RAJIV GANDHI CENTRE FOR BIOTECHNOLOGY
THIRUVANANTHAPURAM

SCIENTIFIC INTEGRITY POLICY

1. PURPOSE

The primary aim of the Scientific Integrity Policy (SIP) is to promote a continuing culture of scientific excellence with integrity at RGCB. In addition, the intent of the policy is to strengthen widespread confidence among scientists, students, policy decision-makers, and the general public on the quality, validity, and reliability of science generated at RGCB.

Achieving these goals requires commitment from scientists, students and others who are involved in generation of science and scientific observations. Therefore, this policy also establishes a code of scientific conduct and code of ethics for science supervision and management at RGCB. Scholarly integrity and responsible conduct and reporting of research are essential for maintaining public trust in the research enterprise, and for community benefit from research discovery. It requires therefore, open communication and trust. Any violation (research misconduct, including fabrication or falsification of data, plagiarism, conflicting interests, etc.) will endanger and jeopardize societal trust in the research community.

Scientific and scholarly publications, defined as research reports, articles, abstracts, presentations at professional meetings and grant applications, provide the main vehicle to disseminate findings, thoughts, and analysis to scientific, academic, and other communities. For academic activities to contribute to the advancement of knowledge, they must be published in sufficient detail and accuracy to enable others to understand and elaborate the results. For the authors of such work, successful publication improves opportunities for academic and research funding and as well as career promotion while at the same time enhancing scientific & scholarly achievement and repute. At the same time, benefits of authorship are accompanied by a number of responsibilities such as proper planning, conducting, analysis, and reporting of research including the content and

conclusions of scholarly work. As members of the scientific community, it is the responsibility of RGCB and its faculty, technical staff and students to help protect these fundamental elements of the scientific and scholarly process. This policy describes the essential considerations and requirements of the RGCB Scientific Integrity Policy including responsible authorship and publication at RGCB. This policy will also include and concur with the Department of Biotechnology (DBT) statement on handling of allegations of research misconduct (http://dbtindia.nic.in/docs/DBT.htm)

2. SCOPE

To achieve its purposes, this policy will:

- Establish RGCB's Principles of Scientific Integrity and Scientific Activities.
- Establish a Code of Scientific Conduct and a Code of Ethics for Science Supervision and Management.
- Provide for compliance training for its employees.
- Set procedures for resolving allegations of misconduct

3. DEFINITIONS

A. Authorship

a. Author

An author of a scientific and scholarly publication is generally considered to be an individual who has made substantial intellectual contributions to a scientific investigation. All authors should meet the following three criteria, and all those who meet the criteria should be authors:

I. **Scholarship**: Contribute significantly to the conception and design of the research program, execution, and/or analysis as well as interpretation of study data.

II. **Authorship**: Active participation in drafting, reviewing, and/or revising the manuscript for intellectual content.

III. **Approval**: Approve the manuscript to be published.

An administrative relationship such as acquisition of funding, collection of data, or general supervision of a research group alone does not constitute an automatic to authorship.

It is recognized that definitions of authorship differ among the various scientific disciplines and professional journals, as may standards for “substantial” and “scholarly effort”, and the extent to which authors must participate in scholarship and authorship. For example, design/development of research equipment, or collection of a specific data set may be a substantial scholarly effort in certain disciplines. The expectation of this policy is that standards and criteria for authorship in an academic discipline will be widely recognized and consistent across that discipline, and consistent with the appropriate professional association, and/or journal (publication) in which the work appears.

b. **Lead Author.**

As a practical matter in the case of publications with multiple authors, one author should be designated as the lead author. The lead author assumes overall responsibility for the manuscript, and also often serves as managerial and corresponding author in addition to providing a significant contribution to the research effort. A lead author need not necessarily be the principal investigator or project leader. The lead author is responsible for:

I. **Authorship**: Including as co-authors all and only those individuals who meet the authorship criteria set forth in this policy.

II. **Approval**: Providing the draft of the manuscript to each individual contributing author for review and consent for authorship. The lead author should obtain from all co-authors their agreement to be designated as such and their approval of the manuscript. A journal may have specific requirements governing author review and consent, which must be followed.

