prejudice.
- f. The Investigator shall ensure adequate participation and cooperation with all research quality assurance reviews.

10. QUALITY ASSURANCE

- a. Planning and Quality Assurance Unit (PQAU) shall ensure continuous education of all the Chairpersons and Members of the various UMaT Ethics Committees.

- b. The PQAU shall monitor the activities of the Committees to ensure full compliance to UMaT Research Ethics Policy and other related policies.

11. GENERAL POLICY ON THE BEHAVIOUR OF COMMITTEES

- a. The membership of all Committees involved in the review of research ethics shall not include the Investigator(s) proposing the research. Where a member of UREC or FREC submits a research proposal for consideration, he/she shall recuse himself/herself from the panel, except when required to defend issues.
- b. Quorum for Committee meetings shall be fifty percent (50%) of total membership. In the case where there are absentees, the Secretary shall seek confirmation of proposals from sufficient absentee members after the meeting. Committees shall build consensus in decision making. If it is not possible for members to fully agree, then two thirds of the Committee membership shall be required for approval of proposals.
- c. All Committees shall be interdisciplinary and their membership shall take due account of equality, equity and diversity issues.
- d. Ethical review shall normally be conducted after the research proposal has been confirmed, for example, when a grant application has been approved for funding.
- e. Committees shall take into account the University's own policies, relevant professional codes of ethics and the policies of research sponsors. Where there is a difference in ethical standards between the University's policy and those of the relevant professional body or research sponsor, the one considered the highest standard of ethical practice shall apply.
- f. In cases of collaborative research with other institutions, the research participation of UMaT staff must be considered by the relevant University Research Ethics Committee (UREC). Research shall not be allowed to proceed even if it has received Ethical approval by another institution.
- g. Ethical approval shall always be given in research involving human participants. In cases where the risk is not significant, FRECs shall establish procedures for expedited review. For example review could be done by e-mail or by the Chairperson. A full Committee shall normally consider the following research which may involve significant risk:
 - i. Research involving susceptible or vulnerable groups, for example,

children and young people, those with a learning disability or cognitive impairment, or individuals in a dependent or unequal relationship.

- ii. Research involving sensitive or delicate topics, for example participants' sexual behaviour, their illegal or political behaviour, their experience of violence, their abuse or exploitation, their mental health, or their gender or ethnic status.
- iii. Research involving groups where there is no initial access to members unless normally with the permission of a gatekeeper, for example, ethnic or cultural groups and indigenous communities.
- iv. Research involving dishonesty or which is conducted without participants' full and informed consent at the time the study is carried out.
- v. Research involving access to personal or confidential records, including genetic or other biological information, concerning identifiable individuals.
- vi. Research causing psychological stress, anxiety or humiliation or causing more than minimal pain.
- vii. Research associated with intrusive interventions, for example, the administration of drugs or other substances, vigorous physical exercise, or techniques such as hypnotherapy.
- h. The potential environmental effect of research as well as sustainability of the environment and the research should be considered by FRECs.
- i. Procedures of FRECs shall be approved by the UREC.

12. MONITORING RESEARCH

- a. Projects which will require monitoring during the life of the research because of the ethical issues involved shall be identified by the FRECs and the monitoring shall become a condition of approval. Details of the monitoring configuration and frequency which will be proportionate to the nature and degree of risk in the research shall be given to investigators.
- b. Projects requiring application for annual review and approval for continuation shall be considered for approval by the FRECs. In such cases a "Continuing Review Approval Form" shall be completed and submitted to the FREC.

- c. The FREC shall be responsible for considering projects which constitute a high risk from an ethical perspective, including any risk to the University's reputation such as political, socio-cultural and environmental sensitivity of the research.
- d. The Annual Report to the UREC shall contain details of identified high risk projects.

