General Research and Publication Ethics Guidelines

For Critical and Systematic Verification, Peer Review, Honesty, Transparency, Documentability.

Adopted by the Academic Council

THE APOLLO UNIVERSITY

Andhra Pradesh

The Apollo Knowledge City Campus, Saketa, Murukambattu,
Chittoor, Andhra Pradesh, India. 517127

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1. Preamble

1.1 Need for these guidelines:

Promotion and maintenance of ethical practices in research and governance are of paramount importance in organizations like TAU. Their implementation calls for development of appropriate guidelines for practices of research, publication of scientific / technical / biomedical data and results, making them available in the public domain and, in the administration of scientific establishments at all levels.

Guidelines on responsible conduct in research institution have now been laid out by various agencies. These include Govt. of India Gazette notification by the University Grants Commission (1), the Policy document by ICMR (2), Draft National Policy on Academic Ethics by Office of PSA (3), a book on Ethics in Science- Education, Research and Governance by the Indian National Science Academy (4), The Ethics in Science by Resnick (5), The Australian Code for the Responsible Conduct of Research (6), the ICSU Strategic Review (7), Policy Report by the Inter Academy Council (8), Best Practice Guidelines on Publishing Ethics by Wiley (9), Policy statement by INSA on Dissemination and Evaluation of Research Output (10), Recommendations by the ICMJE (11); COPE Guidelines for Good Publication Practice (12), Williams *et al* in JCI 2019 (13), Clinical Trial Guidelines by CDCSCO(14), Compendium of CPCSEA (15), Handbook on Sexual Harassment of Women (16), as well as a relevant compilation on the levels of misconduct and suggested advice on action(17). Some of the factors that drive one to take unethical route knowingly or unknowingly are:

A. Increased reliance on 'quantification' of the value of a publication/report, (and of the authors who produced them), e.g., impact factor, H index and related numbers which are used in various places for 'recognition' of an author for career advancement, awards, and honours and the like;

B. Overemphasis on the *'scientometric*' reputation of a journal where the paper is published in contrast to an evaluation of what new science is published;

C. Implicit demand from institutions that a researcher must publish a good number of papers for obtaining PhD degrees, and promotions and

D. The resultant 'explosion,' in recent years, of a number of fake and predatory journals.

1.2 Guidelines formulated by several agencies, authors, and groups (Ref. 1-17) have provided a basis for preparation of the guidelines here for TAU. It must be clarified that the value of any such guidelines will lie exclusively with the sincerity of their implementation. Thus, the guidelines enunciated below may not perhaps deal with every individual case that can or will arise, but it is expected that these will provide broad contours and trajectories within which appropriate processes and decision making could proceed.

1.3 Beyond academic and publication guidelines, emphasis has been (and needsto be) given to honesty, scientific validity of the work being published, aspects of freedom to pursue new ideas and criticize old ones, apportioning due credit to others, mutual respect, conflict of interest, education and mentorship, social responsibility, and the law.

2. What is scientific misconduct

Scientific misconduct involves violation of the codes of scholarly conduct and ethical behaviour in professional work and publication of scientific research. These include all acts from the initiation of an idea, its experimental verification, accuracy of results, accurate reporting without resorting to any malpractice in the presentation of data / images, due acknowledgement of all sources of information and people. It is against this background that this document provides TAU and individuals working at TAU, an explicit list of acts that constitute scientific misconduct. Scientific misconduct(s) can be of various types and can occur at various stages-from the initiation of the scientific study to publications and/or patent generation. While these involve violation of generally accepted research practices, inadvertent errors or genuine differences in interpretation or judgement in assessment of the results may not constitute scientific misconduct. Scientific misconduct may be categorized into the following.

2.1 Embezzlement of ideas

Claiming an idea to be one's own while it was obtained from privileged access while reviewing manuscripts, grant proposals or through participation in lectures and personal discussions and earlier publications (but not citing them). This also includes acts wherein ideas of others are presented as one's own through slight changes of words, phrases, and illustrations.