III. **Integrity**: The lead author is responsible for integrity of the work as a whole, and ensuring that reasonable care and effort has been taken to determine that all the data is complete, accurate, and reasonably interpreted.

c. **Co-authors.**

All co-authors of a publication are responsible for:

I. **Authorship**: By providing consent to authorship to the lead author, co-authors acknowledge that they meet the authorship criteria set forth in Section 1 of this policy. A co-author should have participated sufficiently in the work to take responsibility for appropriate portions of the content.

II. **Approval**: By providing consent to authorship to the lead author, co-authors are acknowledging that they have reviewed and approved the manuscript.

III. **Integrity**: Each co-author is responsible for the content of all appropriate portions of the manuscript, including the integrity of any applicable research.

An individual retains the right to refuse co-authorship of a manuscript if he/she does not satisfy the criteria for authorship.

d. **Acknowledgments.**

Often individuals may have made some contribution to a publication, but who do not meet the criteria for authorship (such as staff, core instrumentation operators, research assistants or other individuals). Since such contributions do not meet the criteria for authorship under this policy, they should be listed in an acknowledgement and/or contributorship section of the work.

e. **Unacceptable Authorship.**

Guest, gift, and ghost authorship are all inconsistent with the definition of authorship, are unacceptable and a violation of this policy.

Guest (honorary, courtesy, or prestige) authorship is defined as granting authorship out of appreciation or respect for an individual, or in the belief that expert standing of the guest will increase the likelihood of publication, credibility, or status of the work.

Gift authorship is credit, offered from a sense of obligation, tribute, or dependence, within the context of an anticipated benefit, to an individual who has not contributed to the work.

Ghost authorship is the failure to identify as an author, someone who made substantial contributions to the research or writing of a manuscript that merited authorship, or an unnamed individual who participated in writing the manuscript. Ghost authorship may range from authors for hire with the understanding that they will not be credited, to major contributors not named as an author.

f. **Authorship Order**

The order of authors is a collective decision of the authors or study group. This policy does not address questions or disputes regarding the order of authorship on publications. In conjunction with the lead author, co-authors should discuss authorship order at the onset of the project and revise their decision as needed. All authors must work together to make these informed judgments.

Should authors fail to resolve disputes about the order of authors, the head of the involved group(s) should mediate an effort to resolve the dispute. If not successful, such mediation may be addressed by the Director. In cases that cannot be resolved, the lead author, in consultation with the Director, will have the final authority to determine the order of authorship.

g. **Research Funding**

All authors, in manuscripts submitted for review and publication, must acknowledge/disclose the source(s) of support for the work. Support includes research and educational grants, salary or other support, contracts, gifts, and departmental and institutional support.

h. **Financial Conflicts of Interest**

Authors shall fully disclose, in all manuscripts to journals, grant applications, and at professional meetings, all relevant financial interests that could be viewed as a potential conflict of interest or as required by RGCB and/or the journal. All such financial interests must also be reported internally as required by RGCB.

B. Allegation

Any written or oral statement or other indication of possible scientific misconduct made to a RGCB employee or contractor, or to an employee of a RGCB research partner.

C. Bias (Research Bias)

Research bias, also called experimenter bias, is a process where the scientist(s) performing the research influence the results in order to produce a certain outcome.

D. Conflict of Interest

Any financial or non-financial interest which conflicts with the actions or judgments of an individual when conducting scientific activities because it:

1. Could impair the individual's objectivity;
2. Could create an unfair competitive advantage for any person or organization.

E. Fabrication

Making up data or scientific results and recording or reporting them for the purposes of deception.

F. Falsification

Manipulating research materials, equipment, processes, or changing or omitting data or results such that the research is not accurately represented in the research record.

G. Fundamental Research Communication

Public communication prepared as part of the employee's official work regarding the products of basic or applied research in Science, Bio-Medicine and engineering, the results of which ordinarily are published and shared broadly within the scientific community. Matters of policy, budget, or management are not considered fundamental research communications.

H. Plagiarism

The appropriation of another person's ideas, processes, results, or words without giving appropriate credit.

