

# **1 General**

## **1.1 Research**

Research is a major component of the functions of any university. Members of the Faculty of Science, Addis Ababa University, have been undertaking research in various areas and disciplines. The outcomes of most of the research have been published in national and international journals. The policies and procedures for the conduct of research outlined hereunder are part of the activities of the Faculty of Science to upgrade its teaching and research environment. It is hoped that the guidelines and procedures formulated will enhance the quality of research in the Faculty in order to achieve competitiveness and relevance at national, regional and international levels.

## **1.2 Types of research**

Research at the Faculty of Science can be both basic and applied. In general, research is defined as any creative systematic activity undertaken to increase the stock of scientific and technical knowledge and to devise new applications. Research whose primary or ultimate objective is a better understanding of whatever phenomena are involved, including the discovery or elucidation of general principles and laws, is referred to as ***basic or fundamental research***, while ***applied research*** is an investigation that is pursued with the main objective of finding solutions of practical problems. Research that is conducted with the main objective of obtaining products or processes is referred to as ***experimental or developmental research***. This type of research has objectives similar to those of applied research but it takes into account the fact that in applying recognized scientific principles, say in industry, much additional research may be necessary in adapting laboratory procedures to large-scale operations. Proposals for research in the Faculty of Science may take any or combined aspects of the above.

## **1.3 Research administration and responsibilities**

The Associate Dean for Research and Graduate Programs (ADRGP) is the coordinator and executive officer of research in the Faculty of Science. He/She is responsible for providing the overall leadership and administration of research activities. Activities include: disseminating information relevant to research grant proposals and/or contracts; processing research proposals; facilitating activities of researchers; assisting in efforts to achieve outside support for faculty for research and promoting and stimulating interdisciplinary research at Faculty level.

#### **1.4 Faculty Research and Publication Committee**

The governing body for research as well as teaching in the Faculty of Science is the Faculty Academic Commission (FAC). The FAC will have a sub-committee entitled Faculty Research and Publication Committees (FRPC). The FRPC consists of three members elected from and by the FAC. All proposals to be endorsed by the FAC must pass through the FRPC. The FRPC will be chaired by the ADRGP and will:

- i) Formulate guidelines and procedures for the submission and evaluation of research proposals, and the conduct of research at the Faculty;
- ii) Scrutinize that proposals follow the guidelines and requirements set by the Faculty and the University at large;
- iii) Evaluate the merits and feasibility of research proposals;
- iv) Deliberate on reviews of research proposals and make recommendations to the FAC

#### **1.5 The Department Research and Publication Committees**

Department Research and Publication Committees (DRPC) are formed by Department Academic Committees. DRPCs will have a minimum of three members elected by and from members of the DAC. A department's DRPC:

- i) Scrutinizes that proposals follow the guidelines and requirements set by the Faculty and the University at large and fulfill the requirements;
- ii) Makes preliminary review of proposals for selecting appropriate reviewers;
- iii) Selects reviewers for research proposal;
- iv) Deliberates on reviews of proposals, and makes recommendations to the DAC

#### **1.6 Sources of research grants**

Research grants may be made available from the Faculty annual research budget, from the University through the Associate Vice-President for Research and Graduate Programs (AVPRGP), from national organizations such as, Ethiopian Science and Technology Commission (ESTC), Regional and international donors and organizations.

For grants that originate within the University and national institutions in particular, and for all grants for which it has information in general, the ADRGP

shall advertise the requirements and deadlines for proposals and ensure that they are followed.

## **1.7 Contractual Research**

Contractual research is defined as research which is conducted at the request of and paid for by companies, agencies, or other organizations external to the AAU. Members of the Faculty of Science may conduct contractual research so long as these contribute in an essential and positive way to the intellectual development of faculty and facilitate the Faculty's interaction with the community. Contractual research should be associated with well-defined strategic objectives, usually in the form of deliverable product(s) or report. Details on contractual research agreements are outlined under section 5.1.

## **2 Initiation, Submission and Review of Research Proposals**

Faculty members who are planning research projects initiate the review process by submitting their research proposals to the chairman of the respective department. The chairman routes the proposal to the DRPC for scrutiny, preliminary review and selection of reviewers.

