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Internal Quality Assurance Cell

Policy for Promotion of Research

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1. Brief Statement

Dr. Babasaheb Ambedkar Marathwada University (BAMU) is committed to the pursuit of excellence in research and aiming to spread the national education policy across all the disciplines (Science and Technology, Social Sciences & Humanities, Commerce and Management and Interdisciplinary Studies) and lead across the spectrum of science and technology, humanities and social responsibilities. Our commitment in the area of interdisciplinary research and academic activities is reflected in the sustenance of both applied research and basic research which may yield a long-term impact. BAMU ensures that all the core and inter disciplines flourish in research by adopting the highest norms and standards of a scholarly undertaking. This document provides detailed elaboration of research policy and promotional activity of Dr. Babasaheb Ambedkar Marathwada University (BAMU).

This document outlines the principles that should be taken into account while planning and conducting research. The principles that should be followed strictly while recording, reporting and applying the results produced are emphasised. The University believes that research, consultancy, and extension activities are integral part of the academic programme and promotion of research has been synthesized in its academics.

2. Objective

Our core strategies are to tackle the challenges of 21st century in areas that are vital to the technological advances, human health, and environment through our dedicated efforts in core and multi-disciplinary research. This University has made persistent efforts to align its research focus with the national importance of achieving technological self-reliance in all thrust areas identified by the University.

Our specific objectives are to -

- Provide proactive research culture and state-of-the-art infrastructure
- Create the culture for inter-departmental and inter-university collaborations for inter – disciplinary/multi-disciplinary research
- Publish research papers in high-quality journals of national and international repute, file patents and transfer technologies to relevant industries
- Create and promote quality human resources (UG and PG students, research scholars and faculty members) for scientific research
- Promote academic and industrial collaborations involving active and mutually beneficial R&D projects
- Raise the standards of the University to stand among the premium Universities across the globe
- Promote globalization of research and education to increase the academic and research horizon of the University

3. General Principles

The way in which research is planned and executed, the results are recorded and reported, and the benefits are disseminated, applied and exploited will be decided by the SOP of Research Policy.

Excellence in research can only be achieved if researchers at all levels are nurtured, trained and supervised systematically in a conducive research culture that encourages open discussions and debate which will lead to quality research output. Team leaders of each team at respective level are responsible for building a platform of academic freedom for innovative thought process, motivating young researchers and ensuring them to gain enough skillset for quality research output.

Creation of network of experts from academic institutions and Industries for mentoring and systematic nurturing structures the integral framework for quality research practice. Steps for quality research include continuous monitoring and upgrading of training and supervision strategies for researchers, regular checks on recorded data and notebooks, and occasional checks on the day-to-day conduct of routine business of research laboratories.

4. Planning the research

All research initiatives of the University should be conceived, designed and implemented according to the highest standards. The following would architect the mainframe for the same-

- Celerity in the idea generation and its subsequent progression
- Clarity in the documentation proposal plan of investigation along with proper justifications and any subsequent modifications.
- Proper distribution of roles and responsibilities of each researchers (in case of collaborative research activities) along with benefits of the outcome of research.
- Clarity in the policy of protection of intellectual property rights.
- Adherence to the safety practices and ethical standards.
- Securing all necessary ethical and regulatory approvals.
- Assessment of the available resources and resources needed to ensure the quality research output
- Policy for optimised utilization of resources (recurring and non-recurring)
- Regular review for SOPs for continuous improvement.
- Regular review of the research progress to identify shortcoming in the research processes and to celebrate the research achievements.

5. Conducting the research

- Each person involved in the study should be familiar with the legal and ethical issues involved in the study.
- Equipment used for investigation should be appropriate and of adequate capacity. All equipments should be calibrated regularly.
- A standard operating procedure (SOP) should be maintained for all the equipments. There should be easily accessible instructions for the safe shutdown of equipment in case of emergency. Do's and Dont's should be clearly specified.
- SOP should be documented for all methods / techniques to ensure proper and consistent collection of data.
- All instructions should be written in simple language, readily accessible and ideally in a standardised format.