I. Research

Research is systematic study directed toward fuller scientific knowledge or understanding of the subject studied.

- Basic research is defined as systematic study directed toward fuller knowledge or understanding of the fundamental aspects of phenomena and of observable facts without specific applications towards processes or products in mind.
- Applied research is defined as systematic study to gain knowledge or understanding necessary to determine the means by which a recognized and specific need may be met.

J. Scientific Activities

Activities that involve inventorying, monitoring, observations, experimentation, study, research, integration, modeling, and scientific assessment. Scientific activities are conducted in a manner specified by standard protocols and procedures and include any of the physical, biological, medical or social Sciences, as well as engineering and mathematics, or any combination of these.

K. Scientific Assessment

Evaluation of a body of scientific or technical knowledge that typically synthesizes multiple factual inputs, data, models, and assumptions, and implies the use of best professional judgment to bridge uncertainties in the available information.

L. Scientific Integrity

The condition resulting from adherence to professional values and practices when conducting and applying the results of Science that ensures objectivity, clarity, and reproducibility, and that is devoid of any bias, fabrication, falsification, plagiarism, interference, censorship, and inadequate procedural and information security.

M. Scientific Product

Presentation of the results of scientific activities including the analysis, synthesis, compilation, or translation of scientific information and data into formats for the use by RGCB or the general public.

N. Scientific research misconduct :

Defined as:

a. Fabrication, falsification, or plagiarism in proposing, performing, or reviewing research, or in reporting research results; or

b. Deliberate violations of Government and RGCB rules and regulations governing the conduct of research; or

c. Violations of the Policy for Authorship on Scientific and Scholarly Publications.

Research misconduct does not include honest error or differences of opinion or differences in interpretations of data. A finding of research misconduct requires that:

a. There be a significant departure from the accepted practices of the relevant research community; and

b. The research misconduct be committed intentionally, knowingly, or recklessly; and

c. The allegation be proven by a preponderance of evidence

O. Traceability

The ability to discover by going backward over the evidence step by step.

P. Transparent (Transparency)

Characterized by visibility or accessibility of information (the quality or state of being transparent).

Q. Hypothesis, Prediction, Testing and Analysis

Hypothesis

An hypothesis is a conjecture, based on the knowledge obtained while formulating the question, that may explain the observed behavior of a part of our universe.

Prediction

This step involves determining the logical consequences of the hypothesis. One or more predictions are then selected for further testing. The less likely that the prediction would be correct simply by coincidence, the stronger evidence it would be if the prediction were fulfilled; evidence is also stronger if the answer to the prediction is not already known, due to the effects of hindsight bias. Ideally, the prediction must also distinguish the hypothesis from likely alternatives; if two hypotheses make the same prediction, observing the prediction to be correct is not evidence for either one over the other.

Testing

This is an investigation of whether the real world behaves as predicted by the hypothesis. Scientists and students test hypotheses by conducting experiments. The purpose of an experiment is to determine whether observations of the real world agree with or conflict with the predictions derived from an hypothesis.

Analysis

This involves determining what the results of the experiment show and deciding on the next actions to take. The predictions of the hypothesis are compared to those of the null hypothesis, to determine which is better able to explain the data. In cases where an experiment is repeated many times, a statistical analysis such as a chi-squared test may be required. If the evidence has falsified the hypothesis, a new

hypothesis is required; if the experiment supports the hypothesis but the evidence is not strong enough for high confidence, other predictions from the hypothesis must be tested. Once a hypothesis is strongly supported by evidence, a new question can be asked to provide further insight on the same topic. Evidence from other scientists and experience are frequently incorporated at any stage in the process. Many iterations may be required to gather sufficient evidence to answer a question with confidence, or to build up many answers to highly specific questions in order to answer a single broader question.

