Definitions

Researcher: A person who studies a subject, especially in order to discover new information or reach a new understanding.

Principal Investigator (PI): The person(s) in charge of a project for which research grant has been accrued. The principal investigator prepares plan for the study/ research for which the grant has been paid. The principal investigator also analyzes the data and reports the results of the trial or grant research.

Co- Principal Investigator (Co-PI): An individual working in partnership with the Principal Investigator in the management, development and/or execution of the project. A co-investigator typically devotes a specified percentage of time to the project and is considered key personnel.

Type of Research:

Funded Project: Research carried out under the aegis of a particular extra mural or internal research grant that is focused to meet the objectives that have been approved by the funding agency at the time of inception of the project.

PhD/Master's research: The candidate who is carrying out PhD/Master's on a specific topic that has been approved by research degree committee and board. The topic of research is decided by the student in consultation with the supervisor/guide.

Respondent: In case of any dispute the PI or guide of the project or any higher authority who has the knowledge of the research activity and can address the queries or give inputs ina way to resolve the dispute

Research Data: Any data/information collected and chronicled by the person related to the research can be termed as research data. It can be in either written/printed form, as audio/video material collected to support the hypothesis/objectives that are being pursued by the researchers.

Patents: A patent is an exclusive right granted for an invention, which is a product or a process that provides, in general, a new way of doing something, or offers a new technical solution to a problem.

Publication:publication is defined as the dissemination of views throughReports, peer reviewed Scholarly Journals, Literary Magazines, Letters to the Editor, patent publications, newspapers articles of national/international fame, that have been transferred and published through agreement as per the rules guiding the particular publication.

Guru Nanak Dev University – Research Policy

1. Introduction

Scope/ Applicability of the Policy

The Research Policy Guidelines of Guru Nanak Dev University (GNDU) will be applicable to the faculty, staff, researchers and students of the university campus, regional campuses and constituent/university/affiliated colleges involved in any form of research activity.

Policy Statement

Since the establishment of GNDU in 1969, GNDU has been committed in imparting education and to be a research and innovation driven University as can be judged from its h-index. The aim of this university is to see India become a national and global knowledge hub through education, research and innovation. To attain this goal, it is absolutely important to pursue cutting-edge basic, target oriented, and applied research in a transparent, responsible and ethical manner so that new advancements in creating knowledge, and development of novel processes, theories, techniques, technologies and products can be achieved. This policy provides a set of guidelines for conduct of research and is applicable to all the stake holders specified above in the scope.

Rationale

- GNDU has been conferred "University with Potential for Excellence" status by the UGC and offers an environment that is conducive for research. GNDU considers dissemination of knowledge and conduct of scholarly research as the central functions of the University. This requires that the faculty, scholars and students are guaranteed a certain degree of freedom and at the same time they too accept certain obligations and responsibilities.
- The research policy of GNDU ensures that individual scholars are free to work in their areas of research, and collaborate with other faculties and centres within or outside the university. They are also free to form their own opinion, theories, and explanations to support their research results while adhering to research ethics and responsibilities.
- It is important to emphasize that all research reports and publications arising out of the research conducted in GNDU must carry the correct affiliation ('Guru Nanak Dev University') in the credit/address tag lines in the published work (research papers, books/book chapters, articles, conference proceedings, reports etc.) published in printed or online modes.
- The Research Policy does not allow the use of a research or survey methodology or technique that is in violation of professional ethics pertaining to the health, safety, privacy, and other personal rights of human subjects or to the infliction of injury or pain on animals and living organisms. In the use of such subjects, clearance from the ethical committee will be mandatory.
- The above principles circumscribe the University's role with respect to University- connected research. They are not intended to diminish the individual researcher's personal responsibility to assure that the conduct of research, the sources of funding for the same, and its perceived applications are consistent with the individual researcher's judgment and conscience, and with both established professional ethics and national security and national interest. For example, all research involving genetically modified organisms (GMO)/ living modified organisms (LMO) and recombinant DNA (rDNA) materials, human subjects etc. shall be conducted in

compliance with the latest rules as prescribed by the Department of Science and Technology (DST), India and other guidelines issued by the Department of Biotechnology (DBT) and other such agencies from time to time. There are similar guidelines issued by the Ministry of Electronics and Information Technology, Government of India. Research in such areas will be undertaken with the approval of the appropriate statutory body.

