



**AHMADU BELLO UNIVERSITY,  
ZARIA, NIGERIA**

**R E S E A R C H  
P O L I C Y**

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## **1.0 RESEARCH POLICY**

### **1.1 Preamble**

Research refers to the original investigation undertaken in order to contribute to knowledge and understanding and, in the case of some disciplines, cultural innovation or aesthetic refinement. It typically involves enquiry of an experimental or critical nature driven by hypotheses or intellectual positions capable of rigorous assessment by experts in a given discipline. A researcher therefore is that individual undertaking this investigative exercise.

The Ahmadu Bello University (ABU) recognizes research and research-led teaching as primary responsibilities of its academic staff. It places value on fostering, publishing, and disseminating research of the highest international quality and University research should serve to develop intellectual independence and promote community learning.

The University must ensure that it maintains the highest ethical standards. Dishonesty of any kind in research is unacceptable. Such dishonesty damages the search for truth, the individual(s) themselves, their colleagues and the general community. The University cannot permit the integrity of its research programmes to be placed in doubt.

The ABU Research Policy is a university wide policy and these guidelines should be seen as a framework for sound research practice and for the protection of individual research workers, including both staff and postgraduate research students, from possible misunderstandings. This policy sets the framework for the development and implementation of research policy at the ABU within which academic staff carry out their required research obligations, and in which graduate students can engage and be supported in their research.

### **1.2 Goals and Objectives**

The University aims to carry out research and creative work of a consistently high international standard that will contribute to the advancement of knowledge and understanding, and to the national goals of innovation, economic development, social development, environmental sustainability and the fulfilment of its obligations.

The Objectives of the Research Policy are:

- (1) Promote the role of the University as a primary source of basic research;
- (2) Utilise the skills of the University to undertake all forms of research that contribute to the advancement of knowledge, cultural and social development, preservation of the environment and economic growth;
- (3) Develop portfolios of research that are of regional, national and international relevance and build on the strengths of the University and/or create strengths which the University has identified as a priority;
- (4) Maintain cohesive plans and effective management policies and practices that foster excellence, support individual, project and programmatic research,

- (5) Work to increase external funding and support for research and creative work;
- (6) Protect, develop and exploit the intellectual property developed in the University.
- (7) Promote research based teaching and enhance scholarship through clearly linking research, professional practice, creative work and teaching;
- (8) Place a high priority on excellence and innovation in creative work, research, research training and the dissemination of research in the professional development, recognition and rewards systems of the University;
- (9) Recruit increased numbers of postgraduate and post-doctoral students and provide them with research supervision, infrastructure and support of the highest possible quality;
- (10) Develop and maintain an infrastructure that can sustain and promote high quality research and that maximises interfaculty co-operation and synergies; and
- (11) Promote research alliances and collaborative partnerships with other tertiary institutions, research institutions, public agencies and the private sector.

### **1.3 Structure of Research**

Researches in ABU are conducted at 4 levels viz.:

1. Undergraduate students-projects
2. Postgraduate students research.
3. Individual staff research
4. Collaborative/interdisciplinary research

#### **1.3.1 Research Strategic Plan**

The Strategic Research Plan sets out in broad terms how ABU will attain its goal of becoming a “research-driven” university. To be “research-driven” implies that:

- our academic staff will be research active, and will produce nationally and internationally recognized work within and across disciplines
- we will publish our research in leading journals
- we will develop postgraduate research and publication
- teaching and learning will be research driven

Research Strategic Plans have been proven to be achievable by the application of the under listed concepts:

#### **1. Qualifications, research output and research quality**

The Plan requires most academic staff members to be research-active and sets out the defining criteria. Targets for Masters and PhD completions are set. The peer standing and public profile of our research staff will be raised.

#### **2. Challenging, relevant and innovative research**

Broad guidelines for a balance between basic and applied research will be developed. Basic research will be respected and encouraged. Intellectual Property management tools will be enhanced and commercialization of marketable intellectual property will be encouraged.

### **3. Areas of Excellence**

Individual researchers form the backbone of the University's research system. Identification of areas of comparative advantage for ABU needs to be undertaken. This is currently not the case hence the notion of "jack of all trade, master of none". This concept should be dropped.

### **4. Research Partnerships for Strategic Purposes**

1. A manageable number of focused international partnerships are to be developed in the specified areas of excellence.
2. More tightly-focused research partnerships with the private sector, NGO's and Government agencies will be created.
3. An expansion in inter-personal international collaborations should be encouraged, to include bringing more distinguished scientists and postdoctoral fellows to ABU.

### **5. Research environment, organization and systems**

The capacity of the Directorate of Academic Planning & Monitoring, ABU's Business Enterprise and the Development Office to support achievement of the foregoing goals will have to be enhanced in order to provide better support for researchers, with a strong ethos of client support and values added.

A research equipment replacement strategy will be implemented and the capacity of the Library to offer adequate support to researchers would have to be reviewed.

### **6. Long term research funding and research intensiveness**

This will be secured by the following measures:

- expanded external fundraising
- replacement of ageing research equipment
- attracting more and better postgraduates
- expanding the research mentoring of younger academics by more experienced staff

#### **1.3.2 The Research Committee**

The ABU Research Committee (ABURC) is the committee of Senate responsible for setting research policy, the management and administration of such policies, and advising Senate on research-related matters. The Research Committee is responsible for producing this Research Policy Manual.

## **1.4 Research Management**

Advice and policy in research matters is coordinated through a number of bodies and committees, including the following:

- (a) The University Research Committee, chaired by the DVC (Academic), is the University's highest research management body.
- (b) Postgraduate School and Faculties are required to establish research committees to support the research activities of their staff and postgraduate thesis/dissertation students.

#### **1.4.1 Supervision of Research Students/trainees**

- a. The Head of Department or Academic Unit should ensure that supervision of each research student/trainee (including Undergraduate, Graduate and early career postdoctoral staff) is assigned to specific, responsible and appropriately qualified supervisor(s), and that the ratio of research students/trainees to supervisors is low enough to assure effective intellectual interaction and effective oversight of the research at all times.
- b. Supervisors or Heads of Schools or academic units should provide each research student/trainee with written material on applicable government and institutional guidelines for the conduct of research, including those covering ethical requirements for studies on human and animal studies as well as requirements for confidentiality.
- c. Supervisors should be obliged to provide guidance in all matters of good research practice. This includes discussing with the student, at the outset, relevant issues of research conduct and ethics, and intellectual property, and referring any problems/queries to the Head of School for consideration.
- d. Supervisors must ensure, as far as possible, the validity of research data obtained by a student under his/her supervision.

#### **1.4.2 Peer Review**

- a. The University shall encourages all researchers to participate in peer review because this provides expert scrutiny of a project, and helps to maintain high standards and encourage accurate, thorough and credible research reporting.
- b. Participants in peer review should act fairly and in a timely manner, should keep confidential and not disclose the content or outcome of any process in which they are involved, should declare conflicts of interest, and should ensure that they are informed, and comply with the criteria to be applied.
- c. Researchers whose work is undergoing peer review must not seek to influence the process or outcomes.
- d. Supervising researchers have a responsibility to assist trainee researchers, including students, in developing the necessary skills for peer review and understanding their obligation to participate.

#### **1.4.3 Research Funding**

The University needs to have a strong central part of its scholarly effort financed in a stable manner in order to enable it to plan wisely and to keep its research program in balance and harmony with the changing needs of society

### *Sources of Research Funding*

- a. Appropriations to the University - in support of research by the Government.
- b. Research Grants and Contracts: Agreements for such grants and contracts may be entered into with an agency of the Federal, State or Local Government, or with a private industry or agency.
- c. Developmental Grants: These may be derived from foundations, from business and industry, or from individuals.
- d. University/Industry Cooperative Research Programs
- e. Foundations: Many public and private foundations and not-for-profit corporations provide support for research and scholarly projects.
- f. Scholarship and Fellowship Funds

#### **1.4.4. Research Centre's and Institutes**

The specialized Research Institutes in ABU serve as vehicles for engaging with other research institutions and industry and facilitate interdisciplinary and multidisciplinary relationships. However, the University needs to establish full synergy between them and the Academic Departments. For example, between the Institute of Agricultural Research (IAR) and the Department of Agronomy. This synergy would raise the research profile of the University, focus strengths in areas where there is (or the University wishes to develop) a concentration of research excellence, including areas of applied research, and to maximize external research funding. As such they help position and promote the University's areas of research excellence and build the University's research reputation.



## 2.0 RESEARCH POLICY MONITORING AND GOVERNANCE

### 2.1 Research Ethics Policy

#### 2.1.1 Overview

Ethics refers to a system of moral principles governing the appropriate conduct of a person or group. Hence Research Ethics refers to an appropriate conduct of researchers and scholars in the performance or relationship with each other in the course of scholarship and research.

Ethical misconduct in research is any "fabrication, falsification and plagiarism in proposing, conducting or reporting research or other scholarly activities." Fabricating research findings refers to making up fictional results, while falsifying research results refers to altering, misrepresenting, or selectively reporting findings. Each of these acts violates the integrity of the research process and constitutes a serious breach of accepted ethical standards. Ethical research practice therefore requires that researchers at all stages of the research process conduct their research in an open and honest manner and make every effort to ensure the accuracy of their findings.

**Plagiarism** is a form of ethical misconduct in research and consists of the intentional or unintentional "use of the words, ideas, diagrams of publicly available work without appropriately acknowledging the sources of these materials." Thus, any use of the words, phrases, ideas, or work of others in any form without acknowledging the original sources constitutes plagiarism.