Inter-departmental research proposals may be simultaneously submitted to the ADRGP and the participating departments. Nevertheless reviews will be conducted at Faculty level.

### **2.1 Format for Research Proposals**

Project proposals shall generally be prepared according to the following outline:

- A. Project title*
- B. Names of investigator(s), academic rank and qualification (CVs should be appended)*
- C. Department*
- D. Summary (Abstract)*

A paragraph summarizing the topic of research, the objective(s) of the study, how the data will be collected, how it will be analyzed, and what results (possible outcomes) are expected.

#### *E. Background/justification/problem statement*

This section of the proposal should provide a clear, concise description of the central problem to be investigated and the questions that will guide the research. It may also discuss points such as how the research relates to the development priorities of the country; the magnitude of the problem and how the research will contribute to its solution; why and for whom the research is important; and whether the research relates to any of the researcher's or the institution's other ongoing or planned activities. This section should provide a brief review of research to date that is relevant to the problem being investigated through this proposal, and discuss how the research project will help to fill a knowledge gap or inform policy.

#### *F. General and specific objectives*

This section should include a general objective (a short statement on the ultimate goal of the research) and specific objectives (the precise objectives of the proposed research that the methodology will address). Objectives should be specific and realistic in terms of time, resources and capacity.

#### *G. Methodology/materials and methods*

The methodology section should describe how each specific objective will be achieved, with enough detail to enable an independent and informed assessment of the proposal. This section should include:

- I. Research tasks: hypotheses, research questions,
- II. Study population and sampling: description of study areas, populations and the procedures for their selection;
- III. Data collection: description of the approaches and methods used to collect information;
- IV. Data analysis: description of data processing and analysing procedures;
- V. Laboratory procedures: descriptions of standardized procedures and protocols and new or unique procedures; and the specific tools that will be used to study each research objective

#### *H. Work Plan/Timeframe*

Work schedule, roles and responsibilities, monitoring and evaluation tools, provide a careful estimate of the time needed to carry out each principal phase of the project, as well as the project's total duration. Indicate possible constraints in adhering to the timetable.

*I. Ethical consideration*

Precise identification of ethical aspects and description on how the study will deal with them- providing a basis for application for ethical clearance.

*J. Capacity Building*

If training is required, indicate what sort of training might be most appropriate and how it would be organized. Indicate how this training would lead to overall institutional capacity building.

*K. Expected outcomes*

Detail the expected outputs of the project (research reports, publications, articles, new methodologies or technology). Include strategies for transferring/disseminating research results to policy-makers when applicable.

*L. Users and Beneficiaries*

This section should describe how research results will be used and discuss the immediate or intermediate users of the results. The impact of research results can also be discussed in reference to existing technical and scientific knowledge and the research capacity of the Faculty.

*M. Strategies of dissemination of research results*

Outline plans for disseminating or implementing the findings of the proposed research and specifics in terms of intended audience and language of communication. Include information on how the research should be presented (seminars, workshops, conferences, meetings) and in what format the information will be disseminated (i.e., reports, scientific publications, policy briefs etc.,)

*N. References*

*O. Project administration and budget*

- i. Salaries: all remuneration, allowances, and benefits to be paid to project staff;
- ii. Research expenses: services and materials (including reference materials) to carry out the research;
- iii. Capital equipment: equipment purchased for the specific purpose of the project;
- iv. Conferences: costs of attending project-related seminars, meetings and conferences that may be organized to disseminate research results;
- v. Consultants: all expenses related to acquiring a consultant for a specific activity within the project;

- vi. Training: costs incurred during a trainee's participation in short courses, post-doctoral training or other scholarly activities;
- vii. Travel: costs incurred by project staff outside of the institute;
- viii. Support services: administrative costs that are not directly related to the research;
- ix. Overhead;
- x. Coordination: expenses related to the coordination of a project to ensure that all concerned follow the objectives and approaches, including budgetary monitoring

*P. Personnel*

List who will be involved in carrying out the project (both from within the institution and any external experts), their roles, time commitments, qualifications, experience and other relevant information; include CVs of the principal professional staff.