Research Objectives

GNDU encourages its faculty to define or pursue specific objectives/strategies for building research capacity, identify research goals that are consonant with the objectives of the University. In addition, to promote research and collaboration, the university encourages its faculty members to independently apply for funding from different agencies to meet their research objectives as well as to participate in both government-funded and privately-funded projects. They are further encouraged to engage in academic and professional activities including public service and consultancy that may ultimately benefit the individual as well as the GNDU. All research activities should be undertaken in compliance with theprovision of the University Research Policy.

The GNDU research objectives are to -
- Undertake research in novel and innovative areas to address national and local issues as well generate new knowledge.
- Establish centres of excellence for intellectual creativity backed by vision and professional ethics.
- Undertake futuristic target oriented research and development projects to facilitate trust building between academic and industry or other agencies in order to provide solutions to the society and nation as a whole.
- Lay special emphasis to do research in areas such as environment waste minimization, energy conservation, alternate energy, water and waste water management, sustainable habitat, solid economics and cultural concerns sources, etc. to benefit the society.
- Translate new knowledge, innovations, technologies and tools emerging out of research conducted at GNDU into products and processes for commercialization or for societal benefit;
- Protect Intellectual Property (IP) generated as a result of research conducted at GNDU;
- Encourage and facilitate research collaborations between different faculties of the University along with reputed institutes, universities and research organizations both in India and abroad;
- Enhance the research profile of the University by effective dissemination of research activities and achievements of the University at all levels to maximize the impact and recognition of research done at GNDU at national and international levels.

2. Research Management

The office of the Director Research will take care of the various aspects of research management. While it is expected that the researchers will generate their funds for undertaking the research activities, the University may also support the research activities for new faculty members in the form of "Seed Grant" if the same has not been taken from any other agency. The amount of "Seed Grant" will be decided from time to time. The office of Director Research may also facilitate designing of custom-made faculty development programmes in advanced areas to improve upon the skills of GNDU faculty and researchers and help them overcome their weaknesses in order to maximize their contribution to the University.

Ideally, there should be no conflict between commitment of faculty and research staff to the University and other activities in which faculty and research staff members may engage themselves. It

is expected that faculty and Principal Investigators (PIs) will conduct their affairs so as to avoid or minimize such conflicts of interest, and should there be any actual, potential or perceived conflicts between one's private beliefs and interests and her/his professional obligations to GNDU, such matters should be properly and promptly revealed by the Faculty, Staff and PIs to the Office of the Director Research so as to resolve any issues before engaging in research, development and innovation activities. A committee approved by the Vice-Chancellor constituted to resolve such issues.

3. Overview: Rights & Responsibilities

The general principle in this matter is fairly simple and straightforward. If a faculty member, research staff or Investigator has a query or a question about whether an activity is permitted under the Research Policy, the faculty member or Investigator should disclose the potential or appearance of conflict to and seek guidance from the office of Director Research.

Faculty members have the right to disseminate the results and findings of their individual or collaborative research without suppression or modification from external sponsors beyond the specific undertakings or provisions that may be written down and agreed upon by the sponsoring agencies, Universities and researchers.

The faculty and researchers may also engage in external consulting activities, subject to the University's rules, regulations and limitations, for which a policy has already been adopted.