There should be clarity in responsibilities, accountability as well assignment of research output research programme, wherever relevant:

- Data and samples used or created in the course of research
- The results of the research
- IP to be generated etc

The responsibility and procedures for the storage and disposal of data and samples should be made clear in the beginning of investigation (Research Project). Any research collaboration agreement relating to the research should contain some clauses describing roles, responsibilities and declarations. Researchers should keep clear and accurate records of the procedures followed and the approvals granted during the research process, including records of the interim results obtained as well as the final research outcomes. This is necessary for reporting research results and its outcome. Properly maintained logbooks of each experiment may be used in evidence when establishing ownership of inventions.

All investigators should follow a practice of data recording in the prescribed format so that it allows a complete retrospective audit, if necessary. Data should be stored safely, original data/images should be recorded and retained. This is particularly important when data/images are subsequently enhanced. Both original and enhanced data/images should be stored for future processing. Over-enhancement or over-interpretation of images must be resisted. Confidentiality of data and related information is also important if there is a potential for commercial exploitation.

Retention of accurately recorded and retrievable results is essential for research and subsequent processing. Primary research data must be retained in their original form. Researchers who are leaving the University and would like to retain data for personal use must get permission from their team leader or head of the department. This data is important even after its publication in the form research articles in the Journals of repute.

All raw data should be recorded and retained in indexed laboratory notebooks (log books) with permanent binding and numbered pages or in an electronic dedicated notebook. Machine printouts, questionnaires, chart recordings, autoradiographs etc. which cannot be attached to the

main record should be retained in a separate ring-binder/folder that is cross-indexed with the main record. Records in logbooks should be entered as soon as possible after the data are collected. Recorded data should be identified by the date of the record and/or date of collection. Supervisors should regularly review and endorse the logbooks of researchers to certify that records are appropriate, complete and accurate. Computer generated data should be backed-up regularly; duplicate copies should be held on a separate storage disc in a secure but readily accessible archive. Wherever feasible, a hard copy should be made of important data for ready reference. Copies of relevant software, particularly the version used to process electronic data, must be retained along with the raw data to ensure future access.

6. Openness

The university encourages researchers to be as open as possible in discussing their work and results with other researchers and to the public while recognizing importance of their research output and its protection for intellectual property rights (IPR). The aim of disseminating research and research output is to increase knowledge and understanding and to create awareness among the other researchers for quality research.

Once the results have been published, the University expects the researchers to make the relevant data and the materials available to other researchers, on request. However, it should be reliable with any ethical approvals and consents which cover the data and materials, and any intellectual property rights associated with those publications. Procedures for managing the transfer of material in and out of the University need to be as per the standardised procedure. It is recognized that publication of the results of research may need to be delayed for a reasonable period in order to protect the intellectual property arising from the research. Any such periods of delay in publication should be kept to a minimum and this should normally be no more than 3 months. Therefore, once the results are in hand, the researchers should file provisional patents to protect their invention.

Researchers should be careful when discussing work that is not complete or has not been published, particularly if it has not undergone peer review. Exchange of confidential information by e-mail is not recommended, especially if patent applications are anticipated.

7. Professional guidance and legislation

The university expects all researchers including students (UG / PG), research scholars and faculty members to observe the standards of best research practices being followed by other institutions and set out in guidelines published by scientific and learned societies, and other relevant professional bodies.

All researchers should be aware of the legal requirements, which regulate their work noting particularly health and safety legislation and data protection.

8. Leadership and cooperation

Vice Chancellor of the University, Director of Research Centres, Head of the Departments of various academic Departments, and senior colleagues should ensure that a research atmosphere of mutual cooperation is created in which all members of a research team are encouraged to develop their skills and in which the open exchange of ideas is fostered.

9. Supervision

The University provides an appropriate direction of research and ensures that research leaders are trained in supervisory skills so that they will be able to groom the researchers to the highest level. Research supervisors should ensure all round development of research scholars at stages of the research process, including outlining or drawing up a hypothesis, preparing applications for grant-in-aid, protocol design, data recording and data analysis.