*Q. Appendices*

Include appendices as required

## **2.2 Procedures in Review of Proposals**

Proposals submitted to departments must be sent for peer review within two weeks time or returned to authors (following scrutiny and preliminary review by the DRPC). No review process should take more than six weeks from the date of submission. When this is not possible, due to special circumstances, the chairman of the department should inform authors of proposals in writing of the same.

## **2.3 Peer Review of Research Proposals**

Department peer review of proposals shall be required to consider the following key issues in review of research projects:

**A. Significance/relevance**

- I. Is the research testing a sound scientific hypothesis, developing a new technology, seeking to improve or document a new technique, technology or policy?
- II. How unique, original and innovative is the proposed research?

B. Literature Review

- I. Is there adequate data to demonstrate the feasibility or focus of the project?
- II. Does the proposed project demonstrate awareness of the previous and alternative approaches to the identified problems?

C. Objectives

Are the objectives clear and consistent with the problem statement?

D. Contribution

- I. How relevant/important is the proposed research?
- II. How does the project increase knowledge?
- III. Is the research consistent with national goals and aspirations?

E. Research design and methodology

- I. What are the strengths and weaknesses in the design, strategy or methodology?
- II. Does the work-plan follow the most logical approach?
- III. Has adequate time been allocated?
- IV. Is the methodology well described, suitable and feasible? How will the data be managed and analyzed?

F. Results

- I. How significant will be the impact of the results?
- II. What is the probability of success of the project within the time frame?

G. Budget

- I. Is the budget adequate and consistent with specified activities?
- II. What is the partner's contribution?

H. Collaboration

- I. Responsibility and workload of each partner collaborator
- II. Qualifications (including CVs)

I. Monitoring and Evaluation

Project work plan and tools (specify)

J. Dissemination

Are proposed strategies viable?

## **2.4 Review of Special Projects**

Adherence to appropriate national and international laws and standards must be evaluated for projects that involve the collection of genetic resources or require bio-safety procedures or that require ethical clearance. Documents demonstrating adherence to the appropriate policies, laws and regulations must be presented for faculty level review of the projects.

## **2.5 Decision on reviewed proposals**

Decision on reviewed proposals may fall under the categories:

*Approved:* The proposal successfully addresses all of the review criteria. No further action is required from the investigator(s) prior to initiating the study;

*Clarification Required:* The proposal meets most or all of the review criteria but lacks one or more minor requirements that must be addressed in a revised version. The proposal will not require resubmission in a subsequent review cycle.

*Revise and Resubmit:* The proposal fails to meet one or more of the major criteria, but is deemed to be of sufficient potential merit to encourage a resubmission.

*Rejected:* The proposal fails to meet most or all review criteria, and does not have the required scientific, professional or ethical merit

While approved proposals are routed to the SFRPC through the ADRGP, proposals to be revised or rejected are returned to authors of the proposals, with written comments.

Reviewed and resubmitted proposals need to incorporate the required changes and authors of the proposals will need to write a letter or narrative in which they respond, point by point, to the issues raised in the DRPC's decision letter, explaining how they have addressed each issue.

Proposals recommended by departments for approval shall be forwarded to the SFRPC through the ADRGP. When submitted to the ADRGP, the proposals need to be accompanied by all the reviews, reaction of the authors of the proposals, CVs, consent or agreement letters, etc.

The SFRPC will meet at least twice each semester, with dates designated and circulated to all members of the Faculty before the beginning of each semester. Research proposals should be submitted to the SFRPC at least two weeks before

the committee meeting. Any proposal that does not meet this deadline will be reviewed during the next scheduled meeting.

Individuals may be requested to meet with the Committee for clarification of their request or the Committee may contact researchers to clarify questions and concerns regarding proposals prior to the scheduled meeting of the committee.

Proposals recommended by the SFRPC and approved by the FAC shall be routed to the Research Director of AVPRGP through the ADRGP's Office within one week from the meeting of the FAC.

Approved projects shall be sent to the AVPRGP's office complete with filled Grant Data sheet forms for opening an account.

## **2.6 Contract Agreement**

The ADRGP Office shall issue a contract agreement with the researcher(s) prior to executing the research project. The contract agreement shall include the following:

- a. Project's code number
- b. Name(s) of researcher(s)
- c. Title of the project
- d. Duration of the project
- e. Statement indicating number of copies of the final report to be submitted (at least four)
- f. Statement indicating ability and willingness of the researcher to abide by procedures and guidelines for conduct of research in the Faculty.