The ABU Policy on Research Ethics is aimed at protecting the integrity of the University and staff in the areas of research and scholarship.

#### Ethical Guidelines

1. The University hold researchers and scholars undertaking various researches within affiliated to or under the supervision of the University responsible for upholding the following principles:
  - a. Recognizing the substantive contributions of collaborators and students; using unpublished work of other researchers and scholars only with permission and with due acknowledgement; and using archival material in accordance with the rules of the archival source;
  - b. Obtaining the permission of the author before using new information, concepts or data originally obtained through access to confidential manuscripts or applications for funds for research or training that may have been seen as a result of processes such as peer review;
  - c. Using scholarly and scientific rigor and integrity in obtaining, recording and analyzing data, and in reporting and publishing results;
  - d. Ensuring that authorship of published work includes all those who have materially contributed to, and share responsibility for, the contents of the publication, and only those people; and
  - e. Revealing to sponsors, universities, journals or funding agencies, any material conflict of interest, financial or other, that might influence their decisions on whether the individual should be asked to review manuscripts

2. The University hold Sections and individuals that administer University or Department guaranteed funds responsible for:
  - a. Promoting integrity in research and scholarship; and
  - b. Investigating possible instances of misconduct in research or scholarship, including: imposing appropriate sanctions in accordance with their own policies; and informing the appropriate authorities of conclusions reached and actions taken.
3. Researchers should reveal to sponsors, collaborating universities, journals or funding agencies, any material conflict of interest, financial or other, that might influence their decisions on whether the individual should be asked to review or applications, test products or be permitted to undertake work sponsored from outside sources.

### **Research Compliance**

"Research Compliance" refers to the process by which the supervising authority, in accordance with laid down laws and regulations, certifies that research activity is conducted in a legal and ethical way while "Clearance" is the process by which the supervising authority proves this compliance.

A thesis/dissertation represents the culmination of years of academic preparation and uniquely expresses a student's training, skills and ideas. It therefore deserves the student's greatest effort and, as with all scholarly work, demands compliance with the highest ethical standards.

### **Publication and Authorship**

1. Authorship of publications should include and be limited to the individuals who have made a significant intellectual contribution to the research, including students.
2. Reviewers for articles submitted to learned journals should carry out their duties in a timely manner, declaring any conflicts of interest and agreeing to abstain from such situations.
3. Recognize the substantive contributions of collaborators and students as appropriate; Use unpublished work of other researchers and scholars according to the usual conventions (including due acknowledgement).
4. Use scholarly and scientific rigour and integrity in obtaining, recording and analysing data, and in reporting and publishing results.
5. Ensure that authorship of published work includes all those who have materially contributed to, and share responsibility for, the contents of the publication, and only those people.
6. Where young graduates, assistants or postgraduate students are engaged as part of a major research work it should be made clear matters such as the ownership of data, authorship, expected time commitments, access to research funds, remuneration of assistants, space arrangements, and project phases and deadlines etc.

## **Research Concept and Data Collection**

1. All data will be collected and used in a manner consistent with the ethical standards of this policy to be amended to reflect any changes in policy from time to time, and researchers will be notified of the changes.
2. All research reports and articles must contain sufficient data to allow for experiments and analyses to be reproduced.

## **Financial Accountability**

1. Any member of staff, postgraduate or undergraduate student funded in parts or whole by the University or guaranteed by the department shall disclose any such monies available for the research and present a detailed report on expenditure of the said funds to the Head of Department through the Departmental Research Committee.
2. It is the responsibility of the lead researcher to ensure judicious use of funds made available for the research project.

### **2.1.2 Mandate**

Ensuring a high standard of ethical practice in research is primarily the responsibility of researchers, whether departmental staff, or students.

#### **1.1.1 University Mandate**

The University has a collective responsibility to ensure and enable ethical research and to hold each researcher accountable for meeting these standards.

#### **1.1.2 Research Committee Mandate**

The University Research Committee shall provide the framework and enabling guidelines for the functioning of the Research Ethics Subcommittee.

The University/Complex/Faculty Research Committee will evaluate and comment on the merit and scholarly standards of a research proposal (where University/departmental or department guaranteed funds are sought for) to the extent that these elements are relevant in assessing ethical standards. General merit and scholarly standards are reviewed by the Research Committee (when assessing projects for internal funding competitions) or by external funding agencies.

#### **1.1.3 Research Ethics Subcommittee Mandate**

There shall be in place a University Research Ethics Subcommittee (ABURES) with the mandate and authority to review, approve, disapprove, or modify research proposals to meet ethical standards, and to engage in ongoing supervision and education of researchers to ensure that such standards are understood and maintained.

Specifically, ABURES is to:

1. Develop and implement policies and procedures for ethical research
2. To review all staff and student research (including class projects) especially those involving animals or human participants for conformity to established guidelines.
3. To educate all researchers and support personnel affiliated with the College about the ethical issues, principles, standards, policies and procedures to which they must adhere.
4. To maintain a bibliography on the subject; and ensure that all researchers and support personnel are up-to-date on policies, issues, and procedures in research ethics.

### **2.1.3 Membership of ABURES**

1. Chairperson, appointed by the Vice Chancellor/Senate
2. Chairpersons, Complex/Faculty Research Committee.
3. 6 members of Departmental Research Committee.

### **2.1.4 Meetings**

1. The Chairperson will call a meeting at least once monthly.
2. A quorum will represent 51% of membership. If a quorum is not attained, the meeting shall be postponed and rescheduled.
3. Decisions at meetings shall as much as possible be reached by consensus.
4. The Chairperson or a majority of members may request for an emergency meeting should the need arise.

### **2.1.5 Modus Operandi**

#### **Policies and Procedures**

1. The person responsible for directing the project (e.g., instructor or researcher) will fill out an ABURES ethics review form in triplicate and present it to the Committee prior to project initiation.
2. Low-intensity projects must be submitted **at least five days** prior to initiation, and high intensity projects **at least two weeks** prior to initiation. The ABURES may, at its discretion, invite the Project Director/Leader to attend ethics deliberations and/or provide further details.
3. The ABURES will communicate one of the following decisions to the project director:
  - i. Acceptable:* Project fulfils ethical standards as proposed.
  - ii. Revision needed:* Specific problems have been noted and need to be remedied. Resubmission of the ethics form is required once appropriate modifications have been made.
  - iii. Unacceptable:* The ethical difficulties associated with the project are such as to leave doubt whether acceptable redesign is possible.

4. In no case will any PROJECT domiciled, supervised or in collaboration with the University be initiated without an "acceptable" ruling from the ABURES.
5. ABURES will maintain a file of copies of proposals, review comments, and actions on expedited and full reviews.
6. ABURES will submit an annual report listing the submissions and actions taken to the Office of the Vice Chancellor. These records will be kept after project completion for at least two years. These reports are accessible to relevant members of the Research Committee, the Research Director of the project, and representatives of any applicable external funding agency.
7. If a member of the ABURES is directing or supervising (in the case of student projects) a project under consideration, that member will remove herself/himself from the ethics review process. If the project requires full ABURES reviews, the Committee will find a replacement to participate in the review process

### **Levels of Review**

The Research Ethics Subcommittee distinguishes two levels of research ethics review:

- a. **Expedited Review** For low-intensity research projects (defined below), including most student projects, ethics review will occur through a subcommittee of the ABURES. This subcommittee consists of at least two, and normally all three, of the primary members of the ABURES.

*Low-intensity projects involving animal subjects* are defined as projects in which:

- i. Animals are not subjected to any pain or distress. Examples would be observational studies of commonly available animals in the laboratory or in the field.
- ii. Animals are not subjected to any form of restraint, deprivation of food or water.
- iii. No invasive procedure is undertaken.
- iv. The study does not exceed 3 months duration.

- b. **Full ABURES Review** High-intensity project (defined below) proposals will be reviewed by the primary and relevant secondary members of the ABURES.

*High-intensity projects* are defined as projects that involve invasive procedures, and in general any project which does not meet the criteria for low-intensity projects outlined above.

### **Supervision of Ongoing Research**

The research supervisor of a project holds primary responsibility to ensure that ethical principles are met on an approved project for the duration of the project. The supervisor is accountable to ABURES, which has the authority to recommend termination of any project that does not meet ethical standards.

In the case of student projects, it is the responsibility of the supervising staff member to ensure that ethical criteria are met. ABURES has the authority to request a report on any student projects.

For all other projects, the researcher must propose a means by which the ABURES can continue to monitor the project, including the nature and frequency of reports on the project. At a minimum, project directors are expected to submit an annual status report [and a final report?]. The ABURES may, at its discretion, request more frequent reports as part of the conditions for project approval.

All project proposals must contain a projected date for project completion. The ABURES must also be notified, in writing, when a project is completed. Any changes to a research project, including an extension of the original date of completion, must be submitted for ABURES approval prior to implementation of those changes.

### **Collaborative or External Research Engagement**

ABU researchers (staff and students) who engage in projects involving other institutions, organizations, countries or jurisdictions, must obtain ethics approval from ABURES as well as from the other agencies involved in the project.