4. INTEGRITY IN RESEARCH

a. Individual Level :

For the individual scientist, integrity embodies above all a commitment to intellectual honesty and personal responsibility for one's actions and to a range of practices that characterize the responsible conduct of research, including

- intellectual honesty in proposing, performing, and reporting research;
- accuracy in representing contributions to research proposals and reports;
- fairness in peer review;
- collegiality in scientific interactions, including communications and sharing of resources;
- transparency in conflicts of interest or potential conflicts of interest;
- protection of human subjects in the conduct of research;
- humane care of animals in the conduct of research; and
- adherence to the mutual responsibilities between investigators and their research teams.

b. Institutional Level :

RGCB seeks to create an environment that promotes responsible conduct by individual scientists and students as well as one that fosters integrity. This therefore, must establish and continuously monitor structures, processes, policies, and procedures that

- provide leadership in support of responsible conduct of research;
- encourage respect for everyone involved in the research enterprise;
- promote productive interactions between scholars and mentors;
- advocate adherence to the rules regarding all aspects of the conduct of research, especially research involving human participants, animals and plants;
- anticipate, reveal, and manage individual and institutional conflicts of interest;
- arrange timely and thorough inquiries and investigations of allegations of scientific misconduct and take apply appropriate actions;
- monitor and evaluate the Institutional Scientific Integrity Policy in the conduct of research and use this knowledge for continuous quality improvement.

5. SCIENTIFIC INTEGRITY POLICY

a. Applicability :

The policy applies to all RGCB Faculty, non-Faculty Scientists, Technical and related Staff, Post-Doctoral Scholars and Associates, Fellows, Trainees, Students, Contractors, Collaborators, Partners, Grantees, and Volunteers affiliated with RGCB, when they engage in, supervise, manage, or influence scientific and scholarly activities, or communicate information about RGCB's scientific and scholarly activities, or utilize scientific and scholarly information in making policy, management or regulatory decisions.

b. Promoting a Culture of Scientific Integrity at RGCB :

1. In order to ensure that scientific activities conducted and supported by RGCB are of the highest quality and integrity and can be trusted by the public and contribute to sound decision-making, RGCB believes that it is vital to maintain a culture of scientific integrity.
2. RGCB employees responsible for monitoring grants and contracts or managing projects, studies are to report any activities that may compromise scientific integrity including conflicts of interest, research misconduct, gross waste of resources, abuse of authority, or danger to public safety. In this regard, RGCB will also comply with the requirements of the Whistleblower Protection Policy.

6. PRINCIPLES OF SCIENTIFIC INTEGRITY

RGCB is an organization based upon science, scientific research, and providing and using scientific advice for appropriate decision-making. RGCB recognizes a clear distinction between the scientific process and the policy decisions made based on the results of science. Transparency, traceability, and scientific integrity are therefore core values of RGCB. The principles described in the paragraphs below constitute the RGCB scientific integrity policy.

a. RGCB researchers as defined in Section 5 (a) are expected to be cognizant of and understand the statutes and any other mandates that guide their work.

b. RGCB researchers as defined in Section 5 (a) are encouraged to publish data and findings in ways that contribute to the most effective dissemination of science generated at RGCB and that will best enhance RGCB's reputation for reliable science, including online in open formats and through peer-reviewed, professional, or scholarly journals.

c. In response to media interview about the scientific and technological dimensions of RGCBs work, RGCB will offer knowledgeable spokespersons who can, in an objective, nonpartisan and articulate fashion, describe and explain these dimensions to the media.

d. RGCB scientists are encouraged, consistent with Indian and international ethics laws and regulations, to engage with their peers in academia, industry, government, and non-governmental organizations through presenting their work at scientific meetings, serving on editorial boards and on scientific and technological expert review panels, and actively participating in professional societies and national/international scientific advisory and science assessment bodies.

e. To be open and transparent about their work, RGCB scientists may freely speak to the media and the public about scientific and technical matters based on their official work, including scientific and technical ideas, approaches, findings, and conclusions based on their official work after obtaining necessary sanction and concurrence from the institute. Communication by email or other electronic means in response to inquiries from the media, and concerning scientific or technical matters

based on an employee's official work, are considered to be the same as oral communication and subject to the same guidelines.