2.2 Plagiarism

Using other's words, results, or published work without appropriate citation. This

includes using one's own published work (self-plagiarism) without appropriate disclosure/citations.

2.3 Falsification

Misrepresentation or suppression/ addition of a part of data to generate cherry- picked results or improper reporting of results in order to present a misleading outcome.

2.4 Fabrication

Reporting 'results' of experiments which were never done. This also includes images/ photographs being morphed to reach a particular interpretation.

2.5 Fraud

Deliberate suppression of previous work in publications and inappropriate claim originality and/or avoiding quoting previous publications which may be contrary to present results.

2.6 Non-compliance of Regulatory Guidelines

Deliberative violation of ethical guidelines accepted for human and animal research, non-adherence to bio-safety regulations or inappropriate use of research funds.

2.7 Inappropriate Authorship

Excluding genuine contributors from authorship, including non-contributors, or claiming authorship for oneself without having made any meaningful contribution is inappropriate. In the cases of publication of work carried out during a Ph.D. thesis, due care should be taken by the thesis Supervisor(s) to ensure that the scientific contributions of a student are neither diluted nor exaggerated.

2.8 Withholding data from Validation:

Not providing data or research material to the TAU/journal for verification/validation purpose.

2.9 Wrong versus Fraudulent paper:

It occasionally happens that a conclusion drawn in an earlier publication is negated, modified or shown where it went wrong- either by the same author or others. This is how science progresses. The earlier paper is thus not fraudulent.

3. Good Science Practices

3.1 Laboratory Records

It is vital to keep proper records of each experiment, details of materials obtained from varied sources and how they were used, procedures, analysis, and other related material. Graphs and printouts from instruments should be numbered and filed appropriately. TAU has standardized lab books to ensure uniform and structured practices. If any software is used for handling and analyzing the data, its name, version, and other details should be recorded. The laboratory records of experiments carried out using a publicly funded institution should carry every single detail of the experiment. Such records are the property of the laboratory and are to be kept for archival and later retrieval purposes; a copy will of course be that of the researcher and can be used by anyone after a defined moratorium period of 18 months. Due permission and acknowledgement of the researchers who carried out the experiments are essential at all times.

3.2 Consultancy work

External consultation should be done with explicit permission from the Institutional Head where the scientist/technologist works. At the same time, permissions, if denied, should be justified and the reasons thereof be formally recorded. If the facilities of the institution are used, the details should be declared and recorded with due confidentiality in terms of the interest of the client. A clear statement on the resources to be used and finances that would accrue to the consultant and the institution should be recorded.

3.3 Collaborative studies

The role played by each collaborator, and the benefit (both material and intellectual) which accrues to each collaborator should be decided ahead of time, should be accepted by each participant, and formally recorded. Given the uncertain nature of scientific research, the collaborators should be flexible in apportioning benefits in case there is a significant change in the actual contributions by participants as compared to those agreed to earlier.

The benefit that accrues to each of the researcher's institutions, if any, should also be agreed upon ahead of time. Patent rights of each collaborator (and of his/her institution, if any) should be decided and be recorded ahead of time. Institutions need to agree upon the operating procedures for such Memoranda of Understanding (MoUs) and for the exchange of materials and samples.

3.4 Data management

In both independent and collaborative research, every effort must be made to ensure that data are collected and computations performed with complete honesty. False statements and/or deliberate distortions are unacceptable.