## **2.7 Extension Requests**

If the grantee(s) find that the project will continue past the terminal date specified in the request, the grantee(s) must apply directly to the ADRGP's Office for extension, not to exceed one year. Subsequent extension requests must be submitted in writing to the ADRGP for approval within one month after the encumbrance date expires, any remaining funds will return automatically to the Faculty for redistribution or other use.

## **2.8 Documentation and Records**

The principal investigator of a project must retain all records of research for three years after the completion of the research. Records may include such items

as proposals, research data and notebooks, progress reports and all related correspondence. The Associate Dean and respective departments maintain an active documentation centre regarding research in the Faculty of Science on individual researches, complete with information on project proposals, expenditures, reports, evaluations and publications.

### **3 Monitoring and Evaluation**

Research requires an effective monitoring and evaluation (M&E) system that enables the assessment of performance, resource utilization, impact and effectiveness of a program. It is, therefore, important that a proper M & E system be implemented to ensure proper accountability.

DRPC will be required to draw up a schedule of visits and shall appoint a competent monitoring team. Such a team would need to have the original project proposal including its budget and a plan of action. The Monitoring and Evaluation (M&E) team shall develop a form and undertake the following M&E tasks:

- i. Evaluate progress of the research at each stage in the plan of action
- ii. Examine the relevance of each activity in fulfilling the objectives
- iii. Assess operational problems and solicit solutions on how to overcome these
- iv. Assess whether scientists are using conventional or standard methodologies for which research projects were approved in the conduct of their work
- v. Assess whether there are any changes or modifications to the original program or plan of action and whether these have been explained
- vi. Where ethics apply, assess if they have been observed
- vii. Assess the application of resources being used e.g. human, financial, equipment, infrastructure and transport
- viii. Assess the degree of participation, involvement and skills development among collaborators
- ix. Assess quality of work
- x. Make specific recommendations

## **4 Progress and Final Reports**

### **4.1 Progress Report**

The DRPC shall determine the appropriate number of progress reports to be submitted by the researcher(s) during the life of the project. Progress reports should cover the following:

- i. overview of the study
- ii. objectives of the project
- iii. stage at which the project is
- iv. actual activities done and a summary of what has, and has not been accomplished at that stage of the study
- v. interpretation of new findings
- vi. summarized results including tables and graphs
- vii. revised plan of the next activities
- viii. operational problems if any and suggested solutions and whether the project objectives are being addressed
- ix. likelihood of the success of the project
- x. financial statement for the period covered by the report showing the budget and expenditure
- xi. an indication of objectives which have not been achieved and indicating reasons.

### **4.2 Final Report**

The final report shall include:

- i. An executive summary
- ii. Acknowledgement of source of funding or any technical assistance
- iii. A detailed table of contents (including a list of figures, tables, abbreviations, acronyms etc)
- iv. An introduction (incorporating the background, problem statement and objectives)
- v. Literature review of what has been locally and internationally/achieved
- vi. Materials and methods, indicating use of resources
- vii. Detailed analyzed data

- viii. Results and discussion section which should include details of analyzed data, relating data to the objectives and past findings, establishing trends and explaining the findings.
- ix. Conclusion, recommendations, take home messages and scope for further work if any
- x. References and Appendices containing supporting data that will strengthen the results and findings.

## **5 Research Agreements and Memorandum of Understandings**

### **5.1 Research Collaboration Agreements and Contract Research Agreements**

A Research Collaboration Agreement is used to govern the relationship when there are two or more parties working together on a research project. It should set out the parties' rights and obligations and summarize how the funding and work is to be divided. It also provides the structure for decision-making, conflict avoidance, conflict resolution and exit.

A Contract (sponsored) Research Agreement is a written agreement used when a company or an organization provides funds to members of the Faculty of Science for an organized research project for clearly stated deliverables.