3.1 Responsibilities of Project Investigator (PI)

Project Investigators must be aware of their obligations to staff and students working as part of the research team. It is particularly important that at least annually, each faculty member should review intellectual and tangible property rights and responsibilities (for management of data in all media, for proper authorship attribution, etc.), with all members of the group under his or her direction, including staff, students, postdocs, administrative staff and visiting scholars. It is the responsibility of the faculty to inform the members of his/her research group about the research and publication ethics, which should be strictly followed.

Each member has the right to know who is sponsoring the research and supporting his or her salary or stipend because GNDU believes in academic transparency.

Each faculty member is responsible for advising and helping members of his or her team in appropriate health, and safety procedures that must be taken to work in a particular area of research, and for management of those procedures in his or her office or laboratory, studio or other workplaces.

PIs are directly responsible to assure the periodic inspection of lab facilities, take corrective measures – if required, and to cooperate in any inspections by safety personnel or by external agencies. Faculty members also need to ensure that approved research protocols for the use of human and animal subjects in research are obtained and followed.

PI's Responsibilities to Sponsors/funding agencies

Although the legal agreement funding a sponsored project is between the sponsor or sponsoring/funding agency and the GNDU, the overall responsibility for management of a particular project within funding limitations rests with the PI. Funds must be spent judiciously to remain within the restrictions of the contract or grant.

If any overdraft should occur, or change of head is needed, it is the responsibility of the PI to get it approved both by within the administration and also by the funding agencies.

PI's Responsibility for Research Equipment

The control, upkeep and record-keeping of both GNDU-funded and Government-funded equipment is mandatory under the university rules as well as under the externally funded contracts and grants. PIs are responsible for securing necessary approvals for the purchase of the equipment, proper tagging, and maintaining inventory, utilization of equipment and peripherals, and disposal once the equipment becomes either obsolete or dysfunctional and irreparable or is in excess. The Director Research office may be contacted to seek advice on how to follow these steps.

3.2. Responsibilities of Administrative Staff

Rules and Regulations of Purchase for Research Activities:

The rules and regulations, for the purchase of items related to research activity, adopted by the university from time to time will be made available to the faculty by the dealing administrative department (grants and accounts department etc.). The faculty will be advised to follow these rules strictly to avoid any sort of delay in the start of research work.

Utilization Certificates (UCs) and Statement of Salaries under Projects

All funded projects and their costs or accounts must be reviewed and certified by the PI with the help of the administrative staff both at the department as well as the University level. Further, certification of salaries charged to sponsored projects are also to be issued to the staff after ensuring that they correspond to efforts expended on those projects by them.

4. Application of General Principles & Other Matters

Progress and Invention Reports

Principal Investigators are responsible for submitting periodical progress reports in a format as determined by the funding agency. Further, purely for patenting purposes, the PIs may have to submit an Invention Report that would form the basis of patent application. It is the responsibility of the PI to ask his/her research team members to submit their research progress report in a timely manner so that progress in the research work can be achieved at a relatively faster pace.

Patents and Copyrights

A patent cell in the university has been established to help out the researchers in finding the appropriateness of their research results for securing IPR and finally to patent the results. The researchers must file the patent through patent cell. A policy to divide the share on selling the copyrights/technology transfers/patents between the research team and the university is already in place. All participating researchers, including postdocs, students, and visiting scholars, must sign the Patent and Copyright Agreement of the GNDU before the commencement of any research activities.

The Requirement of Secrecy & Security

A research project or programme may, at times, require secrecy for various reasons – either because of governmental/funding body restrictions, or because of patent requirements. If any part of the sponsoring or granting documents that establish the project is not freely publishable, or if there is a

reasonable basis for expectation that any documents to be generated in the course of the research project will be subjected by an outside sponsor to restrictions on publication, the funding agency or the sponsor can ascertain whether information he or she is entitled to have treated as confidential would be disclosed by publication or not. If access is required in the course of the project to confidential data by the sponsor, it will be up to the Dean Academics to resolve the issue in consultation with the Director Research and PI.