10. Training

The University will prepare strategic plan for continuous training programme at various levels to enable students and researchers to understand and adopt best practices in research as quickly as possible. Supervisors will encourage students and colleagues to attend relevant courses whenever offered as a part of their overall career development. Some of the indicative training programme are:

- Literature review and formulation of hypothesis
- Research design
- Record keeping
- Data protection
- Regulation and ethics; Approvals and consents
- Hands-on training
- IPR awareness
- Data management

11. Primary data/samples/equipment

Data generated in the course of research should be kept securely in paper as well as electronic format. Backup records should always be kept for data stored on a computer. Each research scholar will maintain the confidentiality of the data recorded during experiments and should discuss with the supervisors before disclosing the content outside the research group.

Researchers should report any changes in the direction of sponsored research to the sponsoring agency or any other relevant body. Research scholars will discuss any change in direction of the research with the sponsoring agency prior to its implementation.

12. Intellectual Property

Research scholars will be made well aware of IPR and related issues through regular awareness programme. Once a researcher has a proof of concept of his/her investigations he/she should discuss in the respective research group and consult respective research supervisors and sponsoring agency (if any). With the help of IPR cell of the University, the researcher should file an application (provisional) to protect their claim. Once the application is filed, researchers must update the Intellectual Property Cell (Coordinator of the program or the Director) about the application and can seek guidance for subsequent procedures and formalities. Researchers must also inform to the sponsoring agency if they have been recommended to do so. Once the researcher has complete data out of detailed experimentation and deliberations, application with complete specifications should be filed in consultation with IPR cell.

The research which is being carried out in the University as well as through the funding from government agencies is done for public benefit and not for any personal benefits. However, researchers should explore to convert their laboratory research into commercial product so that the issue of financial sustainability could be addressed. Moreover, industrially sponsored research programs with definite objectives of finding solutions will have commercial gains. Consideration should be routed in this direction during research design.

13. Dissemination and publication of results

The University encourages publication of and dissemination of results of high-quality research but believes that researchers must carry out this responsibly and with an awareness of the consequences of any such dissemination at wider and internationally recognised platform such as SCOPUS, Web of Science, PubMed, Indian Citation indexed Journals and Books with ISBN numbers having National / International reputation.

The University will ever try to ensure that sponsors understand that researchers must have academic freedom and sponsors should not discourage publication or the dissemination of research or

research findings. The University recommends that every effort should be made to inform the sponsors of any potential publication or dissemination of the research findings. This will enable the sponsor to have accurate information to protect any arising intellectual property or plan their own public relations, in conjunction with the University.

Researchers should take into account the following guidelines when publishing or disseminating their research or research findings including any plans they may have to publish or publicise research in conferences, seminars, workshops or websites :

- The sponsoring agency should be notified in advance when the research might be published, publicised or disseminated.
- Researchers should discuss their research finding in the respective groups and get it reviewed prior to the submission for publication.
- Researchers should resolve the IPR benefits (its distribution) issues within the group prior to the submission.
- Researchers should ensure the plagiarism check prior to the submission and resolve the issues (if any)
- All funding sources must be acknowledged in any publication or publicity.
- Results of research outcome should be published in an appropriate form, usually as papers in refereed journals (such as SCOPUS, Web of Science, PubMed, Indian Citation indexed Journals).
- Anyone listed as an author on a paper should accept responsibility for ensuring that he or she is familiar with the contents of the paper and can identify his or her contribution to it.
- The contributions of formal collaborators and all others who directly assist or indirectly support the research should be both specified and properly acknowledged.
- Work should normally be published as a coherent entity rather than a series of small parts unless there is a legitimate need to demonstrate first discovery by publishing preliminary data.

- Quality rather than quantity is paramount; the proliferation of multi-author papers to increase quantity should be discouraged.
- Authors should not publish the same data in different journals.
- If an error is found that degrades the worth of published findings, the principal author must take efforts to publish a correction as soon as possible
- Where the findings are found to be in serious doubt, a retraction should be published speedily.
- Where fraud is suspected it should be dealt with the procedure dealing with "Misconduct in research".

14. Integrity

The University provides an adequate structure to promote and disseminate good research practices in the campus, strongly emphasizing integrity and rigor in research and expects that the researchers adhere to the highest standards of integrity. Researchers should be ethical and honest to their own course of actions while pursuing research and their responses to the actions of other researchers. This applies to the whole range of research activities including designing of experiments, generating and analysing data, publishing results, reviewing the work of other researchers and applying for grants. The direct and indirect contributions of colleagues, collaborators and other contributors should be appropriately acknowledged. Researchers are accountable to the society, their profession, the institutes where the research is taking place, the staff and students involved and in particular, the sponsoring bodies.