Fabrication, falsification or improper manipulation of data are highly unethical and must not be resorted to for any reason. Investigators in any given field should familiarize themselves with the methods of handling and processing data that are considered acceptable/unacceptable in their field. The procedures for recording and storing data will also vary from subject to subject, but in each case, they should be well formulated in advance and scrupulously followed. Researchers should be aware that it is not uncommon for the correctness of research publication to be questioned, even after publication. Particularly with experimental work, defending the publication requires properly recorded raw data to be produced and its absence or premature destruction could be treated as suspicious. A well-maintained lab notebook provides not only a permanent record of results and protocols for future publications, but also serves as critical evidence for a claim of priority in the case of patent applications and as proof of adherence to appropriate ethical standards. Tampering with or manipulating records in a laboratory notebook is considered to be fraudulent activity. It is recommended that research related data, lab notebooks and material be stored in a secure manner so that if required the scientific validity of the data can be examined. Generating, recording, and publishing false data are fraudulent practices that must be scrupulously avoided.

3.5 Plagiarism

The use of someone else's work in one's own is not by itself unethical. A limited amount of textual material in someone else's paper can be copied if it is clearly marked as a quote (typically by enclosing it within quotation marks) and the source is explicitly cited where the quote starts or ends. Alternatively, text may be paraphrased with a general indication of where the concepts originated.

Occasional re-ordering or substituting of words is not sufficient to count as paraphrasing: the recommended procedure is to read and understand the source material, then put it away and express the idea in one's own words. Besides textual

material, the incorporation of ideas, figures, graphs etc. from other sources in a manner that conveys a false impression that they are original amounts to plagiarism.

Taking one's own published results and reproducing them in another work as if they were new is "self-plagiarism." "Duplicate publication"–submitting the same research results to two or more journals and treating them as separate publications – is also a form of self-plagiarism and must be avoided. Plagiarism is an issue not only for scientific publications but also internal reports, textbooks, monographs, and grant proposals. The considerations above apply equally in all these cases. Under no circumstances copyright violations will be accepted.

3.6 Responsible use of funds

The management of research funds requires adherence to GoI / TAU financial policies & regulations and as amended time to time. This is applicable to funds received from DST or from external granting agencies. Efforts should be made to ensure reasonable and efficient use of resources following transparent and fair processes.

3.7 Sharing of facilities

Equipment installed at TAU is expected to be shared in a collegial spirit with colleagues who have the background to operate the equipment and require access for their own research, as long as such access does not impede the original purpose for which the equipment was purchased. Wherever time- sharing is appropriate, transparent procedures for this should be put in place.

3.8 Student recruitment, assessment, and allotment

Recruitment of students to TAU should involve a fair and transparent procedure. While assessing merit during a selection can involve some subjective features, particularly during interviews, care must be taken to ensure that extraneous considerations – namely, any attribute of the student that has no bearing on academic ability or potential – are rigorously avoided. Assessment of the performance of students, made through examinations and by course or thesis guides, must also be carried out with maximum objectivity. The assessment procedure for a course or project should be made clear to the student from the beginning. The same holds when students are allocated to research

programmes, for which purpose a fair and transparent procedure should be put in place and made known to all candidates. Methods of evaluation used during tenure of the course-work should be communicated to the concerned individuals and Office.

3.9 Research supervision

While taking into consideration the availability of a vacancy under a particular Faculty Member, it is important to have an unbiased consideration of the student's research interests while allocating a PI to the student. It is self-evident that during the course of their research activity, students tend to absorb and internalize the ethical atmosphere within their group. Conflicts between students and others in their group, or between students and guides, are not uncommon in academia. Supervisors should be aware of the potential for this type of problem. Potentially troublesome issues should be identified and dealt with as soon as possible, ideally before they graduate into full-blown conflicts.

It is recommended that graduate students meet regularly with their doctoral thesis committee, to ensure the student and thesis advisor work efficiently to meet graduate school related deadlines, and to mediate resolution of disputes should they arise. Graduate Students Advisory Committee (GSAC) constituted for the purpose should be activated as and when required.

3.10 Ethical training to students

Students at TAU should receive training, in ethical practices preferably on a regular basis. A mandatory ethics module should be provided at the time of joining as part of the orientation. Additionally, course-specific and laboratory- specific ethical training course mandated by UGC should be imparted at the appropriate times.