Four principles guide the security practices and guidelines for research computing systems: safety, confidentiality, integrity, and availability. Safety is important because it defines what imposed security measures are taken to prevent any unauthorized use or any possible cyber-attack by others. Since the speculative and unpolished nature of research systems may result in data breaches more likely, research system safety often involves taking extra measures to reduce, detect, and ameliorate compromises – all of which will be the PI's responsibility. Confidentiality is the property that information is not made available or disclosed to unauthorized individuals, entities, or processes. Insufficiently protecting the confidentiality can jeopardize the work and privacy of others. Integrity means maintaining and assuring the accuracy and completeness of data over its entire life cycle. Research systems and procedures should be chosen or designed to maintain the integrity of the data they store and to detect modification. Availability means that the system and its data can be used and accessed by authorized users when needed.

Confidentiality Clause

If an external agency – private or governmental, or any outside person or entity/group has made available to the investigator certain confidential information, provision may be made to preserve confidentiality and/or a short delay in the publication of research results. During this delay period, the information source may examine the proposed publication in order to assure that the investigator has not disclosed, intentionally or unintentionally, any portion of the confidential information supplied by them.

Review of General Principles

The Research Policies, in general, shall be reviewed by a committee constituted by the Vice Chancellor annually. A proposal to that effect could be made by the PIs, Head of the Departments and Deans in one of its meetings. This meeting and others primarily devoted to considering a revision of research policy shall be announced widely to all faculty by e-mail inviting suggestions on specific issues by the staff of the Vice-Chancellor and Dean, Academic Affairs. Changes, if any, arising out of such meetings will be added by notification and in the newer drafts of the University Research Policy documents.

5. Authorship & Related Issues

- In the normal instances, the PI will decide on the sequences of names in any research publication arising out of a project work based on the rules set up by the journal in which themanuscript is being submitted. The GNDU does not want to impose university guidelines to define "significant intellectual contribution" or impose formal mechanisms for determining authorship. The authorship rights and responsibilities of faculty, staff and students are a matter to be resolved within the group by the PI.

- It is not necessary that for each such publication all members of a research lab or research group will be given credit. But giving credit where it is due should be done, even if it is a small point or a personal communication, in which case 'Colophon' or a Footnote/Endnote would suffice. A number of questions about authorship and intellectual "ownership" of the research paper draft may arise as to what level of contribution by different parties to a research enterprise has been which could qualify them for (co) authorship of the final product. It is also understood that initial assumptions may well change as the course of research progresses. Even at its beginning, it is often difficult to trace the source of the ideas and insights from which a research project originates; it is hard to say what was identifiably generated by one individual and what was "in the air" in the intellectual domain. By the time a project is over, the original conception or the germinal idea may not be central any more. The more interactive the process, the less we can retrospectively divide the work into parts corresponding to particular roles or contributions.
- In cases where complaints and disagreements arise between students (postdoctoral, graduate, and undergraduate) and their faculty over credit for work to which both may have contributed, the Director Research in consultation with the Dean of concerned Faculty may decide at their level. In case, when it becomes difficult to determine responsibility of authorship leading to a dispute, a committee may be constituted which could provide guidance with respect to credit for scholarly work where several research staff and faculty are involved with or without a PI.
- It must also be pointed out that there is a tight coupling between authorship and responsibility. If the name of a faculty member has been included on a paper resulting from the relatively independent experiments done by a student or fellow, any error in the data or wrong methodology of data collection or accessing would also be the responsibility of the concerned faculty.
- In the end, multi-investigator research teams differ significantly from the individual faculty/graduate student research teams, and it may also be the case that at times, there is no single person who understands the entire gamut of a given research. The general principle for scholarly manuscripts emanating from multi-investigator research is as follows: First, the Principal investigators and senior faculty have special responsibilities to assure the overall cohesiveness and validity of the concerned draft publication. Secondly, all authors in a group effort have a shared responsibility for the published result and should have the opportunity to review all sample preparation procedures and data, as well as all data acquisition and analysis procedures. Thirdly, each author in a group should have access to the manuscript prior to its being submitted for publication, and should agree to his or her inclusion as a co-author. All the participants in the Programme should know that the paper is being prepared for publication.