#### **2.1.6 Complaints Sanctions and Appeal**

- (i) Where any person, including a non-University member, has any concern/s that an academic staff member or other member of the University may have committed Misconduct in Research, the following procedures shall apply:
  - (a) Such a person shall be referred to as the Complainant;
  - (b) The Complainant should raise his or her concern(s) through:
    - the Head of Department of the relevant Faculty; or
    - if the involvement of the Head of Department is inappropriate, with the Dean of the relevant Faculty; or
    - if the involvement of both the Head of Department and the Dean is inappropriate, with the Vice Chancellor who may then appoint an ‘Ombudsman’ to undertake the preliminary assessment.
  - (c) A Complainant who raises a concern/s should be given a copy of these Guidelines;
  - (d) The Complainant should be advised that any information supplied by him or her in relation to another person will be personal information in accordance with the Privacy Act and subject to this legislation;
  - (e) The University will protect the confidentiality of the Complainant as far as possible and within legal constraints.

Allegations of scholarly misconduct, e.g., of the mistreatment of animals, of deviating from approved ethical guidelines for a research project, of falsification of experimental data, of failure to disclose conflict of interest, or of misrepresentation of authorship, must be presented in writing to the Chairman of ABURES who will deal with the complaints.

In particular, the Committee will:

1. Receive allegations of misconduct in research and scholarship.
2. Conduct and document appropriate enquiries within thirty days of receipt of the allegation.
3. Protect the privacy of the person(s) accused and of the person(s) making the allegations as far as is possible given the need for due process in pursuing the enquiry.
4. Allow the accused person(s) due process and full opportunity to respond to the allegations throughout the enquiry through mechanisms consistent with due process and natural justice.
5. Decide whether or not there has been misconduct.
6. Determine the actions to be taken as a result of conclusions reached, including: any sanctions imposed; any actions taken to protect or restore the reputation(s) or credibility of any person(s) wrongly accused of, or implicated in, misconduct in research, including procedures to ensure that if the charges have been dismissed copies of documents and related files provided to third parties have been destroyed; any actions taken to protect the person(s) deemed to have made a responsible accusation;
7. Inform the accused person(s) of the results of the enquiry and of the actions that have
8. been decided upon.
9. Prepare a report on the above and submit it to the appropriate authority or funding agency.
10. Anonymous allegations of misconduct will not be entertained unless accompanied by compelling evidence of the misconduct.

### **Procedure for Investigation of a Complaint**

1. The investigation will be carried out by ABURES,
2. The complainant will be asked to present her or his complaint in written form, adding whatever supporting documents he or she may wish to include. This material will be made available to the member in question at least two weeks before any hearing, and to all members of the committee.
3. The accused member in question may respond to this material in writing. This response will be made available to the complainant and to the committee members, if possible, at least three days before the hearing.
4. The hearings will not be open to the public. It will be an informal hearing, but all efforts will be made to satisfy the requirements of natural justice. The committee will hear statements from the complainant and the accused member, in each other's presence.
5. Both parties will then respond to questions from members of the committee. The accused member may bring counsel if he or she so desires.
6. Both the complainant and the accused may call up witnesses in support of their case. These witnesses will be heard by the committee, and committee members will have an opportunity to question the witnesses.
7. The committee will deliberate and formulate a report and recommendations to the Vice Chancellor.

8. The committee can decide that there is no basis for disciplinary action, in which case no recommendation is made to the Vice Chancellor, and the accused is considered to be in good standing.
9. Recommendations to the Vice Chancellor can include various disciplinary measures or, in extreme situations, a recommendation to terminate employment.
10. The report and recommendations will be communicated to the accused and all who were a party to the process will be informed that no wrongdoing was found.
11. Committee members are to maintain confidentiality with respect to deliberations, conclusions, and recommendations.

### **Appeal and Appeal Procedure**

1. Appeals of a ABURES decision will involve, first, moving from an Expedited to a Full ABURES Review, if the original proposal underwent expedited review.
2. If the project proposer is not satisfied with the ABURES decision after a Full Review, she or he may submit a written appeal to the Vice Chancellor with a copy to the of ABURES.

The Vice Chancellor will consider the appeal after ensuring that its membership, augmented if necessary, must have broad expertise in the methods or in the areas of research in question, and at least one member must be knowledgeable in ethics. The appellant project proposer and the Chair of the ABURES will be invited to the hearing on the matter.

### **Sanctions**

Recommendations to the Vice Chancellor can include various disciplinary measures such as refunding monies or, in extreme situations, a recommendation to terminate employment or admission of the staff or student respectively.



## 2.2. Policy on Use of Human Subjects/Participants in Research

### 2.2.1 Overview

All projects involving the use of human subjects, including questionnaires, must be reviewed by the University Subcommittee on the Use of Human Subjects ABUSRHSP in Research regardless of whether or not the proposal is funded. This Committee will assure that appropriate facilities and procedures will be provided which respect the "right to privacy" of the individual and protect him or her against physical or stress injury. This applies to all research project proposals (grants and contracts) regardless of the granting agency or institution to which they are being submitted for funding as well as those supported by University funds. Committee review of the proposal should be completed before submission to the granting agency. It is appropriate for the faculty or staff member to consult the Committee of the Use of Human Subjects in Research or the Office of Vice Chancellor for Research during preparation of an early draft of the proposal, at which time concise and current details concerning use of human subjects can be obtained.

### Functions of ABUSRHSP

It is the University's policy that all staff or student projects, researches and coursework sessions, which involve human participants, must receive the approval of the ABUSRHSP prior to commencing the research. The function of the ABUSRHSP is

- (1) To review all proposed research and teaching projects involving human participants,
- (2) To ensure compliance with ethical standards,
- (3) To provide advice and assistance with regard to ethical standards to anyone undertaking such research or teaching, and
- (4) To provide an avenue for handling complaints or queries made by any interested person.

In undertaking these functions, ABUSRHSP is not only concerned with the welfare and interests of research participants, but also with that of researchers and the general interests of the University where appropriate.

It should be noted that approval from the ABUSRHSP is required for **research** involving questionnaires, interviews and surveys (including web based surveys) within and outside the University, **before** the research commences.

Researchers should also note that some research which does not involve human participants directly (for example, research involving particular types of human cell lines or other human tissue) may require approval by ABUSRHSP. New Zealand law is currently undergoing change around these requirements.

### 2.2.2 Guiding Principles

The guiding principles for research in human participants/subjects in the Ahmadu Bello University are designed to ensure good, desirable or acceptable conduct in such researches. The primary purpose of the principle is to protect the welfare and rights of research participants/subjects and to reflect the basic ethical values of respect for persons, beneficence and justice.

### **Core Ethical Principles**

Four universal principles constitute the basis for ethics in especially human research viz.:

1. The principle of Non-Maleficence: Research must not cause harm.
2. The principle of Beneficence: Research should make a positive contribution towards the welfare of people or the participants/subjects.
3. The principle of Autonomy: Research must respect the rights and dignity of participants.
4. The principle of Justice: Fair distribution of the benefits and risks of research amongst people.

### **Rights of Participants**

1. Participants must be valued as persons in their own right worthy of protection and respect.
2. Informed and understood consent obtained.
3. Informed on anticipated findings use.
4. Relevance of research to participants must be clarified.

### **Research Involving Special Groups**

Research in these groups requires special consideration i.e.:

1. Children
2. Prisoners
3. Students.
4. Pregnant women
5. Elderly
6. Persons in dependent relationships
7. Mentally impaired persons
8. Vulnerable communities

#### **2.2.3 Informed Consent in Research Engagement**

Any research that involves other people requires the free and informed consent of participants, both prior to and throughout the project. Researchers must inform participants, in writing or verbally, as appropriate, of all pertinent information regarding the project, including potential physical and psychological risks, however minimal, to the participant. This information must include procedures for ensuring:

1. Confidentiality and anonymity, the use to which participants' responses or data will be put, and who will have access to this information.

2. Such consent must be obtained from participants in writing, unless cultural or methodological considerations deem otherwise. In such cases, the researcher must document how free and informed consent was obtained.
3. This consent must be unforced. Threats of penalties for refusal to participate or withdrawal part way through a project are unacceptable. Rewards for participation must not provide undue inducement or influence on a participant's decision to participate or withdraw.

ABUSRHSP may approve a project, which does not include free and informed consent if all of the following criteria are met:

1. the research involves no, or minimal, risk to participants
2. the lack of free and informed consent is unlikely to adversely affect the rights and well-being of the participants
3. the research could not be reasonably or effectively carried out if free and informed consent were obtained
4. participants will, whenever possible, be given full disclosure of pertinent information after participating, including any debriefing, reassurance, reestablishment of trust, and other follow-up as necessary to protect their welfare and their rights

The concept of an informed Consent should take into cognizance:

1. Areas where community consent may be required.
2. Feedback on research findings
3. Non exploitation
4. Privacy, anonymity and confidentiality
5. Full release of necessary information
6. Minimization of risk and maximization of benefits
7. The obligation to compensate for research related injuries and costs
8. Distributive justice.
9. Inclusion/exclusion criteria.
10. Conflict of interest
11. Safety monitoring.
12. Ownership, storage and transfer of biological materials in collaborative research.

#### **2.2.4 Duties of ABUSRHSP**

5. To advise on the principles and guidelines for animal use and welfare in the University, including acquisition, transport, production, housing, care, use and disposal of animals.
5. To monitor the development and management of animal holding and breeding in the University to ensure that the appropriate standards of these facilities are maintained.
6. To consider the ethical implications of all proposed research and teaching activities involving the use of animals, and to approve only those which conform to the minimal universal standards.
7. To monitor approved activities for continued conformance with the policy.
8. To maintain records of all applications for approval and the decisions of ABUSAUC, and to make appropriate information from these records

9. To report annually on the activities of the Subcommittee.

#### **2.2.4 Membership of ABUSRHSP**

- Chairperson, appointed by the Vice Chancellor
- Chairperson, relevant Departmental Research Committee.
- Representative, Deans of Humanities, Arts and other relevant Faculties.
- A lawyer.