3.11 Thesis writing

A thesis typically involves collecting a large amount of material, both previously established and original. The manner of presentation must be such as to make clear what has been taken from other sources with appropriate acknowledgement and permissions if required, and what is the original content. For a student, thesis writing is often the first major occasion that requires taking personal responsibility to handle

ethical issues. Guidance must be imparted to make sure that data is presented appropriately and plagiarism, even inadvertent, is avoided. The students should get a plagiarism check done using Turnitin software available at the library/ in the office of university research coordinator.

3.12 Responsibility of referees

Scientists who are asked to review a manuscript or a research proposal have a responsibility to ensure they do not misuse their advance access to the information and ideas in these documents. The use of such advance access to publish a competing work, or carry out research that pre-empts the proposed project, would be highly unethical.

3.13 Faculty Member should abstain from contacting referees of their student's thesis. The panel of examiners is a confidential information and the integrity of the procedure needs to be upheld by all individuals and Offices involved. Undue pressure on the Academic Office with repeated enquiries on the status of the reports, to reveal the names of the examiners should be avoided.

3.14 Research on humans and human biological materials Stringent guidelines on the use of humans as experimental participants in clinical trials, and the use of human biological material in research, exist. The Union Health Ministry has provided guidelines on these, as well as on the exchange of human biological materials and these should be adhered. Similarly, clinical trials (all phases) should be held as per the guidelines and with prior approval from the concerned agency group.

3.15 On the use of human biological materials for experimental research, even in the laboratory and the clinic, one needs first 'informed consent' from the individual from whom the material is obtained, and based on this, approval from the human ethics committee of the institution. Details of these are found in the guidelines published by the Indian Council of Medical Research and all at TAU will need to follow these guidelines by ICMR, *sensu stricto*.

4. Good General Practices

4.1 Evaluations: hiring, promotion, awards in a university, assessment of candidates for hiring, promotion and awards is a regular activity. While this necessarily involves some degree of subjective judgement, it is essential that an assessor take great careto eliminate personal biases and extraneous considerations and proceed in a manner that is visibly fair and balanced. The general criteria for hiring, assessment and awards should, as far as possible, be laid down in advance. It is inappropriate to introduce new criteria, not previously agreed upon, during an assessment process purely for the purpose of favoring or disqualifying specific candidates. When referee evaluations are used, they should be sought in writing.

4.2 Bias and discrimination

The TAU academic community is enriched by the presence of people of different ethnicity, gender, age, affiliations, background and sexual orientation. It is incumbent on the members to so conduct their academic affairs that there is no direct or indirect bias or discrimination against any individual based on the above categories. TAU aims for the full and equal participation of women in all academic activities. It is everyone's responsibility to foster a gender-neutral and supportive environment to achieve this goal.

4.3 Interaction with public and media

Statements made to the media should be as objective, fair and balanced as possible. The same holds for scientific information conveyed to the public. Scientists are expected not to use the media to promote their own personal image or create a false or exaggerated impression of their achievements. A statement issued to the media (print or social media) needs to be made with the prior permission of the Authority of the TAU.

4.4 Conflict of interest

Several types of situations can arise in academia where a person experiences a conflict of interest. Reviewers of manuscripts may find that the contents of the manuscript have a potential impact on their own research or financial interests. Assessors for a hiring/promotion/award may be personally related to a candidate. Researchers who are also shareholders of a company may find themselves in a situation where their research could impact the company’s financial situation.

In all such cases it is essential for researchers to promptly disclose foreseeable conflicts of interest. It is not sufficient for the researcher to consciously decide to handle the matter objectively. The decision on whether the conflict of interest requires definite action (such as the researcher withdrawing from a committee) should be taken by other responsible colleagues. Foreseeable research conflicts should be reported to the Vice Chancellor, TAU and potential conflicts while reviewing manuscripts should be reported to the journal editor. In case an assessor has a personal relation to a candidate in an interview, this fact should be communicated to the committee Chair (or if the assessor in question is the Committee chair, then to the appointing authority of that Committee).