f. RGCB scientists are free to present viewpoints, for example about policy or management matters, that extend beyond their scientific findings to incorporate their expert or personal opinions, but in doing so they must make very clear that they are presenting their individual opinions and not the views of the Department of Biotechnology or RGCB. Appropriate disclaimers may also be expressed as necessary. RGCB recognizes that scientific leadership is critical to advance its mission and the professional development and stature of its scientists and therefore encourages and supports its researchers to become scientific leaders. RGCB also encourages its scientists, consistent with Indian ethics laws and regulations, to engage with their peers in academic, industry, governmental, and non-governmental organizations when:

- presenting their work at scientific meetings,
- publishing their work in appropriate outlets,
- serving on editorial boards and on scientific and technological expert review panels, and actively participating in professional societies and national/international scientific advisory and Science assessment bodies.

g. To establish a culture of transparency, integrity, and ethical behavior among its employees RGCB will use a combination of policy, opportunities for training, and open communications, both internally and with the public. RGCB will also:

- provide regular integrity and ethics training to its employees.
- provide information to ensure that employees and contractors are fully aware of their rights regarding publication of their research, communication with the media and the public, participation in professional scientific societies, and their responsibility to report waste, fraud, and abuse.

h. RGCB is committed to ensuring its staff is up to date on the most recent advances in research, development and evaluation in the field of education.

7. RGCB's POLICY ON INTEGRITY OF SCIENTIFIC ACTIVITIES

All staff identified under Para 5(a) must uphold the fundamental Principles of Scientific Integrity, the Code of Scientific Conduct, and the Code of Ethics for Scientific Supervision and Management outlined in this policy.

RGCB recognizes the importance of scientific activity and the information it produces to maintain and enhance its effectiveness and to establish credibility and value with the public, both nationally and internationally. RGCB will preserve integrity of the scientific activities it conducts, and activities that are conducted on its behalf. It will not tolerate loss of integrity in the performance of scientific activities or in the application of Science in decision-making. To that end, RGCB will:

a. Ensure the free flow of scientific information (online and in other formats) consistent with privacy and classification standards, and in keeping with the Department of Biotechnology and RGCB data sharing and management policies. Where appropriate, this information will include data and models underlying regulatory proposals and other policy decisions.

b. Document the scientific findings considered in decision-making and ensure public access to that information and supporting data through established procedures of Department of Biotechnology and RGCB.

c. Ensure that the selection and retention of employees in scientific positions or in positions that rely on the results of scientific activities are based on the candidate's integrity, knowledge, credentials, and experience relevant to the responsibility of the position.

d. Ensure that RGCB and Department of Biotechnology guidance's provide procedures by which scientists may speak to the media and the public about scientific and technical matters based on their official work and areas of expertise subject to prior institute clearances. Under no circumstance will any RGCB official ask or direct other RGCB employees (as defined in Section 5 (a) or others) to suppress or alter scientific findings.

e. Ensure that data and research used to support policy decisions undergo independent peer review by qualified experts, where feasible, appropriate, and consistent with the law and RGCB's policies. In cases where a full external peer review is appropriate but not possible (e.g., emergencies where lives and property are at risk), RGCB may use modified peer review processes as necessary for timely decision-making and release of data and information. In such cases, RGCB will explicitly state that the information has not been peer reviewed.

f. Provide information to employees on and abide by existing whistleblower protections.

g. Communicate scientific and technological findings by including a clear explication of underlying assumptions; accurate context of uncertainties; and a description of the probabilities associated with both optimistic and pessimistic projections, including best-case and worst-case scenarios, except in extraordinary or emergency situations.

h. Communicate policies for ensuring scientific integrity and responsibilities to employees, contractors and recipients of RGCB financial assistance awards who assist with developing or applying the results of scientific activities, as appropriate.

i. Enhance scientific integrity through appropriate cooperative engagement with the communities represented by professional societies and organizations.

j. Examine, track, resolve, and report all reasonable allegations of misconduct while seeking to ensure the rights and privacy of those covered by this policy and ensuring that unwarranted allegations do not result in slander, or other damage to them.

k. Ensure the sharing of best administrative and management practices that promote the integrity of RGCB's scientific activities.

l. In cases of joint or collaborative funding, RGCB and the other funding agencies may, as agreed upon, jointly investigate any allegations of scientific or research misconduct.