Jeopardising research integrity can collapse the advancement of knowledge, society and human health. Hence, researchers are expected to understand and apply the following principles:

- Plagiarism, deception, fabrication or falsification of results is regarded as a serious disciplinary offense.
- Researchers are encouraged to report cases of suspected misconduct and to do so in a responsible and appropriate manner.

15. Conflict of Interest

University would ensure that all researchers in various research groups will declare no conflict statements right in the beginning of commencement of any research initiatives. A conflict arises when a person's judgment concerning a primary interest, such as scientific knowledge, could be unduly influenced by financial gain or personal advancement. Researchers must pay as much attention to perceive potential conflicts of interest as to actual conflicts. How one is perceived to act, influences the attitude and action of others; and the credibility of scientific research, to larger extent.

Researchers should declare and manage any real or potential conflicts of interest, both financial and professional. Areas of potential conflict include:

- Where researchers have an existing or potential financial interest in the outcome of the research.
- Where there is a personal or private practice benefit, significantly dependent upon the outcome of research.
- Where the researcher's professional and personal gain arising from the research may be more than usual for research.

16. Sources of information

University will provide adequate resources to all researchers for following purpose –

i) Adopting good research practices,

ii) Interpretation of data generated from high-end equipments

iii) Publications of research outputs

iv) Commercialization of research outputs etc.

Some of the examples for sources of information and data are -

- The Office of Research Integrity, USA
- MRC good research practice.
- University of Cambridge good research practice.

- WT/DBT India Alliance – Guidelines on good research practice.
- Academic Search
- Aerospace & High Technology Database
- Analytical Abstracts
- Analytical sciences digital library
- Anthropological Index Online
- CiteSeerX
- Index Copernicus
- SCOPUS
- Web of Science
- Indian Citation Index

17. About Misconduct

1. Principles.

- This policy is designed to support the research activity of Dr. Babasaheb Ambedkar Marathwada University
- The University is committed to ensure that investigations are carried out as expeditiously as possible, at the same time ensuring the utmost degree of thoroughness.
- All members of research group (viz. Research Scholars and faculty members) will work to ensure the prompt progression of the process in stipulated time and will never cross the deadlines where time limits are indicated.
- Employees / members of research groups accused of Scientific Misconduct ("Respondents") will be provided with a copy of this procedure and will be informed in writing of the details of the allegation.

- Investigation will be initiated against the complaint (according to the prevailing procedure) even if respondent resigns or leaves the university.
- The University will take disciplinary action against any individual who attempts to influence, victimize or intimidate the individual making the allegation of Scientific Misconduct (the "Complainant") or witnesses.
- The University is committed to protect its employees from malicious accusations and will take action against any individual(s) responsible for such allegations.
- Individuals shall cooperate in the review of allegations and the conduct of assessments and investigations. They have an obligation to provide relevant evidence to the Head of the Institution or such other person who, in his absence, is designated to receive and enquire on behalf of the University into allegations of Scientific Misconduct (the "Director").
- Proven misconduct in research is considered as a serious or gross misconduct and normally merit dismissal.

2. What constitutes misconduct?

Research misconduct or fraud in science refers to the fabrication, falsification, plagiarism and deception in proposing, carrying out or reporting results of research and deliberate, dangerous or negligent deviations from accepted practice in carrying out research. It includes failure to follow established protocols, if this failure results in unreasonable risk or harm to humans, other vertebrates or the environment. It shall also include facilitating of misconduct in research by collusion in or concealment of, such actions by others, and any plan or conspiracy or attempt to do any of these things.

Misconduct does not include honest error or honest differences in interpretation or judgment in evaluating research methods or results, or misconduct unrelated to the research process.

- Fabrication – reporting of experiments never conducted

- Falsification – Misrepresentation or suppression of data to project the desired result
- Plagiarism – reporting another's data as one's own
- Fraud – Deliberate suppression of previous work in publications to claim originality or to avoid quoting previous publications contrary to present results.
- Breach of confidentiality, i.e., presenting as one's own ideas or data obtained from privileged access to original grants, manuscripts etc. is also considered a misdemeanour in the same category.