13. APPEALS

- a. Investigators have the right to appeal against the decisions taken by a FREC. The appeal shall be made in the first instance to the FREC taking the decision. Where the investigators are not satisfied with the outcome of the appeal, they can seek redress at the UREC.
- b. Appeals referred by a FREC to the UREC shall be considered by a sub-committee. This sub-committee shall comprise all UREC members excluding the FREC Chairperson referring the appeal for consideration. Verbal statements from the relevant FREC Chairperson and the project Investigator shall be received by the sub-committee. The sub-committee's decision shall be communicated in writing to the relevant FREC Chairperson and project Investigator.

14. WHISTLEBLOWING AND COMPLAINTS

- a. Suspected misconduct on the part of an Investigator may be reported in accordance with the prescribed procedures. Such 'whistleblowers' shall not investigate or take action on their own but shall observe appropriate procedures.
- b. The whistleblower shall not be liable to any disadvantage or action for doing so. The Whistleblower Act 2006 (Act 720) provides safeguards for the whistleblower against subsequent victimisation by an employer. These safeguards do not extend to malicious acts of whistleblowing. The University is wholly committed to the protection of all genuine whistleblowers irrespective of their status and shall regard any subsequent victimisation as an offence.
- c. Where there is a real concern about disclosing their own identity, the Registrar may be approached confidentially, who shall then consider whether to refer the case on through the normal procedures. The Vice-Chancellor shall have the discretion to consider anonymous allegations.

15. PROCEDURE FOR HANDLING CASES OF SUSPECTED RESEARCH MISCONDUCT

- a. The University regards any allegation of research misconduct as serious and has established a procedure for dealing with such allegations. Investigators shall be required to maintain the highest standards of honesty and integrity. They shall at all times operate within the existing research paradigm and ethically acceptable methodological framework. Research misconduct includes the following:
- i. Conducting research without the appropriate permission.
 - ii. Deception in relation to research proposals.
 - iii. Unethical behaviour in the conduct of research.
 - iv. Using confidentially acquired information without authorisation.
 - v. Deviation from good research practice, which results in unreasonable risk of harm to humans, other animals or the environment.
 - vi. Fabrication, falsification or corruption of research data.
 - vii. Distortion of research outcomes, by distorting or omitting data that do not fit expected results.
 - viii. Deceitful misinterpretation of results.
 - ix. Publication of data known or believed to be false or misleading.
 - x. Plagiarism or dishonest use of unacknowledged sources.
 - xi. Misquotation or misrepresentation of other authors.
 - xii. Inappropriate attribution of authorship.
 - xiii. Fraud or other misuse of research funds or research equipment.
 - xiv. Inciting others to be involved in research misconduct.
 - xv. Collusion or hiding of research misconduct by others.
 - xvi. Failure to comply with relevant legislation, including that relating to health.
 - xvii. Safety, data protection, intellectual property and animal experimentation.
 - xviii. Any other misconduct specifically related to research activity may be dealt with under this procedure.
- b. The University shall investigate allegations of research misconduct fully and promptly, and safeguard Investigators from malicious, mischievous, or trivial allegations.

- c. Procedures for dealing with alleged misconduct by staff or postgraduate research students are referred to in **Section d**.
- d. Persons who have good reasons to suspect misconduct shall report it in confidence to their Heads of Departments, Dean of Postgraduate Studies, Deans of Faculty or Dean of Planning and Quality Assurance. Concerns raised in good faith shall not suffer any penalty. Allegations shall be made in writing, accompanied by any available supporting evidence, and all allegations shall be dealt with using the appropriate University procedure.
- e. In cases where an allegation implicates someone who is not liable to the University's procedures, the Vice-Chancellor shall bring the matter to the attention of their employer or any other appropriate body.
- f. Where the research is funded fully or partially by an outside body, the Vice-Chancellor shall regard the guidance issued by the relevant funding body. The Vice Chancellor shall ensure that any such body is appropriately and promptly informed of the instigation and progress of an investigation and any referral under disciplinary regulations.
- g. In the event of a finding of misconduct involving a person subject to the regulation of a professional body such as the Ghana Institution of Engineers, Ghana Institution of Surveyors, Society of Petroleum Engineers, Society for Mining, Metallurgical and Exploration Engineers and Ghana Institute of Geoscience, the Vice Chancellor shall determine whether it is appropriate to inform the professional body of any finding.
- h. Where the person responsible has published research, especially research to which the misconduct relates, the Vice-Chancellor shall determine whether to inform journal editors of any findings.
- i. If an allegation has been made publicly, the Vice-Chancellor shall determine whether to publicise the outcome of its investigation.
- j. If at any stage an allegation is established to be malicious or mischievous in nature, the matter shall result in disciplinary action against those making the allegation.