8. CODE OF SCIENTIFIC CONDUCT

All RGCB employees (as defined in Section 5 a), contractors and others concerned as well as RGCB research partners and collaborators, to the best of their ability are expected to:

a. **Exercise total honesty** in all aspects of scientific effort and in addition:

- Clearly differentiate between facts, personal opinions, assumptions, hypotheses, and professional judgment in reporting results of scientific activities, characterizing associated uncertainties in using those results for decision-making, and in representing those results to other scientists, decision makers, and the public.
- Preserve integrity of the data record through adherence to RGCB data management standards and not fabricating or deleting raw data.
- Approach all scientific activities objectively and completely, and accurately report results in a timely manner without allegiance to individuals, organizations, or ideology.
- Disclose any apparent, potential, or actual financial conflicts of interest or non-financial conflicts of interest of their own and others.
- Objectively consider conflicting data and/or studies.
- Acknowledge in publications the names and roles of those who made significant contributions to the research, including writers, funders, sponsors, and others who do not meet authorship criteria.

b. **Accountable** in the conduct of research and interpretation of research results and in addition:

- Use resources optimally entrusted to them responsibly, including equipment, funds, and employees' time.
- Disclose all research methods used, available data, and final reports and publications consistent with applicable scientific standards, laws, and policy.
- Provide scientific advice to RGCB as requested to inform management and other decision-making.

c. **Professional, courteous, and fair** in working with others and respectful of the ideas of others and in addition:

- Neither unfairly hinder scientific activities of others nor engage in dishonesty, fraud, deceit, misrepresentation, coercive manipulation, or other scientific or research misconduct.
- Provide constructive, objective, and frank evaluation to others on their scientific activities as appropriate for standards of respectful peer review, and accept constructive critique from others.
- Contribute to open and respectful scientific discourse that adheres to scientific standards for reporting results and conclusions and respects the intellectual property rights of others, including acknowledging and crediting prior work.

d. **Good stewards** of research on behalf of others and in addition:

- Diligently create, use, preserve, document, and maintain collections and data.
- Adhere to established quality assurance and quality control programs, follow all RGCB and Department of Biotechnology records retention policies, and comply with law and agreements related to use, security, and release of confidential and proprietary data.
- Adhere to the laws and policies of the country and RGCB related to protection of human research subjects, natural and cultural resources, and research animals while conducting scientific activities.
- Respect, to the fullest extent permitted by law, confidential and all proprietary information provided by communities, tribes or tribal organizations, and individuals whose interests are studied or affected by scientific activities or the resulting information.
- Immediately report any observed, suspected or apparent scientific and research misconduct.

9. CODE OF SCIENTIFIC ETHICS

Scientists, managers and supervisors will ensure that :-

- The selection, promotion, and retention of candidates for Scientific and technology positions in RGCB are based on the candidate's integrity, knowledge, credentials, accomplishments, and experience relevant to responsibility of the position.

- Appropriate rules and procedures are in place and implemented to preserve integrity of the scientific process and dissemination of its scientific products and information, including providing scientists the right to review and correct any official document (such as a press release or report) that cites or references their scientific work to ensure that accuracy has been maintained after the clearance and editing process.
- When scientific or technological information is considered in policy decisions, the information will be subject to well-established scientific processes, including peer review where appropriate, and policy decisions will appropriately and accurately reflect the best available Science in compliance with relevant statutory standards.
- Except for information that is properly restricted from disclosure under procedures established in accordance with a statute, regulation, patent, trademark, Executive Policy, Government or Institute's Memorandums or other legal authority, the scientific or technological findings, conclusions, and methodologies considered or relied on in policy decisions will be made available to the public in a timely manner.
- Procedures are in place to identify and address instances in which the scientific process or integrity of scientific and technological information may be compromised.
- Additional procedures are adopted as are necessary to ensure the integrity of scientific and technological information and processes.
- The intellectual property rights of others are respected.
- Report suspected cases of scientific or research misconduct.