6. Research Misconduct

- The provisions under this heading – namely, 'Research Misconduct' deal with the procedures to be followed in the event of Allegations, Counter-Allegations, Investigations, and Reporting of any actual or perceived misconduct, will be taken very seriously for which the required notifications to the funding agencies may also have to be sent.
- GNDU's definition of research misconduct, and procedures for investigating and reporting allegations of misconduct, will conform to the regulations of the governmental and other funding agencies which may have some elaborate policies on this subject. These will be applicable to the research proposed as well as to the research conducted or reported at. "Research misconduct" is defined as fabrication (making up data or results, and recording or reporting them), falsification (manipulating research materials, equipment, or processes, or

changing or omitting data or results such that the research is not accurately represented), or plagiarism (appropriation of another person's ideas, processes, results, or words without giving appropriate credit) in proposing, performing, or reviewing research, or in reporting research results.

- Most of the time, research misconduct is pointed out by peers. No anonymous complaints about the research misconduct will be entertained and only evidence based complaints will be addressed.
- If the misconduct is committed intentionally, or knowingly, then a Committee set-up by the Vice-Chancellor would look into such allegations, even instances of failure to supervise adequately, and other lapses from professional conduct or neglect of academic duties could come under its purview. Findings (with respect to research misconduct) of serious academic deficiencies are to be addressed by the concerned Dean Academics in consultation with Director Research, initiating the relevant disciplinary processes, as may be deemed appropriate. A proper inquiry should be held based on preliminary information gathered and preliminary fact-finding to ascertain the merit of the case.
- Before the inquiry begins, the Charged Individual (hereafter "the respondent") shall be informed of the allegations, and be invited to comment on them. Finally, the respondent shall also be provided with a copy of the draft report of the inquiry, and be given an opportunity to comment on the findings for the consideration of those conducting the inquiry. In so doing, best efforts shall be made (where feasible) to protect the confidence of the individual(s) who brought forward the complaint (hereafter "the complainant(s)"). The relevant individuals, including the complainant(s) should be interviewed in the presence of the charged individual by a committee.
- Based on the final report consisting of recommendation as to whether or not a full investigation is warranted, is to be submitted by the Director Research to Dean, Academics within 60 days of receipt of the allegations. The funding agencies will be notified of the outcome of an inquiry involving funds from their agency only if that outcome includes the recommendation to conduct a full investigation.

7. Retention of and Access to Research Data

It will be ensured by PIs that research data is appropriately recorded, archived for a reasonable period of time, and available for review under the appropriate circumstances as may be decided by the office of Director Research. This is because accurate and appropriate records are an essential component of any research project.

Both the University and the PI have responsibilities and rights concerning access to, use of, and maintenance of original research data, except where precluded by the specific terms of sponsorship or other agreements, tangible research property, including the scientific data and other records of research conducted under the auspices of GNDU.

The PI is responsible for the maintenance and retention of research data that may be necessary for the reconstruction and evaluation of reported results of research and the events and processes leading to those results. It is the responsibility of the PI to determine what needs to be retained under this policy.

For all projects, the PIs should adopt an orderly system of data organization and should communicate the chosen system to all members of a research group and to the appropriate administrative personnel as a matter of research protocol. Research data must be archived for a minimum of three years after the final project close-out, with original data retained wherever possible at least in the Cloud Servers.

To avoid any possible allegations of scientific misconduct or conflict of interest, data must be retained until such issues are fully resolved.

Wherever students are involved, data must be retained at least until the degree is awarded or until it is clear that the students have abandoned the work. Beyond this usual period of retention as specified, the destruction of the research record is at the discretion of the PI and his or her department or laboratory.