16. TRAINING

- a. All members of UREC or FRECs shall be given appropriate training in research ethics at least once a year by the Planning and Quality Assurance Unit.

- b. An induction meeting shall be organised for all new members of FRECs to introduce them to UMaT's policy on ethics and research governance.
- c. The University shall be affiliated to an International Association of Research Ethics Committees.

17. GOOD PRACTICE IN RESEARCH

For the avoidance of doubt, all employees, research students and visiting investigators of the University, including persons holding temporary appointments, conducting research within or on behalf of the University shall observe GOOD PRACTICE IN RESEARCH.

- a. All Investigators have a duty to society, UMaT, their profession and to funding agencies, to conduct research in a most conscientious and responsible manner possible. UMaT shall seek to promote an environment where good research practice is maintained and where, there is adequate mentoring, and supervision at all relevant levels.
- b. It shall be the responsibility of Departmental Heads and Deans of Faculty to convey clearly the standards for research in their departments, and relevant areas, and to ensure adherence to those standards.
- c. Without prejudice to UMaT's ethical codes and guidelines for the conduct of research, Investigators shall observe any appropriate standards of practice set out in guidelines published by funding bodies, scientific societies and other relevant professional bodies, where appropriate.
- d. Investigators shall be honest in respect of their own actions in research and in their responses to the actions of other Investigators. This shall apply to the whole range of research, including experimental design, generating and analysing data, publishing results, and acknowledging the direct and indirect contributions of colleagues, collaborators and others. All University personnel shall refrain from plagiarism, piracy or fabrication of results. Such acts will constitute a breach of this Code and the relevant University disciplinary procedure shall be invoked, where appropriate.
- e. Without sacrificing the need for Investigators to protect their own research interests in the process of planning their research and obtaining their results, Investigators shall be as open as possible in discussing their work with other Investigators and with the public. Once results have been published, where appropriate, the Investigators shall, on request, make

available relevant data and materials to others.

- f. It shall be the responsibility of all Senior Members to ensure that a climate that encourages good practice in research is maintained. The group leader shall create a research environment of mutual co-operation, in which all members of the research team shall be encouraged to develop their skills and where open exchange of research ideas are fostered. Group leaders shall ensure that appropriate direction of research and supervision of Investigators and research students are provided.
- g. Investigators shall state funding sources clearly on their proposal. The ethical implications of the source of funding, including any reputational risks for the university shall be taken into consideration.
- h. Investigators shall keep clear and accurate records of the research procedures followed and of the results obtained, including interim results. Data generated in the course of research shall be kept securely in hard or electronic format, as appropriate.
- i. As a condition of research funding, the results shall be published in an appropriate form, usually papers in refereed journals.
- j. Persons listed as authors on a paper shall be responsible for ensuring that they are familiar with the contents of the paper, and that they can identify their contributions to it. The practice of honorary authorship shall not be accepted. The following principles apply to authorship:
 - i. Authorship credit shall be based on substantial contributions to conception and design, or acquisition of data, or analysis and interpretation of data; drafting the article or revising it critically for important intellectual content; and final approval of the version to be published. Authors shall meet all the above conditions;
 - ii. Acquisition of funding, collection of data, or general supervision of the research group alone shall not justify authorship;
 - iii. An administrative relationship to the investigation shall not qualify a person for co-authorship;
 - iv. The order of the names in a publication shall be decided according to the quality of the contribution, the extent of the responsibility and accountability for the results, and the custom of the discipline;
 - v. The attribution of authorship shall not be affected by whether Investigators were paid for their contributions or by their employment status;