Among others, Research Collaboration Agreements and Contract Research Agreements should have the following stated:

- Project identification (project title, investigators, amount of fund, etc.,)
- Start and end dates of the project specified
- Scope of work and budget outlined
- Milestones/deliverables and associated payments stated
- Provisions for confidentiality of information
- Right for publication to faculty
- Clearly defined intellectual property and ownership rights
- Property ownership rights for the Faculty on equipment purchased under the contract
- Termination provisions

## **5.2 Memorandum of Understanding (MoU)**

Units of the Faculty of Science may initiate partnership with other institutions to generate reciprocal benefits and enter a Memorandum of Understanding. A MoU provides an umbrella for activities such as faculty, staff and graduate student exchanges, joint research activities and publications, and participation in seminars and academic meetings also through funded projects. Although typically stemming from one particular academic unit, potential benefits for other Faculty units may also be considered when entering an MoU. It is expected that fruitful collaborations will lead to more binding agreements.

Among others, a MoU should have (or should be accompanied by a document containing) the following points:

- A profile of the proposed partner institution, including a description of its particular research strengths and how they complement those of the Faculty of Science.
- An outline of the collaborative activities that have already taken place or are currently underway or are intended with the proposed partner institution.
- A description of the planned joint activities, a list of the faculty members from Faculty of Science and the proposed partner institution involved in these activities, and an indication of the potential sources of funding.
- A description of the possible short and long term benefits of the collaboration, for the academic unit in particular as well as for the partner institution(s).

## **5.3 Memorandum of Agreement (MoA)**

A Memorandum of Agreement (MoA) is a binding document governing the relationships and commitments between two parties that enter into agreement. The following outline may be followed when preparing Memorandum of Agreement with Collaborators.

### **A. Preamble**

Includes:

- Needs, mission and objectives of Addis Ababa University
- Institutional interest for collaboration and networking
- Background/basis for collaboration

- Institutional provision which calls for or permits collaboration with others

Each sub-area should be indicated briefly and precisely.

## B. Articles of Agreement

### i) Definitions

Includes acronyms and terms such as AAU, ADRGP, Senate, etc.

### ii) Areas of collaboration/Cooperation

Includes

- Training
- Staff exchange
- Student exchange
- Research and publications
- Program evaluation
- Resource sharing and upgrading
- Improvement of organization and management

### iii) Specifics about each area of Cooperation (selected from 2.2, above)

In the case of training, for example, the kinds of elements that should be considered include

- Type of training
- Participants
- Duration
- Role of each party (as in funding)
- Certification, if appropriate

### iv) Final Sections

These sections should indicate

- Term of agreement
- Follow-up mechanism
- Provision for renewal, if appropriate
- Conditions and procedures for termination

Research Collaboration agreements and Contract Research Agreements should be co-signed by the investigator(s), head of department and the dean of the Faculty while MoUs and MoAs should be signed by the AVPRGP or designate, upon review and recommendation from the ADRGP of the Faculty.

## 6 Various Formats

### SFRPC FORM I : *Research Proposal Review Form*

(To be filled by the department chairman)

Title: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Department \_\_\_\_\_

Name of Principal Investigator \_\_\_\_\_

| No | Criteria/item   | Rating   |
|----|---|--|
| 1  | Is the proposal reviewed and improved accordingly (where the latter has be suggested)   | <input type="checkbox"/> Yes<br><input type="checkbox"/> No  |
| 2  | Based on the review of the project, is there agreement in the Department that:  |  |
|    | a) The research topic is relevant   | <input type="checkbox"/> Yes; <input type="checkbox"/> No  |
|    | b) The objectives of the study are clearly stated   | <input type="checkbox"/> Yes; <input type="checkbox"/> No  |
|    | c) The described methods are scientifically sound and ethically acceptable (where applicable)   | <input type="checkbox"/> Yes; <input type="checkbox"/> No<br><input type="checkbox"/> Yes; <input type="checkbox"/> No |
|    | d) Deliverables (be they scientific or capacity building) are clearly indicated   | <input type="checkbox"/> Yes; <input type="checkbox"/> No  |
|    | e) Required expertise and essential facilities (apart from inputs to be acquired through the project) exist in the Faculty to execute the project |  |