3. Reporting of cases of scientific misconduct.

- All employees or individuals working within Dr. Babasaheb Ambedkar Marathwada University, Aurangabad are required to report observed, suspected or apparent Scientific Misconduct to the Vice Chancellor / Pro-Vice Chancellor / Dean / Head of the Department in accordance with this policy.
- If an individual is unsure whether a suspected incident of misconduct falls within the definition of scientific misconduct, he or she should discuss this with the Vice Chancellor / Pro-Vice Chancellor / Dean / Head of the Department informally.
- Dr. Babasaheb Ambedkar Marathwada University will endeavour to organize seminars and workshops at regular intervals to create awareness among the research scholars on issues related to integrity in the conduct of research. The website will provide access to articles, debates and examples of such misconduct to sensitize research workers about nature of questionable research practice.

4. Reporting and evaluation of the complaint.

The charge of misconduct has serious implications for all concerned. Therefore, investigation related to the review of alleged misconduct will be kept confidential to the maximum extent possible. While investigating an allegation of misconduct, caution will have

to be exercised to distinguish between differences in interpretation or unintended errors from the misrepresentation of information. Thus, the procedure adopted to address the issue of misconduct will necessarily have to be flexible and determined on a case-to-case basis.

- Reports of alleged misconduct are to be made directly to the office of the Dean (Respective faculty).
- If a complainant makes an allegation to a Dean (Respective faculty) informally, the Dean may ask them to put such allegation in writing.
- Misconduct may be reported by either a staff of the Dr. Babasaheb Ambedkar Marathwada University or anyone else. The identity of the complainant will not be revealed at this time.
- The Dean (Respective faculty) shall, either himself or through an officer who has been delegated the responsibility, shall cause to investigate (a) assess the allegations of research misconduct to determine if they fall within the definition of research misconduct and warrant an inquiry on the basis that the allegation is sufficiently credible and specific so that potential evidence of research misconduct may be identified, and (b) oversee enquiries and investigation.
- A preliminary evaluation of the complaint will be made by the Dean (Respective faculty) which may include consultation with other colleagues either independently or through the constitution of a committee and if the findings indicate that there are no reasonable grounds for the allegation, the complaint will be dismissed.
- Written report stating the reasons for the dismissal shall be policy documented and maintained in the office of the Dean (Respective faculty), but will not enter the subject's confidential file. The complainant will also be informed of the decision to dismiss the complaint.

- If the preliminary evaluation indicates that the allegation of misconduct warrants a full investigation, the following processes will be initiated with the appropriate records of procedures.

5. Investigation

- The person against whom the complaint is being made (respondent) will be informed of the allegation.
- The Dean (Respective faculty) will appoint a committee to conduct a full investigation into the allegations of misconduct.
- The committee will comprise of a Chairman, and 2 members, at least two of which will be experts from outside. The committee will be invested with complete confidentiality and will not be permitted to interact with Press or other faculty members individually during the course of the investigation. The committee is expected to function within the full cognizance of the rights of the respondent as well as the complainant.
- The scope of the committee shall be:
    - To investigate the accuracy of charge of misconduct.
    - To assess the extent and nature of alleged misconduct.
    - To correlate the relevance of any other material or information revealed during the course of the investigation into the alleged instance of misconduct.

6. Process of enquiry

The committee will be given access to material that is required to complete the investigation with due diligence and accuracy which will include grant approvals, reports, primary data, electronic records, manuscripts and any other material requested and considered relevant to the investigation. The committee will be given access to laboratory and will be permitted to interview the complainant, the respondent and any other laboratory staff which

the committee considers necessary to gather information. The committee is expected to complete the investigations and report submission within a period of 60 (sixty) days.