#### **2.2.5 Meetings**

1. The Chairperson will call at least a meeting monthly.
2. A quorum will represent 51% of membership. If a quorum is not attained, the Meeting shall be postponed and rescheduled.
3. Decisions at meetings shall as much as possible be reached by consensus.
4. The Chairperson or a majority of members may request for an emergency meeting should the need arise.

#### **2.2.6 ABUSRHSP Operational Protocol**

##### **General Requirements**

The protocol must include the following information:

- a. Project title (including course number if a teaching program)
- b. Project leader(s) (a.k.a. Principal Investigator) name.
- c. Names of other Research Staff and other authorized personnel, including personnel qualifications and training.
- d. Departmental affiliation, mailing address, phone number(s), and lab location.
- e. Proposed start date, proposed end date.
- f. Funding agency.
- g. An indication of the use of any hazardous material including infectious agents and other biological hazards, toxic or carcinogenic chemical agents, and radioactive materials.
- h. Rationale and purpose of the proposed study and the scientific goals of the research.
- i. Groups and individuals to be used with scientific justification; the number of animals used should be justified statistically.
- j. An indication of the categories of discomfort and the classification of research based on primary use.
- k. A description detailing the procedures that are to be carried out.
- l. Assurance that procedures will avoid or minimize discomfort, distress, and pain to the participants/subjects consistent with sound research design.
- m. Any other information considered important or necessary and pertinent.
- n. All information must be presented in a form that all members of the ABUSRHSP can readily understand.

### **2.2.8 ABUSRHSP Standard Operating Procedure:**

1. All members of staff, students, visiting academics and researchers and any other person using human subjects for research, teaching or demonstrations as an activity in the University must submit an application for ethical approval to the ABUSRHSP before the activity may commence.
2. Applications for approval must be submitted in the prescribed format that is obtainable from the ABUSRHSP.
3. Applications must be submitted at the latest two weeks before the next scheduled meeting of the ABUSRHSP to be circulated to reviewers for comment. If any clarification is needed the applicant will be notified in writing and given the opportunity to reply a week before the meeting in order to avoid unnecessary delays in obtaining approval.
4. Applications are approved by consensus or, if necessary, by a majority vote. The committee may require minor amendments, in which case the Chairman can be authorized to sign the approval as soon as the requirements are met, or major amendments, in which case the application must be resubmitted. In the case of urgent or non-contentious applications the Chairman can be authorized to sign the approval after consultation with one or more members of the committee. Such approvals should be ratified at the next committee meeting.
5. Researchers have the right to appeal the decision of the Committee. The request to appeal must be submitted through the office of the chair of the Research Subcommittee to the Vice Chancellor. The appeal must contain a clear motivation as to the reasons for the appeal. The documents must include an executive summary and motivation from a subject specialist other than the author of the protocol, stating clearly the reasons for appeal and why this protocol should be reconsidered. The Vice Chancellor may then approach outside consultants to evaluate the protocol and to furnish him/her with a report and a recommendation. The ABUSRHSP will then reconsider the entire protocol with new motivations at the meeting following the one on which the appeal was tabled.
6. Approved submissions will be kept on record. Any deviations from the approved procedures with any ethical implications must be submitted for approval.

The ABUSRHSP reserves the right to interview the researcher and/or the study director; to inspect the facilities where animals are housed and experimental procedures performed, prior to or during the experiment, to request that records are made available; and to seize any animal and stop an experiment if deemed necessary.

#### **The application process**

For new projects based in, supervised/guaranteed by or in liaison with the University, applicants must complete the prescribed application form for consideration at a meeting of the ABUSRHSP.

Staff members applying for research grants from funding bodies such as the University Board of Research should make sure that their applications are

## **Initial Application**

1. Application should be submitted to the Secretary of ABUSRHSP.
2. The responsible investigator (RI) will receive an acknowledgement from the Secretary to confirm receipt of the application.
3. The application will then be placed on the agenda for the next meeting, this will either be an Executive meeting or a full ABUSRHSP meeting depending on the application is received.
4. ABUSRHSP meetings are monthly. Dates for meetings and submission of applications can be obtained from the Committee Secretary. Submissions must be received 7 days prior to the meeting.
5. Executive meetings are held approximately a week before Committee meetings. The Executive screens applications to identify ethical concerns and deficiencies before the applications are presented to the Committee. It cannot approve initial or renewal applications but can approve straightforward applications for minor modifications and associate investigator applications at its discretion. The Committee at its following meeting reviews all decisions of the Executive.
6. If the application has been presented at a full ABUSRHSP meeting, the RI will be informed by the Secretary within 2 working days after the meeting to advice of the outcome.
7. If the application has been presented at an Executive meeting, the RI's attention maybe sought by the Secretary if the Executive has identified any areas of concern that should be addressed prior to the full meeting. Applications will automatically be forwarded to the full ABUSRHSP for consideration after presentation at an Executive meeting.

Official notification of the decision will be forwarded to the Principal Investigator as soon as possible following a meeting, or after any required clarifications, amendments, additional information or signatures are received and approved.

## **Fees**

No fee will be charged by the ABUSRHSP for the approval of projects for researchers or instructors except where such project involves travelling for inspection where the staff or researcher concerned shall be required to offset the logistics.

### **2.3.9 Complaint and Appeal Procedure**

#### **Complaint Procedures**

Complaints can be reported to any member of the ABUSRHSP. The person

reporting the complaint can do so verbally or preferably in writing, and may insist on anonymity. All complaints lodged are to be taken seriously and the Committee should act promptly.

The member of the ABUSRHSP to whom the complaint is reported should gather the necessary information to assess the extent of the problem and inform the Chairman who, after consultation with members, will decide on the further course of action. If the problem is of a serious nature, an extra-ordinary meeting of the Committee can be called.

In order to investigate a reported complaint, the Committee can do any or all of the following:

- Conduct an immediate inspection of the reported complaint.
- Inform the responsible person in writing that a complaint has been lodged against him or her, and that the problem should be remedied as soon as possible to comply with ethical requirements.
- Order the research to be suspended until the outcome of the investigation is known.

If the ABUSRHSP deems it necessary, the matter could be referred to the Vice Chancellor, in which case the ABUSRHSP would be the *pro forma* complainant and will supply the Vice Chancellor/Disciplinary committee with a factual statement regarding the incident.

### **ABUSRHSP procedure for handling complaints**

- (i) **Receipt of complaint**  
The complaint is brought to the notice of the ABUSRHSP Chair.  
The Secretary records receipt of the complaint.
- (ii) **Establishing details of complaint**  
The Secretary finds out full details of the complaint and examines the complaint in relation to the approved application.
- (iii) **Resolution of complaint at ABUSRHSP level**  
The complaint is resolved at the ABUSRHSP level if possible.  
The action that is taken depends on the nature of the complaint.

### **Appeal Process**

#### **1. Informal Appeal**

A researcher or instructor who is in disagreement with the decision of the ABUSRHSP with respect to an aspect of his/her research project/program involving use of live, non-human vertebrate animals may appeal this decision in writing to the Research Committee/UBR. The appeal document will also be sent to the Vice Chancellor. UBR will review the written document and any additional supporting materials provided by the researcher. An informal meeting may be called between the ABUSRHSP and the researcher to further discuss the matter. Following consideration of all additional information, UBR will reach a decision as to whether or not the additional information/explanation provided by the researcher

will result in a change in the ABUSRHSP decision. Every attempt will be made to reach a resolution by informal means.

## 2. Formal Appeal

In the event that a resolution of the matter has not been reached through the informal appeal, the researcher will refer the matter to the Vice Chancellor for opinion and decision. The Vice Chancellor will review documentation provided by the ABUSAUC and the researcher, and will consult with others as required, including but not limited to, members of the UBR, ABUSAUC, the researcher etc. Subsequently, the Vice Chancellor will issue a decision on the matter in writing with copies to the researcher and ABUSAUC. This decision will be final.

## 2.3 Animal Use and Care Policy

### 2.3.1 Overview

The Ahmadu Bello University Animal Use and Care Policy is aimed at establishing a research environment that ensures ethical and humane use and responsible care of Animals in research, teaching and testing in accordance with applicable laws, guidelines and regulations.

This policy emphasizes the responsibilities of investigators, teachers and institutions using animals to:

1. Ensure that the use of animals is justified, taking into consideration the scientific or educational benefits and the potential effects on the welfare of the animals;
2. Ensure that the welfare of animals is always considered;
3. Promote the development and use techniques which replace animal use in scientific and teaching activities wherever possible. The policy specifies that techniques that totally or partially replace the use of animals for scientific purposes should be sought and used wherever possible;
4. Minimise the number of animals used in projects; and
5. Avoid pain or distress for each animal used in scientific and teaching activities.

The policy shall outline:

- a) Ethical principles that govern Animal care in research, teaching and testing;
- b) Expectations pertaining to Animal care and Animal ethics; and
- c) Consequences of non-compliance with the policy.

This policy shall apply to all research, teaching, and testing involving Animals in the Ahmadu Bello University:

### **Animals in Teaching and Research**

The University is committed to ensuring the ethical and humane use as well as responsible care of animals in research and teaching in accordance with international standards and regulations.