Wherever research is funded by an agency outside the GNDU which may have or which impose certain specific provision(s) regarding ownership, retention of and access to technical data, the provision(s) of that agreement will supersede this policy. Otherwise, the scientific record for projects conducted at the GNDU and/or with University resources are its own resource.

Further, when individuals involved in research projects at GNDU join other universities or institutions, they may be allowed by the PI/Deans concerned to take copies of research data for projects on which they have worked. All such requests have to be approved by the office of Director Research.

If a PI leaves GNDU, and a project is to be moved to another institution as per the agreement with the funding agency, ownership of the data may be transferred with the approval of the Vice-Chancellor and Director Research, based on a written request from and an agreement with the PI's new institution that would guarantee acceptance of custody of the data so transferred, however, due credit be given to GNDU in the publications.

8. Human Subjects and Scientific Research

- This section elaborates on the policy to give comprehensive information about the organization and focus of the human subject-based research protection programme at the GNDU. In these matters, the PIs and the University have to comply with the applicable laws of the land. All members of the GNDU who may like to be involved in any research – in sciences or social science/humanities involving human subjects must be knowledgeable about these laws and their requirements. The primary responsibility in this respect lies with the PI so that there is an institutional system to protect human subjects.
- A Human Ethics Committee consisting of the members as required by DBT, Indian Council of Medical Research (ICMR), Indian Council of Social Science Research (ICCSR),should perform prospective and continuing review of each research protocol involving human subjects, including an evaluation of its risks and benefits to the human subjects. They must also check on the informed consent document, particularly as to its description of the risks and benefits as well as consider any unanticipated problems, possible non-compliance, and other information and incidents that might affect this research protocol. From time to time, the concerned Deans should also organize training for all investigators, research staff, and students in the laws and provisions of use of human subjects in research.
- Anyone who knows that, or has reason to believe that human research is being conducted in an unethical manner or not in compliance with the laws must report the matter promptly to the Director Research, who will take necessary action via Human Ethics Committee. Where appropriate, sanctions will be considered and imposed. Non-compliance, protocol deviations, and violations are dealt with by the University Research Committee (URC) and University administration strictly. These may, in extreme cases, result in administrative, civil, or criminal penalties against the concerned individuals and the organizations, including termination of employment, contract, or other relationships.

9. Animals as Laboratory Subjects

- As for research involving human subjects, a similar set of rules and regulations as determined by DBT/ICMR/CSIR will govern using animals for research.

10. Environmental Health and Safety

- The Office of Director Research is charged with the responsibility of exercising oversight over all health and safety programmes at the GNDU and ensuring that adequate health and safety measures have been taken in designing and executing scientific and technological experiments.
- If required, it will also recommend needs, priorities and strategies to promote good health, safety, and environmental practices on campus. The URC will also encourage workshops and awareness programmes to make all concerned understand the value of operational responsibility for health and safety.
- Each year, one meeting of the URC could be publicized and open to all members of the University community and its residents to point out any measures that would enhance environmental health and safety of the campus. In particular, nothing should be done which could affect the health and safety of lab personnel, laboratory subjects, employees, students, the general public, and the environment.
- This also applies to potential hazards of chemicals to which the students, staff or campus residents and visitors may come in contact in the workplace or laboratory. The URC may also issue a Chemical Hygiene Plan (CHP) for the procedures, equipment, personal protective equipment, and work practices so that the laboratory personnel could be protected from potential health hazards of using certain chemicals and radio-active systems in the laboratory.

11. Financial Responsibilities for Sponsored Research

All PIs should be well-versed in the GFR (General Financial Rules) of the Government of India offices and the standard financial practices including accounting procedures based on which they would be required to deal with the Finance & Accounts Office of GNDU to conduct research work. Wherever   required, specific approval on file must be obtained from the University administration as per the rules of the University.