7. Outcome of the investigation

- The committee will submit its report with a recommended course of action to the Dean within a week of completing the inquiry, explaining the modalities of the investigation, the source and method of obtaining information relevant to the investigation, the conclusions reached and the basis on which the conclusions are reached.
- A copy of the report will be provided to the respondent and an opportunity will be given to him to comment in writing on the report and its findings within 15 days. The written comments will be attached as annexure to the original report.
- The Dean will discuss the report with Head of the Group. If the faculty against whom the complaint was lodged has been proved to have engaged him in research misconduct, the Dean will take appropriate action, with the approval of the Board of Deans and the Vice Chancellor, which will be communicated to the Individual and will be entered in the personal file and service book.
- The individual may appeal to the Board of Deans against the decision of the Dean and the Board's decision will be final and binding on the individual.

8. Safeguard against false allegations

Efforts should be made to safeguard the interests of the complainant. If it is established that the complaint itself was false and was done with malaise intentions, Dean will formulate an appropriate action against the individual who lodged a false complaint. The person who has been charged with wrong allegations may appeal against the decision to the Board of Deans. The decision of the Board is final and binding on the individual.

18. Promotion of Research

- Innovation and Incubation Centre of the University (Atal Incubation Centre and Bajaj Incubation centre) will arrange familiarization workshops, hands-on training, IPR awareness workshops, start-ups awareness workshop to encourage the research scholars and faculty members for converting laboratory research into commercial products.
- Financial assistance will be given to the faculty members to carry out Proof of Concepts in the lab. With the proof of concepts, they can apply for funded projects from Government Funding agencies.
- Seed money will be given to the faculty members of Dr. Babasaheb Ambedkar Marathwada University and its affiliated Colleges to set up their own research laboratories for carrying out research.
- Seed money will be given to the research scholars of Dr. Babasaheb Ambedkar Marathwada University for their innovative ideas which can be converted into commercial product
- Funding will be given for the pilot projects of the Faculty members of the Dr. Babasaheb Ambedkar Marathwada University under Selective Excellence Initiative Program.
- Financial assistance will be given to the faculty members and students to register patents for their innovative ideas/products and for submission of copyrights.
- Financial assistance will be given to the faculty members of Dr. Babasaheb Ambedkar Marathwada University for attending research symposium / conferences / workshop within the country and abroad.

- Special study leave will be sanctioned to the faculty members of Dr. Babasaheb Ambedkar Marathwada University who will be visiting overseas universities in the capacity of Post Doc fellow, Visiting Researcher, Visiting Professor etc
- Special incentives in the form of financial assistance will be given to the faculty members for publication of their research output in the peer reviewed Journals of National and International repute (SCOPUS, Web of science, SCI, PubMed and Indian Citation Indexed Journals)
- Special incentives will be given to the faculty members for bringing funding from Government (UGC ICSSR, CSIR, DST, DBT, DRDO, BRNS etc) and non-government sources.
- Financial assistance will be given to the University Departments for organization State/National/International level conferences/seminars/workshops.
- Special incentives in the form of financial assistance and Award (Research Professor Award) will be given to the faculty members for their significant contribution in the area of research publications, citations, research funding and national / international recognitions.
- Special incentives in the form of financial assistance and Award (Best Teacher Award) will be given to the faculty members for their significant contribution in teaching – learning process.
- Heads of the Department and Faculty members will be advised to initiate collaborative efforts to bring funding from various funding agencies for augmentation of infrastructure under UGC-SAP, DST-FIST, UGC-CPEPA schemes.
- Special incentives will be given to the faculty members who have national / international recognitions in terms of fellowships / awards.

- Special incentives in the form of financial assistance will be given to the faculty members for publishing high impact factor research papers in National / International Journals of high repute (₹10,000/- per research paper published in SCI / SCOPUS indexed research Journal and ₹5,000/-per research paper published in Indian Citation Indexed research Journal)
- Each University Department (those who are contributing significantly in Research) will be given at least Post-Doctoral Fellow.
- More number of MoUs will be signed with Universities and industries for collaborative research (Students and Faculty Exchange, Joint Publications, Organization of Joint Conferences / workshops etc)
- UG and PG students will be encouraged to join overseas Universities on Short Term and Long Term basis (One semester) and special provision will be made to compensate their academic loss.
- Research scholars will be encouraged to join overseas Universities on Short Term and Long Term basis (Six months to One Year) under various joint projects and schemes of various funding agencies.
- Students will be encouraged to participate in innovation competitions in India or abroad.