As a leading teaching and research institution, the University recognizes the value and importance of scientific research. Virtually all research conducted in the Biological Science/Agric and Medical Complex involves the use of animals. The University believes that researches with animals is necessary but should observe ethical conducts, since these researches advances our ability to improve human and animal well-being.

Animals are to be used only for valid scientific studies with a reasonable expectation of obtaining knowledge for the potential benefit of people and animals. The welfare of animals used in research has gained attention globally that has led to the development of guidelines and in some instances national laws governing animal experimentation.

An "animal experiment" is any procedure which uses animals for one or more of the following "scientific purposes":

- (i) the advancement of knowledge
- (ii) to test a hypothesis
- (iii) to supply a product
- (iv) to provide organs or tissues or sera
- (v) to act as a host
- (vi) to impart or demonstrate existing knowledge
- (v) to teach or learn surgical or other techniques
- (vi) to make audiovisual recordings or any of the above
- (vii) to fulfill statutory requirements for testing, or collecting data on, any substance or product.

Recently however, funding for animal model based research in more advanced countries has dwindled in favor of non-animal model techniques which include synthetic models, cadaver models as well as computer simulations, these styles of instruction are often unavailable in poorer developing countries, hence animal model based studies shall remain relevant in both biomedical research and surgical training.

The University shall therefore set up an ABU Subcommittee on Animal Use and Care (ABUSAUC) to ensure that research animals where unavoidable, are treated with respect and compassion. The Committee members are to frequently observe all research animals within the University as well as provide or cause to be provided first-class care and attention. The relevant Department in the University (Veterinary Surgery and Medicine) shall also have in place a postgraduate course in Animal Handling, Restraint and Management to be made mandatory for all researchers and other animal users. This is to ensure that scientists using research animals are trained and competent to carry out procedures in ways that will avoid or minimize distress to the animals.

### **Justification**

The optimal care of experimental animals is essential and in the interests of both animals and research. There are two main reasons for this proposition. First, proper care and use promote the welfare of animals and contributes to the attainment of the high ethical and humane standards expected of a civilized society. Secondly, it is

expensive to use animals in experiments. Experimental animals, which are housed in poor facilities or are suffering from disease produce poor, unreliable and unrepeatable results and are wasteful of resources.

Projects using animals may be performed only after a decision has been made that they are justified, weighing the predicted scientific or educational value of the projects against the potential effects on the welfare of the animals.

Investigators and teachers must submit written proposals to the ABUSAUC for all animal projects which must take into account the expected value of the knowledge to be gained, the justification for the project, and all ethical and animal welfare aspects especially taking into consideration the 3Rs (Replacement, Reduction and Refinement).

### **The three Rs (Replacement, Reduction and Refinement) Concept**

The three Rs concept is a universal doctrine for regulating the use of animals in teaching and research.

#### ***Replacement***

Techniques that totally or partially replace the use of animals for scientific purposes must be sought and used wherever possible.

#### ***Reduction***

1. Each project must use no more than the minimum number of animals necessary to ensure scientific and statistical validity.
2. The principle of reducing the number of animals used should not be implemented at the expense of greater suffering of individual animals.
3. Scientific and teaching activities involving the use of animals must not be repeated unless essential for the purpose or design of the project.
4. Teaching activities must involve no more than the minimum number of animals required to reach the educational objectives.
5. Overproduction of animals bred for scientific purposes should be avoided so that the need to kill healthy animals is minimized.

#### ***Refinement***

1. Animals must be suitable for the scientific purpose taking into account their biological characteristics including behavior, genetic attributes and nutritional, microbiological and general health status.
2. The design and management of animal accommodation should meet species-specific needs. Special consideration is required where this is precluded by the requirements of the project.
3. Animals should be transported, housed, fed, watered, handled and used under conditions that meet species-specific needs. The welfare of the animals must be a primary consideration in the provision of care, which should be based on behavioral and biological needs.
4. Wildlife should not be taken from natural habitats unless animals bred in captivity are not available or are not suitable for the specific scientific purpose.

5. Investigators and teachers who use animals for scientific purposes must employ the best available scientific and educational techniques and be competent in the procedures they perform or must be under the direct supervision of a person competent in the procedure.
6. Projects should be designed to avoid both pain and distress in animals. If this is not possible, pain or distress must be minimized.
7. Pain and distress cannot be evaluated easily in animals and therefore investigators and teachers must assume that animals experience these in a manner similar to humans unless there is evidence to the contrary. Decisions regarding the animals' welfare must be based on this assumption.
8. An animal with signs of pain or distress not predicted in the proposal must have the pain or distress alleviated promptly. Alleviation of such pain or distress must take precedence over completing a project. If this is not possible the animal must be euthanized without delay.
9. Scientific and teaching activities that may cause pain or distress of a kind or degree, for which anaesthesia would normally be used in medical or veterinary practice, must be carried out using anaesthesia appropriate to the species and the procedure.
10. Pain management appropriate to the species, the procedure and the circumstances must be provided.
11. The use of local or general anaesthetic, analgesic or tranquillizing agents must be appropriate to the species, and should at least parallel their use in current medical or veterinary practice.
12. Where it is established that the purpose of the project precludes the use of anaesthetic or analgesic agents to alleviate pain, the planned end-point of the project must be as early as feasible to avoid or minimize pain or distress in the animals.
13. Neuromuscular blocking agents must not be used without appropriate general anaesthesia, except in animals where sensory awareness has been eliminated. If such agents are used, continuous or frequent monitoring of paralyzed animals is essential to ensure that the depth of anaesthesia is adequate to prevent pain or distress.
14. 'Death as an end-point' must be avoided wherever possible.
15. Scientific and teaching activities involving the use of animals must be of minimum duration compatible with the objectives of the project.

## **Animal Rights**

Rights are a means of protecting disadvantaged individuals from the tyranny of the more advantaged one. Animal Rights refers to the moral right of animals to be treated with respect and without exploitation.

In Nigeria, The right of animals under domestic or captivity has been defined by both the Criminal code and Penal code of Nigeria. These are summarized thus:

1. The right to be free from hunger.
2. The right to be free from discomfort.
3. The right to be free from fear and distress and
4. Freedom to express normal behaviour.

Section 495 of the Nigerian Criminal Code and Cap. 196 of the Penal code specifically list offences of cruelty to animals to include:

- (a) Beating, kicks, ill-treatment, over riding, over driving, overloading, torture, terrifying or cause or process or permit any animal to be so treated,
- (b) Cause or permit unnecessary suffering,
- (c) Conveys or carries or permits to be conveyed or carried in such a manner or position to cause unnecessary suffering,
- (d) Administration of poisons or injurious drugs,
- (e) Operations without due and humane consideration,
- (f) Fighting and baiting including management of such a place.

The essence of Animal Right has been summarized in the Universal Declaration of the Right of Animals Viz.:

This declaration hereby proclaims that:

**Article 1:** All animals are born with equal due to life and the same rights to existence.

**Article 2:**

1. All animals are entitled to respect.
2. Man as an animal shall not arrogate to himself the right to exterminate or inhumanely exploit other animals.
3. All animals have a right to the attention, care and protection of man.

**Article 3:**

1. No animal shall be ill treated or subjected to “animal acts”.
2. If an animal must be Killed, this should be instantaneous and without distress.

**Article 4:**

1. All wild animals have a right to liberty in their environment where they should be allowed to procreate.
2. Deprivation of freedom even for educational purpose is an infringement of this right.

**Article 5:**

1. Animals living traditionally in a human environment have a right to live and grow in the rhythm and under the conditions of life and freedom peculiar to their species.
2. Any interference by man with this rhythm or conditions for purpose of gain is an infringement of this right.

**Article 6:**

1. All companion animals have the right to complete their natural life span.
2. Abandonment of an animal is a cruel and degrading act.

**Article 7:** All working animals are entitled to a reasonable limitation of the duration and intensity of work to the necessary nourishment and rest.

**Article 8:**

1. Animal experimentation, involving physical or psychological suffering is incompatible with the right of animals, whether it be for scientific, medical or commercial or any other form of research.
2. Replacement methods must be used and developed.

**Article 9:** Where animals are used in the food industry, they shall be reared, transported, lairaged and killed without the infliction of suffering.

**Article 10:**

1. No animal shall be exploited to the amusement of man.
2. Exhibitions and spectacles involving animals are incompatible with their dignity.

**Article 11:** Any act involving the wanton killing of an animal is biocide, which is a crime against life.

**Article 12:**

1. Any act involving mass killing of wild animals is genocide, which is a crime against the species.
2. Pollution or destruction of the natural environment leads to genocide.

**Article 13:**

1. Dead animals shall be treated with respect.
2. Scenes of violence involving animals shall be banned from cinemas and television except if for humane education.

**Article 14:**

1. Representatives of movements that defend animal rights should have an effective voice at all levels of government.
2. The rights of animals like human rights should enjoy the protection of law.

**Facilities for Animals**

1. The University or affected Department will acquire and maintain or allow to be bought and maintained only the number and type of Animals that can be accommodated in existing facilities in accordance with applicable regulation.
2. If space is unavailable, the research may need to be modified, rescheduled or funds may need to be allocated for modification or expansion of existing facilities.

**2.3.2 Categories of Animal Use**

The use of animals for research or testing purposes requires an ethics approval. The application form for this purpose is designed to provide the committee with all the information it needs to assess the required ethical aspects and to guide the applicant

in providing the necessary details

### **Animals used for non-experimental purposes**

A separate application form should be provided for animals used in teaching (e.g. Surgical/dissection exercises and animal handling). Such animals must be housed and handled according to acceptable standards as specified by the ABUSAUC, and all procedures performed on the animals must be listed.