- vi. An author who submits a manuscript for publication accepts the responsibility of having included as co-authors all persons who are entitled to co-authorship, and none who are inappropriate;
- vii. The submitting author shall send each co-author a draft copy of the manuscript and shall make a reasonable attempt to obtain consent to co-authorship, including the order of names. Other contributions shall be indicated in a footnote or an "Acknowledgements" section, in accordance with the standards of the discipline and the publisher.
- k. In all aspects of research, the contributions of formal collaborators and all others who directly assist or indirectly support the research shall be properly acknowledged. This applies to any circumstances in which statements about the research are made, including provision of information about the nature and process of the research, and in publishing the outcome. Failure to acknowledge the contributions of others shall be regarded as unprofessional conduct.
- l. Principal Investigators and other named investigators shall take all reasonable measures to ensure the accuracy and completeness of information which is contained in applications for funding.
- m. Principal Investigators and other named investigators shall take all reasonable measures to ensure compliance with institutional, legal, ethical and moral obligations in managing projects.
- n. Anyone involved in any way in the conduct or management of research shall identify and declare any conflicts of interest, whether legal, ethical, moral, financial, personal or other nature. The various research ethics committees at UMaT shall make decisions and conduct their oversight responsibilities in an independent manner, free from bias and undue influence. Committee members shall disclose any relationship, interest or other circumstances, which could reasonably be perceived as creating a conflict of interest, including the following:
 - i. Personal Relationships: The member has contact at personal level with the Principal Investigator or key personnel of a research protocol under review by the FRECs;
 - ii. Relationship to the research study: The member (his/her spouse or immediate family member) is the Principle Investigator or Co-Investigator of the research protocol under review;

- iii. Business relationship or Affiliation: The member serves as a trustee, director, officer, owner or partner of a for-profit entity that could be affected by the outcome of the research protocol under review.
- iv. Financial Interest: The member has a financial interest that could be affected by the outcome of the research protocol under review. Included in the definition of financial interest are equity interests e.g. stock or other ownership interests, payment or expectation of payment derived from intellectual property rights (e.g. patent royalties); and payments received from a for-profit entity for consulting or other services.
- o. The University takes seriously any allegation of research misconduct and has established a procedure for dealing with such allegations. Investigators shall maintain the highest standards of honesty and integrity. Investigators shall at all times function within the existing research paradigm and ethically acceptable methodological framework.
- p. Principal Investigators shall ensure the safety and well-being of staff working on their projects. They shall assess potential risks and harm and shall not require any Investigator to undertake research that is likely to expose them to physical or psychological harm. All Investigators shall also have a responsibility to consider their own safety and well-being and shall raise any concerns with their Principal Investigator, the Dean of the Faculty or the Pro Vice Chancellor.
- q. UMaT considers the commercialisation of its knowledge base and technology transfer as an integral part of the University's responsibility to the broader community. The University is committed to encourage research and development which may lead to inventions, products or business ideas that can be exploited commercially and to unlock the value of its knowledge base to the benefit of both inventors and the broader community. Investigators shall familiarise themselves with the University's appropriate Policy in respect of exploitation of Intellectual Property and ensure that all research related activities that may give rise to issues surrounding intellectual property are in compliance with this policy.

18. RESEARCH INVOLVING HUMAN PARTICIPANTS

Ethical principles and values such as issues of consent, confidentiality, data protection and minimising risk of harm or discomfort, fair selection of research participant and rights to privacy among others shall govern research involving humans. All health related research shall comply with the Public Health Act 851 of 2012. For the avoidance of doubt all health related research involving interaction with human participants, the use of potentially identifiable personal records, information or tissue specimens, and/or human progenitor or stem cells shall be approved by UREC before the research study commences.