|   |   |  |
|---|---|--|
| 3 | Have collaborating institutions in Ethiopia (if any) given their written consent?<br><br>Is letter of commitment attached             | _____ Yes<br>_____ No<br>_____ Not applicable<br><br>_____ Yes; _____ No |
| 4 | Have collaborating institutions outside of Ethiopia (if any) given their written consent?<br><br>Is letter of commitment attached     | _____ Yes<br>_____ No<br>_____ Not applicable<br><br>_____ Yes; _____ No |
| 5 | In case of collaborative projects - does the proposal put the Faculty or the University in special commitment difficult to execute    | _____ Yes<br>_____ No<br>_____ Not applicable                            |
| 6 | Has the proposal obtained ethical clearance- or does the proposal fulfill the conditions for ethical clearance?<br>(where applicable) | _____ Yes<br>_____ No<br>_____ Not applicable                            |
| 7 | Is the proposal signed by all the researchers?  | _____ Yes<br>_____ No  |
| 8 | Are the comments of reviewers and departmental minutes attached with the proposal   | _____ Yes; _____ No  |
| 9 | Are CVs of all researchers attached?  | _____ Yes; _____ No  |

\_\_\_\_\_  
Name of Department Chairman

\_\_\_\_\_  
Date

Department Seal

**SFRPC FORM II: Research Proposal Review Form**

(To be filled by the reviewer- Faculty level)

Title: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Department \_\_\_\_\_

| No | Criteria/item   | Rating  |
|----|---|---|
| 1  | Is the subject of the research within the mission of the Faculty                            | _____ Yes<br>_____ No                         |
| 2  | Is the research topic relevant?   | _____ Yes<br>_____ No                         |
| 3  | Are the objectives of the study clearly stated?   | _____ Yes<br>_____ No                         |
| 4  | Are the methods described scientifically sound and ethically acceptable (where applicable)? | _____ Yes<br>_____ No                         |
| 5  | Is the proposal reviewed by the initiating (core) Department?                               | _____ Yes<br>_____ No                         |
| 6  | Does the proposal document include reviewers' comments and information on reviewers?        | _____ Yes<br>_____ No                         |
| 7  | Have collaborating institutions in Ethiopia (if any) given their written consent?           | _____ Yes<br>_____ No<br>_____ Not applicable |
| 8  | Have collaborating institutions outside of Ethiopia (if any) given their written consent?   | _____ Yes<br>_____ No<br>_____ Not applicable |

|    |   |  |
|----|---|--|
| 9  | In case of collaborative projects - does the proposal put the Faculty or the University in special commitment difficult to execute?   | <input type="checkbox"/> Yes<br><input type="checkbox"/> No<br><input type="checkbox"/> Not applicable |
| 10 | Has the proposal obtained ethical clearance- or does the proposal fulfill the conditions for ethical clearance?<br>(where applicable) | <input type="checkbox"/> Yes<br><input type="checkbox"/> No<br><input type="checkbox"/> Not applicable |
| 11 | Is the proposal signed by all the researchers?  | <input type="checkbox"/> Yes<br><input type="checkbox"/> No  |
| 12 | Are CVs of all researchers attached?  |  |

Recommendation:

- Accepted
- Accepted on conditions
- Rejected

Remarks:

---



---



---

***SFRPC FORM III : Research Proposal Review Status Sheet***

|  |  |
|--|--|
| Title of the proposal  |  |
| <hr/> <hr/>  |  |
| Principal investigator   |  |
| Investigator's Department  |  |
| Date the FRPC discussed the proposal   |  |
| FRPC's Recommendation  | <input type="checkbox"/> 1. Approved the proposal<br><input type="checkbox"/> 2. Approved on conditions<br><input type="checkbox"/> 3. Rejected the proposal<br><input type="checkbox"/> 4. Approved with recommendations<br><input type="checkbox"/> 5. Other |
| FRPC minutes where detailed comments are available                           |  |
| FRPC Chairman signature  |  |
| Faculty Academic Commission minutes  |  |
| Dean's Signature   |  |
| Forwarded to the Associate Vice President for Research and Graduate Programs | Date   |

## **7 Acknowledgements**

In preparing this document,

- several documents obtained from the internet on policies, procedures and formats used in the conduct of research in universities in USA; and
- several documents on policies, procedures and formats so far used in the conduct of research by AAU

have been examined. The Committee has taken the liberty in adopting some of these policies, procedures and formats with slight modifications.