The following information must be submitted to the ABUSAUC at the end of every academic year: the number of animals involved, the buying, breeding and disposal of animals and the number of contacts between animals and students.

A person should be identified who will be directly responsible for overseeing the health and welfare of the animals. Procedures for providing care for the animals in case of emergency should also be described.

The use of animals in continuing education courses must be authorized by the ABUSAUC applications for approval must include all details of the planned course, animal care, procedures to be performed, aftercare and disposal of animals.

### **Clinical cases**

The ABUSAUC must see to it that clinical cases be housed and cared for adequately.

Clinical cases (including donors) should be managed in accordance with the currently accepted standards. No unauthorized research may be conducted on clinical cases. This includes taking samples by invasive means or exposure of patients to irradiation for the sake of the investigation. No drugs or procedures that are either controversial or of unproven value, may be applied without prior authorization. This authorization is based on the evaluation of a comprehensive research project, which should include the details of the informed consent of the owners of the animals. The research project must clearly indicate the reasonable cause where any poisonous or injurious drug or substance is administered to any animal.

### **2.3.3 Terms of Reference of ABUSAUC**

1. To advise on the principles and guidelines for animal use and welfare in the University, including acquisition, transport, production, housing, care, use and disposal of animals.
2. To monitor the development and management of animal holding and breeding facilities in the University to ensure that the appropriate standards of these facilities are maintained.

3. To consider the ethical implications of all proposed research and teaching activities involving the use of animals, and to approve only those which conform to the minimal universal standards.
4. To monitor approved activities for continued conformance with the policy.
5. To maintain records of all applications for approval and the decisions of ABUSAUC, and to make appropriate information from these records available in response to requests from a duly constituted authority.
6. To report annually on the activities of the Subcommittee.

#### **2.3.4 Mandate of ABUSAUC**

ABUSAUC shall be a Subcommittee of the ABU Research Committee. The primary mandate of the ABUSAUC is to ensure that the use of experimental animals is justified, that alternatives have been considered, that the number of animals used is reduced to a minimum, that unnecessary suffering of the animals is excluded and their well-being ensured.

Specifically, the Committee's mandate are:

1. Stop any objectionable procedure if it considers that unnecessary distress or pain is being experienced by an animal.
2. Terminate immediately any non-approved procedure, any procedure causing unforeseen pain and distress to animals, or any use of animals that deviates from the approved protocol.
3. Humanely euthanize an animal if pain or distress caused to the animal is not part of the approved protocol and cannot be alleviated.
4. That any objectionable procedure considered to result in an animal experiencing unnecessary distress or pain be stopped.
5. That any use of animals for purposes other than those already approved or use of non-approved procedures be stopped.
6. That any animal that is in pain or distress that cannot be alleviated be humanely killed by the Consulting Veterinarian on behalf of ABUSAUC.
7. That adequate veterinary care is provided to all animals regardless of the stage in lifespan, and that access to veterinary care is available in cases of injury, illness or surgery.
8. That a set of standard operating procedures be developed, and reviewed on a regular basis, for animal husbandry, facility and equipment management, alleviation for pain or distress, proper and effective use of anaesthesia and analgesia, pre and post-operative care and monitoring, procedures for euthanasia, and other areas as required.
9. That these standard operating procedures be communicated to animal health technicians, animal researchers and course instructors and that these procedures be implemented and regularly reviewed.

#### **Animal Care Facility Mandate**

1. That animals are housed or maintained only in areas that have been inspected and approved for this purpose;

2. That all animal facilities are inspected on an annual basis at a minimum and that the facilities and animal care provided within meet ABUSAUC standards.
3. That the level of security in the animal facilities is adequate for the protection of the animals housed therein and that this is reviewed on a regular basis.
4. That recommendations are provided to Departments, Units and Sections which oversees each facility in regard to necessary development/improvements, maintenance and use of the animal facilities in their charge.
5. Ensuring adequate numbers of animal care personnel are present, and that animal users and animal care personnel are qualified to perform their duties. All individuals shall receive training in the humane care and use of animals.
6. Ensuring that facilities and equipment meet the standards of all applicable regulations and policies.
7. Providing standards of husbandry and veterinary medical care that meet or exceed regulatory mandates;

### **Education Mandate**

1. That on-going educational programs consistent with the ABUSAUC guidelines on: institutional animal user training are sponsored for all personnel who will handle animals (i.e. investigators, course instructors, post doctoral fellows, research and technical staff, graduate and undergraduate students) on issues related to the proper care and use of animals in teaching and research, including but not limited to, the ethics of animal experimentation, species-appropriate anaesthesia and analgesia, aseptic surgical techniques, establishment of humane endpoints, surgical monitoring, and legislation applicable to laboratory use and care.
2. That liaison occurs with the academic community to ensure researchers and instructors receive current information pertaining to regulations and guidelines as well as current institutional policies and practices;
3. That liaison occurs and recommendations are made as needed to appropriate committees within the University so that information can be provided to the general public on matters concerning animal welfare and research and teaching activities involving animals at this University;
4. That alternatives to use of animals in teaching and research activities be encouraged wherever possible.

### **2.3.5 Membership of ABUSAUC**

- Chairperson, appointed by the Vice Chancellor
- Chairperson, relevant Departmental Research Committee.
- Representative, Dean, Faculty of Veterinary Medicine.
- 1 representative from each Section of the department.
- Rep. Biological Sciences (zoology)
- Veterinary Doctor.



### **2.3.6 Meetings**

1. The Chairperson will call at least a meeting monthly.
2. A quorum will represent 51% of membership. If a quorum is not attained, the Meeting shall be postponed and rescheduled.
3. Decisions at meetings shall as much as possible be reached by consensus.
4. The Chairperson or a majority of members may request for an emergency meeting should the need arise.

### **2.3.7 Animal Use and Care Protocol**

#### **General Requirements**

The animal use protocol must include the following information:

- a. Project title (including course number if a teaching program.)
- b. Project leader(s) (a.k.a. Principal Investigator) name.
- c. Names of other Research Staff and other authorized personnel, including personnel qualifications and training.
- d. Departmental affiliation, mailing address, phone number(s), and lab location.
- e. Proposed start date, proposed end date.
- f. Funding agency.
- g. An indication of the use of any hazardous material including infectious agents and other biological hazards, toxic or carcinogenic chemical agents, and radioactive materials.
- h. Rationale and purpose of the proposed use of animals and the scientific goals of the research.
- i. Species and number of animals to be used with scientific justification; the number of animals used should be justified statistically.
- j. An indication of the categories of discomfort and the classification of research based on primary use.
- k. Methods of anaesthesia and analgesia, including dosages and methods of use.
- l. The methods of euthanasia, if necessary.
- m. A description detailing the procedures that are carried out in the animals.
- n. Assurance that procedures with animals will avoid or minimize discomfort, distress, and pain to the animals consistent with sound research design.
- o. Written assurance that the principal investigator has considered alternatives to procedures that may cause more than momentary or slight pain or distress to the animals, and has provided a written narrative description of the methods and sources and has established that alternatives were not available.
- p. Assurance that all procedures that may cause more than momentary or slight pain or distress to the animals will be performed with appropriate sedation, analgesia, or anaesthesia, unless the procedure is justified for scientific reasons in writing by the investigator.

- q. Assurance that animals that would otherwise experience severe or chronic pain or distress that cannot be relieved will be painlessly euthanatized at the end of the procedure or, if appropriate, during the procedure.
- r. Assurance that adequate pain relieving drugs and pre-and post-surgical care will be provided by trained personnel.
- s. Assurance that the methods of euthanasia used will be consistent with international recommendations (e.g. recommendations of the American Veterinary Medical Association Panel on Euthanasia), unless a deviation is justified for scientific reasons in writing by the investigator.
- t. Unusual housing and husbandry requirements.
- u. Any other information considered important or necessary and pertinent.
- v. All information must be presented in a form that all members of the ABUSAUC can readily understand.

### **2.3.8 ABUSAUC Standard Operating Procedure:**

1. All members of staff, students, visiting academics and researchers and any other person using animals for research, teaching or demonstrations as an activity in the University must submit an application for ethical approval to the ABUSAUC before the activity may commence.
2. Applications for approval must be submitted in the prescribed format that is obtainable from the ABUSAUC.
3. Applications must be submitted at the latest two weeks before the next scheduled meeting of the ABUSAUC to be circulated to reviewers for comment. If any clarification is needed the applicant will be notified in writing and given the opportunity to reply a week before the meeting in order to avoid unnecessary delays in obtaining approval.
4. Applications are approved by consensus or, if necessary, by a majority vote. The committee may require minor amendments, in which case the Chairman can be authorized to sign the approval as soon as the requirements are met, or major amendments, in which case the application must be resubmitted. In the case of urgent or non-contentious applications the Chairman can be authorized to sign the approval after consultation with one or more members of the committee. Such approvals should be ratified at the next committee meeting.
5. Researchers have the right to appeal the decision of the Committee. The request to appeal must be submitted through the office of the chair of the Research Subcommittee to the Vice Chancellor. The appeal must contain a clear motivation as to the reasons for the appeal. The documents must include an executive summary and motivation from a subject specialist other than the author of the protocol, stating clearly the reasons for appeal and why this protocol should be reconsidered. The Vice Chancellor may then approach outside consultants to evaluate the protocol and to furnish him/her with a report and a recommendation. The ABUSAUC will then reconsider the entire protocol with new motivations at the meeting following the one on which the appeal was tabled.
6. Approved submissions will be kept on record. Any deviations from the approved procedures with any ethical implications must be submitted for approval.