If the Faculty Member of the TAU is involved in the admission process; question paper setting for Integrated Ph.D degree program, if her/his relative/friend is appearing for the written exam/interview, the Faculty Member needs to inform the Registrar, Research Coordinator and abstain from any of these processes so as to maintain the transparency.

4.5 Reporting of misconduct

Suspected ethical misconduct at TAU must be reported to the Vice Chancellor. There will be no reprisal for complaints made in all sincerity and good faith, even if they later turn out to be unfounded. However, complaints that turn out upon investigation to have been falsely made with deliberate intent to malign the accused will be treated as a serious form of ethical misconduct.

Complaints can be made by anyone, not necessarily a TAU member. They must be signed and carry the full name and address of the complainant. Some relevant documentation must be supplied along with the complaint in order for the Vice Chancellor to be able to decide whether there is a prima facie case. The complainant should not give wide publicity to the complaint at this stage. Such publicity, if it occurs, can be treated as ethical misconduct even if the complaint is found to have merit and continues to be investigated. Anonymous complaints may be entertained based on the merit of the case.

4.6 Time frame

The investigation of an ethics complaint cannot easily be assigned a time-frame. However, for relatively simple cases it is desirable that the first report be submitted within 3-4 months. More complex cases, particularly those requiring detailed investigation of scientific issues, can take as long as six months to a year or even more.

4.7 Interference with the investigation

Any attempt to interfere with functioning of the Ethics Committee in any manner, or refusal to cooperate with the investigation, constitutes an ethical violation by itself. This should be reported by the Committee to the Vice Chancellor for appropriate action.

4.8 Availability of results of ethics investigations to TAU members.

Members of TAU are entitled to request the Vice Chancellor, TAU for access to the final report of the Ethics Committee, and the Vice Chancellor 's written statement to the concerned parties, upon completion of the investigation.

4.9 Respect of Individual

While carrying out the interactions at all levels, the dignity and respect of an individual must be observed.

5. Dealing with Misconduct

The suggested Standard Operating Procedure (SOP) for inquiry in any act of scientific misconduct is detailed in the Appendix-B and Table-1 which outlines fair and transparent trial of an accused and safeguards the interests of whistle-blowers. An Institutional Committee on Ethics called the Standing Publications, Ethics and Scientific Vigilance Committee (SEC) involving people at different levels (scientific, administrative, technical, students, and with gender representation) should be established. The committee would be chaired by a Professor with an Ethics Officer as member secretary. The SEC would be responsible for training members on all aspects of scientific ethics and looking into best lab practices and publications to be observed by the scientific community.

Scientific misconducts would be investigated by the Scientific Investigation Board (SIB) comprising scientific/technical personnel of appropriate expertise (with gender and SC/ST/OBC representation) and with at least one external expert to investigate the matter, fact finding and recommending the punitive action. The SIB would be set-up by the Vice Chancellor, TAU.

6. Types of reports and related documents covered under this umbrella

In addition to publications in professional journals, the recommendations highlighted in Section 4 above as "Good General Practices" will apply for all research papers, academic theses for Ph.D., and other degrees, technical reports, grant applications as well as consultancy reports and certifications.

7. Intellectual Property

Any publication or a report that has the possibility of a consequential patent could lead to a marketable application or product is defined as intellectual property. The authors who are involved in the publication / report should first ensure, before making it public, as to who did what and shares that accrue to each of them in the proceeds ahead of time. When her/his 'property' is patented and licensed for commercialization, no dispute should then occur about the share of each in the property and its proceeds. Any share that accrues to the laboratory/centre where the discovery/invention was made (using its facilities) must also be agreed upon *a priori* and in writing.