All individuals identified in Paragraph 5(a) of this Policy must not :-

- Suppress, alter, or otherwise impede the timely release of scientific or technological findings or conclusions, unless explicitly required by a Government Department or government-wide statute, regulation, Executive Order, Government Memorandum, or other legal authority.
- Intimidate or coerce employees, contractors, recipients of financial assistance awards or others to alter or censor scientific findings.
- Implement institutional barriers to cooperation and the timely communication of scientific findings or technology.

10. SCIENTIFIC AND RESEARCH MISCONDUCT

Scientific and Research Misconduct is defined as fabrication, falsification or plagiarism in proposing, performing or reviewing scientific and research activities or in the products or reporting of these activities. Scientific and Research Misconduct specifically includes:

- Intentional circumvention of the integrity of the science and research process by violation of RGCB's Code of Ethics for science supervision and management; and
- Actions that compromise the scientific process by violating RGCB's Code of Scientific Conduct.
- Scientific and Research Misconduct does not include any honest error or differences of opinion. .

11. Violations of the Policy:

Knowing, intentional, or reckless violations of this policy are considered research misconduct. Violations of the policy that do not rise to the level of research misconduct may subject the individual to corrective action or other sanctions as deemed appropriate by RGCB.

PLANNING AND IMPLEMENTATION OF RESEARCH

All studies and investigations or surveys must should be conceived, designed and implemented according to the highest standards and conforming to all national and institute ethical and regulatory approvals

Documentation of study detail including working hypothesis, rationale and objectives must be done in laboratory page numbered logbooks. Back up records may be also kept as electronic records. Any modification to the original plan must be clearly documented with appropriate justifications.

Every document and any changes should be signed with date by the concerned researcher. This becomes absolutely critical in investigation of any subsequent queries as well as for establishing intellectual property rights.

Standard operating procedures (SOP) must be made for all experiments including use of laboratory instrumentation. Every experiment must document the SOP followed.

Results and data generated from the study must be documented in an appropriate format that can be read and understood by others and also suitable for a scientific and financial audit. Since the use of image enhancing software such as Photo Shop is used extensively, investigators must ensure that every original image is recorded and retained. Both original and edited images should be stored adjacent to each other. Great care and caution is to be taken to avoid inappropriate editing or enhancing of images.

PROCEDURES FOR RESPONDING TO ALLEGATIONS OF MISCONDUCT IN RESEARCH

RGCB will investigate all allegations of misconduct of research in accordance with the procedures described here.

Definitions of specific relevant terms

i. ***Allegation*** means a communication regarding possible scientific misconduct. This allegation may be communicated to RGCB through any means - written or as an oral statement or e-mail to any official in the RGCB's administration or scientific administration. Copies of such allegations sent to or forwarded by journals/ books or their publishers/editorial board will also be taken up by the institute as will copies of copies of complaints sent to or forwarded by research funding agencies.

ii. ***Research Misconduct*** includes the fabrication, falsification or plagiarism in formulating, proposing, implementing, analyzing and reviewing research grants or proposals or reports or in communicating research results. Research misconduct does not include honest errors or differences in opinion and disputes in the research unit or team over authorship. It also does not include issues relating to sexual harassment, personnel management, contract management or financial misappropriation in research projects all of which will be and can be investigated through other policies of RGCB

iii. ***Plagiarism*** refers to use of another person's ideas, processes, results or verbatim copy of words without giving appropriate and due credit.

iv. ***Fabrication*** is defined as making up data or results and reporting them or recording them in research documentation, laboratory logbooks and research communications.

v. ***Falsification*** includes manipulating research documentation or materials or equipment or SOPs/processes or changing or omitting/deletion of data or results so as to present a distorted version.

vi. ***Complainant*** means a person who in good faith makes an allegation of scientific misconduct.

vii. ***Responsible Official***: The RGCB Director will make the final determinations on institutional administrative actions in regard to findings of misconduct in research.

viii. ***Evidence*** means any declaration, document, images, any tangible item or testimony offered or obtained during misconduct proceedings that can assist in proving or disproving the matter involved an allegation.

ix. ***First, Initial or Preliminary Inquiry*** means preliminary examination of the evidence provided in the allegation and includes information-gathering and preliminary fact-finding.