The ABUSAUC reserves the right to interview the researcher and/or the study director; to inspect the facilities where animals are housed and experimental procedures performed, prior to or during the experiment, to request that records are made available; and to seize any animal and stop an experiment if deemed necessary.

### **The application process**

For new projects based in, supervised/guaranteed by or in liaison with the University, applicants must complete the prescribed application form for consideration at a meeting of the ABUSAUC.

Staff members applying for research grants from funding bodies such as the University Board of Research should make sure that their applications are submitted to the ABUSAUC in time to obtain approval by the required date. A reference number will be issued and the application will be considered at the next scheduled ABUSAUC meeting. If the Principal Investigator has not received an acknowledgement within one week of lodging the application, please contact the Secretary to ensure that the application was received.

### **Initial Application**

1. Application should be submitted to the Secretary of ABUSAUC.
2. The responsible investigator (RI) will receive an acknowledgement from the Secretary to confirm receipt of the application.
3. The application will then be placed on the agenda for the next meeting, this will either be an Executive meeting or a full ABUSAUC meeting depending on when the application is received.
4. ABUSAUC meetings are monthly. Dates for meetings and submission of applications can be obtained from the Committee Secretary. Submissions must be received 7 days prior to the meeting.
5. Executive meetings are held approximately a week before Committee meetings. The Executive screens applications to identify ethical concerns and deficiencies before the applications are presented to the Committee. It cannot approve initial or renewal applications but can approve straightforward applications for minor modifications and associate investigator applications at its discretion. The Committee at its following meeting reviews all decisions of the Executive.
6. If the application has been presented at a full ABUSAUC meeting, the RI will be informed by the Secretary within 2 working days after the meeting to advice of the outcome.
6. If the application has been presented at an Executive meeting, the RI's attention maybe sought by the Secretary if the Executive has identified any areas of concern that should be addressed prior to the full meeting. Applications will automatically be forwarded to the full ABUSAUC for consideration after presentation at an Executive meeting.

Official notification of the decision will be forwarded to the Principal Investigator as soon as possible following a meeting, or after any required

clarifications, amendments, additional information or signatures are received and approved.

## **Fees**

No fee will be charged by the ABUSAUC for the approval of projects for researchers or instructors except where such project involve travelling for inspection where the staff or researcher concerned shall be required to offset the logistics.

### **2.3.9 Complaint and Appeal Procedure**

#### **Complaint Procedures**

Complaints can be reported to any member of the ABUSAUC. The person reporting the complaint can do so verbally or preferably in writing, and may insist on anonymity. All complaints lodged are to be taken seriously and the Committee should act promptly.

The member of the ABUSAUC to whom the complaint is reported should gather the necessary information to assess the extent of the problem and inform the Chairman who, after consultation with members, will decide on the further course of action. If the problem is of a serious nature, an extra-ordinary meeting of the Committee can be called.

In order to investigate a reported complaint, the Committee can do any or all of the following:

- Conduct an immediate inspection of the reported complaint.
- Inform the responsible person in writing that a complaint has been lodged against him or her, and that the problem should be remedied as soon as possible to comply with ethical requirements.
- Order the research to be suspended until the outcome of the investigation is known.

If the ABUSAUC deems it necessary, the matter could be referred to the Vice Chancellor, in which case the ABUSAUC would be the *pro forma* complainant and will supply the Vice Chancellor/Disciplinary committee with a factual statement regarding the incident.

#### **ABUSAUC procedure for handling complaints**

- (iv) **Receipt of complaint**  
The complaint is brought to the notice of the ABUSAUC Chair.  
The Secretary records receipt of the complaint.
- (v) **Establishing details of complaint**  
The Secretary finds out full details of the complaint and examines the complaint in relation to the approved application.
- (vi) **Resolution of complaint at ABUSAUC level**  
The complaint is resolved at the ABUSAUC level if possible.

The action that is taken depends on the nature of the complaint.

### **Appeal Process**

#### **1. Informal Appeal**

A researcher or instructor who is in disagreement with the decision of the ABUSAUC with respect to an aspect of his/her research project/program involving use of live, non-human vertebrate animals may appeal this decision in writing to the Research Committee/UBR. The appeal document will also be sent to the Vice Chancellor. UBR will review the written document and any additional supporting materials provided by the researcher. An informal meeting may be called between the ABUSAUC and the researcher to further discuss the matter. Following consideration of all additional information, UBR will reach a decision as to whether or not the additional information/explanation provided by the researcher will result in a change in the ABUSAUC decision. Every attempt will be made to reach a resolution by informal means.

#### **2. Formal Appeal**

In the event that a resolution of the matter has not been reached through the informal appeal, the researcher will refer the matter to the Vice Chancellor for opinion and decision. The Vice Chancellor will review documentation provided by the ABUSAUC and the researcher, and will consult with others as required, including but not limited to, members of the UBR, ABUSAUC, the researcher etc. Subsequently, the Vice Chancellor will issue a decision on the matter in writing with copies to the researcher and ABUSAUC. This decision will be final.

## **3.0 INTELLECTUAL PROPERTY POLICY**

### **3.1 Preamble**

The Intellectual Property Policy of the Ahmadu Bello University shall be to promote and facilitate research, productivity and inventions geared towards the enhancement of humanity. The policy shall define ownership, commercialization and various forms and patterns of association relevant to Intellectual property in the University.

The policy shall encourage, promote, guarantee and preserve the rights and interest of staff and students of the Ahmadu Bello University in discoveries, inventions and creativities for the interest of Ahmadu Bello University in particular and the nation in general.

### **Justification and Objectives of the Policy**

- 1 To protect inventions, copyrights, patents and trademarks.
- 2 To promote acquisition of knowledge through which new discoveries, inventions and creations would blossom within the University.
3. To provide incentives for creativities and inventions through rewards and other forms of recognition.

### **3.2 Copyrightable Works**

#### **3.2.1 Ownership by Authors**

Without prejudice to the University, the ownership of Dissertations, Theses, Textbooks, Conference papers, Workshop papers, Unpublished scripts, Long essays and Journal articles shall be vested in the authors. Where researches leading to the theses are substantially (not less than 60%) funded by the University, the right shall be exercised by the University.

#### **3.2.2 University Ownership**

Unless otherwise specifically provided in writing, the ownership of copyright for Software electronic courses, Course materials, Electronic media, Course modules, Laboratory manuals, Syllabi, Sculptural works, Musical or dramatic compositions, Proposals, transparencies, video and audiotapes or cassettes as well as Programmed instructional materials shall be vested in the University if created for institutional purposes either jointly with staff, external sponsors or students.

#### **3.2.3 Copyright Reserved**

All copyrightable works owned by the University shall prominently bear the copyright sign and words viz.:

© 20--, Ahmadu Bello University. All rights reserved. No part of this publication maybe reproduced, stored in a retrieval system or transmitted I any form or by any

*means, electronic, mechanical, photocopying, recording or otherwise without the prior permission of the Ahmadu Bello University.*

### **3.2.4 University Logo and Trademark**

The right to use the University logo and trademark (same as logo) shall be vested in the University.

### **3.3 Rights of Participants**

1. It shall be the right of every person engaged in a research which has potential intellectual benefits to know his/her interest prior to the commencement of the project, assignment or research.
2. Such interest shall be clearly defined in a written agreement duly signed by all parties.
3. The right of any person to withdraw from any research project or assignment at anytime is assured, guaranteed and protected; however there should be no disclosure of the work in any form to a third party without the consent of the University.

### **Right of Multiple Authors**

Where there are multiple authors to a copyrightable work, the interest of each author shall be defined from the onset.

### **3.4 Duty To Disclose Interest of Each Party**

It is the duty of the Faculties, Departments, Institutes and Directorates to disclose the interest of each party in a research which has potential benefits at the onset of the research.

### **3.5 Patent**

#### **Ownership of Inventions and Discoveries**

The ownership of inventions and discoveries shall vest in the University provided that such discoveries or inventions are:

1. Substantially funded (not less than 60%) by the University
2. The creator or inventor used equipment, tools, resources, time, assistance, infrastructure, utilities or apparatus owned by the University.
3. The research was conducted with sponsorship gained, negotiated, facilitated or procured or cause to be procured by any staff of the University during the cause of his/her official responsibility.

#### **Duty to Patent an Invention**

It shall be the responsibility of the University to patent all patentable inventions in conformity with the existing laws of the Federal Republic of Nigeria.

### **Prohibition from Disclosure of a Patentable Discovery or Invention**

It shall not be lawful for any Faculty, Department, Institute, staff or Students engaged in projects, researches, consultancies and experiments in accordance with Article 3.5 to disclose any information arising from such project, research or experiment without the written consent of the University.

### **3.6 Commercialization of Intellectual Property**

It shall not be lawful for any stakeholder whether it be faculty, department, institute, staff, student or any commercial organization, industry, corporate body or firm to commercially exploit any Intellectual Property assigned to or acquired by the University in accordance with Article 3.5 of this policy without first, having obtained in writing or formal agreement from the University such authority or permission to so commercially exploit the property.

### **Electronic/Online Materials**

Courses, materials, contents intended for delivery electronically or over the internet, computer, other related material or electronic means except if sponsored, shall remain the property of the creator.