The principles governing the ethical clearance shall be:

- a. Relevance to the needs and interests of the community in which the research is conducted;
- b. Valid scientific methodology;
- c. Involvement of UMaT Staff in the research;
- d. Health related research;
- e. Adequate information to participants on the purpose of the research and how the results shall be disseminated;
- f. Thorough risk/benefit analysis; and
- g. Assurance of thorough and effective coordination of research in communities.

19. RESEARCH INVOLVING ANIMALS

The term “Animals” in this framework policy refers to all animals having the power of sense perception or sensation. The use of animals in scientific research can only be justified if the benefits to both humans and animals outweigh the potential harm to the animal subject. All research and teaching involving animals shall be approved by UREC before the research commences, to ensure that a formal evaluation of the potential harm/benefit equation is undertaken. UREC shall be responsible for overseeing and monitoring the care and use of all laboratory and other animals kept for teaching and research purposes at, or under the auspices of UMaT.

Justification for causing psychological or physical distress, illness or pain to animals shall not be based on any explicit or implicit assumption that non-human animals experience these conditions in qualitatively different ways to humans. All animal research conducted under the auspices of UMaT

shall uphold the following principles for humane animal research:

- i. Replacement of so-called “sentient” animals wherever possible, with “non-sentient” research models or systems in order to eliminate the use of animals that can experience unpleasant sensations.
- ii. Reduction of the numbers of animals in experiments by design strategies that facilitate use of the smallest number that will allow valid information to be obtained from the study.
- iii. Refinement of animal sourcing, animal care practices and experimental procedures to eliminate physical and psychological distress within limitation imposed by the objectives of the research.

20 RESEARCH INVOLVING ENVIRONMENT AND BIO-SAFETY

Care shall be taken to ensure that all research is carried out with respect for impact on the physical, biological and spatial environment. All Investigators undertaking research with bio-hazardous material that is potentially harmful to humans, animals or the environment shall familiarise themselves with appropriate bio-safety and containment procedures. All research involving genetically modified organisms or research that pose a risk to the natural environment or the Investigator and supporting staff, shall be submitted to the UREC for review and approval. For the avoidance of doubt this shall include, research involving organisms that are pathogenic to humans and/or animals, research involving radiation, and research which may be potentially harmful to the natural environment.

21. DATA CONFIDENTIALITY AND ACCESS

- a. Investigators shall ensure appropriate open access to primary data resulting from publicly funded research after its current use in research. Data relating to identifiable individuals shall be held in accordance with the principles of data confidentiality legislation and any guarantees given to data subjects. Such data shall be anonymised before it is made publicly available and Investigators shall place an embargo on access when anonymity and confidentiality cannot be guaranteed.
- b. Investigators shall decide what constitutes ‘primary data’ in each research project. This shall normally be an achievable data set, but may also include laboratory notebooks, completed questionnaires, video and audio files, and interview transcripts. Research notes shall not normally constitute

primary data for the purposes of this policy.

- c. The primary research data shall be held securely for a period of ten years after the completion of a research project, or for the period required by a funding agency. The University has an obligation to ensure that appropriate storage facilities are available. Non-current primary data from research funded at the University shall remain the bona fide property of the University after the resignation of the researcher.
- d. Publications arising from publicly funded research shall be available through a system of open access wherever possible. Articles shall be deposited in the University repository in accordance with current guidelines. Other research reports shall be available in open access form unless prevented by commercial or official secrecy requirements.

22. KEY DEFINITIONS

Word/Term	Definition
Benefit	The advantage, privilege or profit gained through a contract where payment of money or the giving of gifts is applied including the impacted outcome of the research to the participants involved.
Confidentiality	The rules or promise that limits the access or places restrictions on types of information obtained through an interaction with participants of a research.
Conflict of Interest	A conflict of interest is a situation in which the individual's professional obligations and his or her private interests are incompatible such that it creates a possibility that professional judgment or actions regarding a principal interest will be overly influenced by a minor interest. This may lead to actual misconduct when consideration of personal gain or financial influence may compromise an individual's judgment and actions in the performance of his or her primary responsibilities.