x. ***First or Preliminary Inquiry Committee*** refers to an internal committee nominated by the Director, RGCB to establish whether the allegation has to be formally investigated by the Office of Scientific Integrity (OSI) or can be rejected. This Committee will be nominated from among the regular permanent scientific, technical or administrative staff of RGCB.

xi. ***Formal Investigation*** includes all processes carried out after the preliminary Inquiry if so recommended by the preliminary inquiry committee. The formal investigation will be done by the Office of Scientific Integrity (OSI) and will include a formal creation of a factual record of the case, examination of the case record, examination of all evidence collected through interviews with all concerned personnel being investigated, all concerned witnesses, all original logbooks and data records, etc.

xii. ***Office of Scientific Integrity*** refers to the committee that performs the formal investigation.

PROCEDURES FOR THE ASSESSMENT AND INQUIRY

Initial Assessment of Allegations

Upon receiving an allegation of research misconduct, the office of the Director will immediately assess the allegation to determine whether it is sufficiently credible and specific so that potential evidence of research misconduct may be identified and whether the allegation falls within the definition of research misconduct in this policy. If the Office of the Director feels that the complaint warrants a preliminary inquiry this will be done by an internal enquiry committee constituted specifically for the purpose as explained in Paragraph x above.

Internal Inquiry Committee

The Inquiry Committee will hold the inquiry process, prepare an inquiry report and decide whether an investigation is warranted as described in Paragraph (x) above. This decision will be communicated to the Director, RGCB who in turn may or may not accept the report. In the latter case where the Responsible Officer has reasons to have concerns or doubts over the inquiry, he or she can refer the matter to a second internal committee. When the internal enquiry committee report is accepted and it recommends a full investigation, the Responsible Officer will notify the respondent (person being investigated) who will be also be provided a copy of the inquiry report for comments, that are to be given within seven working days. The Responsible Officer will also intimate this decision to the Complainant along with relevant portions of the inquiry report. The office of the Responsible Officer will ensure that the documents and reports are preserved for a period of 15 years after termination of the inquiry.

Office of Scientific Integrity (OSI)

The OSI will be the Investigation Committee that will conduct the investigation process and prepare the investigation report, should the Internal Inquiry Committee recommend it. The investigation will lead to a Final Investigation Report that will explain in detail its findings including all aspects of the alleged research misconduct.

Responsible Officer (RO)

The RO in this matter is the Director of RGCB, who will receive the investigation report. The Director will discuss these findings with the Office of Scientific Integrity and other officers of the RGCB administration as needed and required, to appropriately take a decision upon final acceptance of the investigation report. If research misconduct is established, the Responsible Officer will initiate further action needed. This includes informing the Scientific Advisory Council and then placing the full report before the RGCB Governing Council, which will discuss and decide upon the reprimand action to be taken as explained below.

Administrative Actions following a firm establishment of Scientific Misconduct

If the Responsible Officer on the advice of the Office Scientific Integrity and all investigation reports is convinced that there has been misconduct in research, he or she will decide on the appropriate actions to be initiated based on the decisions of the Governing Council as explained above. Such actions include individually or in combination any of the following:

1. Withdrawal or correction by RGCB of all pending or published abstracts and papers involved in research where scientific misconduct was found.

2. Removal of the responsible person(s) from the particular project or study.

3. Issue of a formal letter of reprimand with a copy placed in the personal files/promotion files of the concerned person(s).

4. Setting up of a system to ensure monitoring of future research work of the concerned person(s).

5. Return of all extra mural funding to the sponsoring agency and withdrawal of all intra mural funding given to the concerned person(s) for a decided period.

6. Closure of laboratory and research facilities and withdrawal of all PhD students and denial of future PhD students to the concerned person(s) for a defined period.

7. If sufficient grounds warrant so, suspension of the concerned person(s) from office for a defined time.

8. If sufficient grounds warrant so, initiation of steps leading to possible rank reduction of the concerned person(s).

9. If sufficient grounds warrant so, termination of employment of the concerned person(s).

10. Any other actions appropriate to the misconduct.