### **3.7 Protection of Intellectual Property**

1. It shall be the duty or responsibility of the University to protect all interest, rights, duties and privileges accruing from Intellectual Property acquired by or assigned to it in accordance with Article 3.5 of this policy.
2. For the realization of the objectives of this policy, the University shall have the right to take legal action to protect, guarantee and preserve all interests, rights, duties, obligations and privileges arising from Intellectual Property acquired in accordance with Article 3.5 of this policy.

### **3.8 Trademarks**

#### **Ownership of Trademarks**

The University shall have trademarks, logos and designs for its use and enjoyment and all rights, ownership, interest, privileges and immunities appurtenance there from shall be vested in the University.

#### **Prohibition of the use of the University Logo and Trademark**

It shall not be lawful for any person or group of persons to make commercial exploitation of the University logo, trademark, design and goodwill without the consent of the University.

### **3.9 Administration of Intellectual Property**



## **Enforcement of Intellectual Property Policy**

It shall be the duty and responsibility of the following officers or offices to observe and enforce the Intellectual Property Policy of the University:

1. The University Governing Council
2. The Vice Chancellor
3. Academic Planning Directorate
4. University Board of Research
5. Faculties
6. Departments
7. Staff (academic and non academic)
8. Students (part time or full time) at all levels.

### **3.10 Establishment of An Intellectual Property Committee**

There shall be established an Intellectual Property Committee under the supervision of the Directorate of Academic Planning/ABOCONS for the Ahmadu Bello University.

The functions of the Intellectual Property Committee shall include:

1. To promote and publicise the existence of an Intellectual Property Policy.
2. To liaise with faculties, departments, institutes and individuals in all matters affecting the Intellectual property Policy.
3. To coordinate and liaise between the University and other stakeholders such as industries, commercial organizations, firms and sponsoring agencies outside the University.
4. To draw or cause to draw any agreement for the exploitation of any Intellectual Property (invention) on behalf of the Ahmadu Bello University.
5. Resolution of any dispute or controversy relating to the policy herein stated.
6. To undertake any other responsibility towards facilitating the implementation or realization of the aims and objectives of the Intellectual Property Policy as contained herein.

### **3.11 Revenue Accruing From Intellectual Property**

#### **Management of Revenue**

It shall be the responsibility of the University together with other stakeholders to manage revenue accruing from the commercial exploitation of any Intellectual Property acquired by or assigned to the University in accordance with this policy in such a way and manner as to ensure equity and fairness among stakeholders.

Where an Intellectual Property has potential for revenue generation, the University and all other stakeholders shall determine the sharing formula which is equitable and just to all parties concerned.

#### **Distribution of Proceeds (Lump Sum)**

1. Without prejudice to the interest of the University and other stakeholders, all proceeds accruing from sales, licensing or assignment of Intellectual Property acquired by or assigned to the University in accordance with Article 3.5 of this policy shall be distributed as follows:
  - i. Forty percent (40%) to the inventors
  - ii. Sixty percent (60%) to the University to defray all expenses there from.

### **Distribution of Royalties**

Where an Intellectual Property has commercial potentials, it shall be the duty of the University and other stakeholders to ensure that the royalties accruing from such commercial exploitation are distributed as follows:

- i. Thirty three percent (33%) for the inventors.
- ii. Thirty three percent (33%) for the department(s)
- iii. Thirty four percent (34%) for the University.

### **Multiple Inventors**

Where there are multiple inventors, the share of each inventor shall be commensurate with his/her contribution on a pro- rata basis.

### **3.12 Rights of Appeal**

Where a party disagree with the decision of the Intellectual Property Committee he/she shall within 30 days lodge an appeal with the Vice Chancellor who shall appoint an arbitrator with the view to resolving such dispute. The Intellectual Property Directorate shall forward all documents relating to the dispute to arbitrator through the Vice Chancellor for review and recommendations.

When any party still disagrees with the decision of the University, the disagreeing party shall seek legal redress.

### **3.13 Criminal Offences**

It shall be the responsibility of the University to take necessary legal action for any criminal breach of the Intellectual Property Policy of the Ahmadu Bello University.

### **3.14 Review of Policy**

The policy shall be reviewed at 5 year intervals in order to keep abreast with future developments and maintain consistency with changes in University policy.

## 21.0 GLOSSARY

**Academic Staff:** For the purposes of this policy ‘academic staff’ includes staff who have a contractual obligation to carry out research and does not include staff whose obligations are limited to administration or teaching and would not normally include staff on limited term contracts where the employment is not primarily for the purposes of research.

**Author** means a person who creates a copyrighted Work.

**Commercialisation** refers to the exploitation of IP for financial gain.

**Copyright** means an original Work of authorship that has been fixed in any tangible medium of expression from which it can be perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or device. Copyright includes a bundle of rights: the right to make reproductions of the Work, the right to distribute copies of it, the right to make derivative Works that borrow substantially from a copyrighted Work, and the right to make public performances or displays of most Works.

**Copyrighted Material** includes books; Lectures or compositions; films and charts; video and audiotapes; live video and audio broadcasts; other materials and works not listed in this policy.

**Course Materials** means class notes, syllabi, curriculum guides, exams, transparencies, study guides, workbooks, manuals, instructional software, web pages, internet-based instructional materials and such items commonly known as “learning objects” developed by faculty members in the course of their usual scholarly, pedagogical and service activities.

**Creator** means the person(s) who has/have made substantial creative contributions to a Work giving rise to intellectual property rights and shall include, but is not limited to, Authors and Inventors.

**Disclosure** means the distribution of information by any method including presentations, reports or supplying copies of recordable material in a way which would affect the validity of a potential patent or intellectual property.

**Electronic Course** means an academic course of study, delivered in whole or in part via electronic means, and fixed in any medium capable of display on a computer or electronic media screening device.

**Employee** means any person employed by the University in any capacity.

**Intellectual Property** means the legal rights in and to a Work as provided by applicable statute, regulation or judicial decision, including patents, copyrights, trademarks, service mark, trade secrets, domain name registration and any other such rights that may be created by law in the future.

**Invention** means any new or useful process or discovery, art, method, technique, machine, device manufacture, Software, composition of matter, or improvement thereof.

**Inventor** means any individual associated with the University who makes an Invention, also, any “inventorship entity” comprising two or more individuals, one or more of whom is associated with the University, who jointly make an invention.

**Licensing** is a process that enables the owner of IP to give permission to an individual or corporate organization to use that IP to produce a product.

**Owner** is the person or body entitled to benefit from the IP.

**Patent** means a right issued by the patent office that gives an Inventor the right to exclude others from making, using, or selling the Invention in Nigeria for a period of 20 years from the date of filing of the patent application.

**Royalties** means all compensation of whatever kind received from the sale, license, or other transfer of Intellectual Property rights by the University to a third party. This includes, but not limited to, percentage payments, up-front fees, milestone payments, shares of stock, and any other financial or in-kind consideration.

**Software** means any computer program or database, or part thereof, designed to accomplish a task or allow a user to produce, manage, analyse, or manipulate a product, such as data, text, a physical object or other Software. Software may be protected by Patent, Copyright, or Trade Secret.

Sponsor refers to a person or institution providing funding support only for the purpose of enabling a project to be conducted by the University or to enable a person to work or study at the University.

**Sponsored Research Agreement (SRA)** means a contract between the University and a sponsoring organization that sets the terms and conditions for the conduct of a faculty research or training project. An SRA typically includes a description of the Work to be performed, the terms of payment, ownership of intellectual property, publication rights, and other legal assurances.

**Staff** means employees of the University, including academic staff and support staff as defined in the University Statutes.

**Student** means any person enrolled for any course offered by the University.

**Substantial University Assistance** means the University’s participation in or support of the creative or development activity leading to a Work include, but not limited to, University funds, facilities [including laboratories, equipment, supplies], or information [including computer programs, computer time, and computer data bases], technical support staff, computer programmers, legal and business counsel, computer hardware and software, and Internet access that is material, significant and beyond the resources normally provided to individual Employees

and Students. Without limiting the above, the University does not regard the University's provision of normal and customary compensation, student financial aid, library resources, office or laboratory facilities, office staff or laboratory support, telecommunications facilities, individual personal computers and ordinary and reasonable access to the University's computer network and websites or similar University provided electronic communication tools used for non-commercial scholarly pursuits, as constituting "substantial University assistance".

**Trademark** means a word, name, symbol, or device (or any combination) adopted by an organization to identify its goods or services and distinguish them from the goods and services of others.

**Trade Secret** means information, including a formula, pattern, compilation, program, device, method, technique or process, which derives independent economic value from not being generally known or readily ascertainable by other persons, and is the subject of reasonable efforts to maintain its secrecy.

**Tangible Research Property (TRP)** means research results in their physical form, and includes, but is not limited to, data, notes, workbooks, Software, biological organisms, compositions of matter, instruments, machines or devices drawings, and other property that can be physically distributed. Tangible Research Property may also be Intellectual Property.

**University** means the Ahmadu Bello University, Zaria. Nigeria.

**University Invention** means an Invention resulting from activities related to an individual's employment responsibilities, pursuant to a "work for hire" arrangement, or where the University provides Substantial University Assistance.

**Work** means any Invention, discovery, know-how, show-how, process, material, manuscript, original data, academic course or portion thereof (including Course Materials, learning tool or aid, or other creative or artistic Work and any expression or physical embodiment thereof, including without limitation, sound or visual recording, multimedia presentation, model, machine, prototype, design, drawing, apparatus, instrumentation, circuit, computer program, database, biological material or specimen, chemical compound, other composition or matter, plan, record or laboratory notebook, whether now known or developed in the future.