Word/Term	Definition
Human Subjects	Living individuals about whom a research investigator (whether a professional or a student) obtains data through intervention or interaction with the individual or from individually identifiable information for investigation of a specific question which incorporates data collection and analysis. The process may include the use of surveys, questionnaires, interviews, focus groups or participant observation.
Informed Consent	This is the voluntary agreement to participate in research and involves the process in which the subject has an understanding of the research and its risks. Informed consent is essential before enrolling a participant and ongoing once enrolled in a research. In order to give informed consent the individual must have adequate reasoning abilities and must be in possession of all the relevant facts at the time of giving consent.
Investigator	An individual who devotes himself/herself to the systematic investigation or inquiry.
Minor	A person under the legal age of being an adult.
Research	A systematic investigation into and study of materials and sources in order to establish facts and reach new conclusions designed to develop or contribute to knowledge.
Research Protocol	Research protocol is a detailed plan of a study; it should include the project title, project summary, project description, ethical consideration, gender issues and references.
Risk	The potential that a chosen action or activity will lead to an undesirable outcome that may affect participants or Investigator of a study.
Special Protection	The basic principles governing the ethical conduct of research involving human subjects, these include the capacity to consent, freedom from coercion and the comprehension of risk involved.

Word/Term	Definition
Standard Operating Procedure (SOP)	This is the detailed written instructions that have been put in place to achieve uniformity of the performance of a specific function by an institution.
Vulnerable Population/Person	A person without the capacity to make informed decision based on the mental or emotional ability. A vulnerable person may include children depending on their age and some category of adults. They may be susceptible to exploitation or significant harm.

Appendix A: Reporting Relationship of Research Ethics Committees

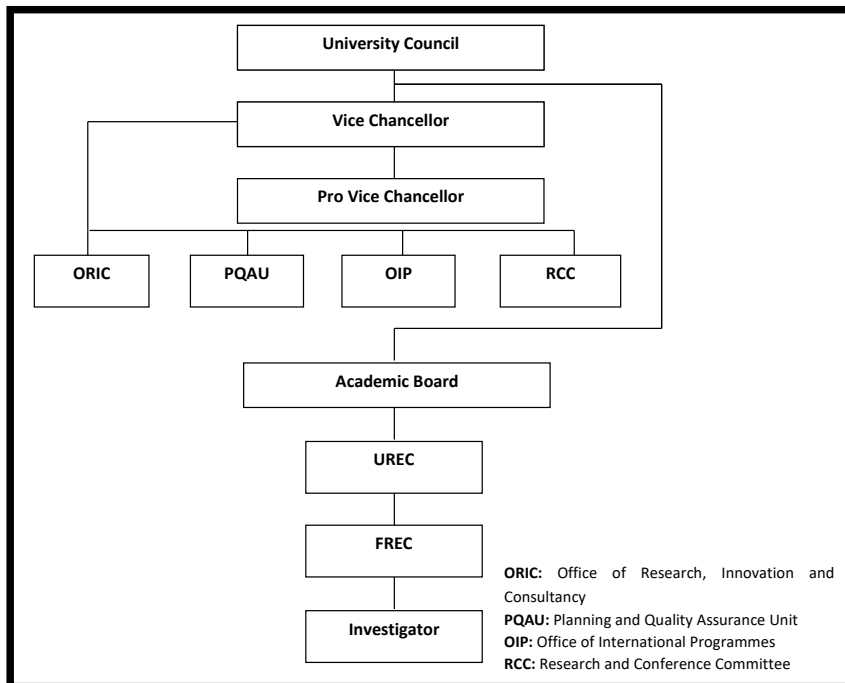


Fig 1: Organisational Structure of Research Ethics Committee at UMaT