Towards this, TAU may have an in- house intellectual property rights (IPR) expert or have one as a consultant. The rules that apply in the institution must be adhered to by the authors and users of the patent. A handy and updated manual on IPR and technology transfer has been published by the Indian Council of Medical Research and the TAU laboratories and individuals are advised to refer to the same.

8. Ethics in Governance and Conflict of Interest (CoI)

Governance is an integral part of any institution and involves several layers of activities ranging from appointments and periodic evaluations, allotment of funds, approval for training programs and deputation for various meetings related to the institution, allotment of staff and students, to name a few. All these require fairness in judgement

in decision making, despite the fact there is often a considerable room for subjectivity. Institutional systems must be created such that the decision-making process is fair and transparent, providing equal opportunity to all.

An important element in decision making is the aspect of Conflict of Interest (CoI). CoI arises when an individual finds himself under multiple loyalties arising due to either of personal/professional relationships or due to extraneous financial considerations. These lead to a compromise on the interest of the TAU system as these impact a person's impartiality in the decision-making process (be it a selection process for a new employee; promotion of a colleague; financial matter in respect of purchases; financial grants for research, or for selection of an award or a fellowship).

In every decision-making process, all the members who are involved with decision making process, should necessarily sign a Conflict-of-Interest Statement indicating that none of his/her relatives, students, collaborators, group members or institutional members is/are being considered in the proposed meeting for decision making. This procedure should apply to all committees relating to the work of TAU, i.e., institutional issues and matters such as funding for research under its Extramural Programs, various awards and prizes, and the like. Those conflicted may recuse themselves from the committee proceedings.

Conflicts of interest can also arise from competitions in research work when one favours his students/institutional colleagues in comparison to others with comparable merit. This may be, for an eventual *quid proquo* from his colleagues. The same applies to grant process for sponsored research on behalf of National funding agencies. In all such meetings which lead to a decision of long-term consequence, a conflict-of-interest form given in Appendix-C should be signed by each member and countersigned by the Chairperson and kept as a part of the minutes.

9. Other Recommendations

9.1 Suggestions for action to reduce the stresses that lead to unethical conduct: an important aspect of reducing such cases is appropriate training and understanding of the issues involved. Thus, TAU may evolve a system of regular workshops on various aspects, such as good laboratory practices, safety issues, publication and plagiarism, gender sensitivity, data analysis and statistical procedures and importantly training in

communication.

To ensure that these courses occur at regular intervals, a dedicated Ethics Officer can be appointed. He/she will be responsible to ensure that the training is imparted effectively and regularly including for those inducted afresh. These courses should carry credits in terms of career advancement. The Safety Officer will also ensure and report on non-compliance of safety norms. Deliberate incidences of misconduct in respect of safety and ethics, to be brought to the notice of the Administrative Authorities.

9.2 Predatory journals must be avoided. As a simple rule, with the exception of some highly reputed journals published by scientific societies that charge publication fee to ensure open access, rapid publication through payment should be strictly avoided.

9.3 Prior to sending for publications, scientists should check for plagiarism using Turnitin current software available in the library/ in the office of university research coordinator. The library of the institute / Knowledge Resource Centre / Standing Publications, Ethics and Scientific Vigilance Committee or any other designated Section of the Institute to provide this service as a part of their mandate.

9.4 Archival of all primary data including field records related to publication to be deposited with the institute's knowledge resource centre or any other designated Section of the Institute with appropriate security for intellectual property. Both soft and hard copies should to be kept. This will imply creation of a data archival system within TAU systems with appropriate security. This will require source allocation.

9.5 Due acknowledgements of the work at TAU should be made.

9.6 Under safe laboratory practices, due attention must be given frequently on areas such as fire safety, use of hazardous chemicals, disposal of waste of various kinds (chemical, biological, material, radioactive) and related issues. Mock drills should be conducted from time to time in order to keep all in the institution prepared and ready. Intervals between such drills should be no more than 6 months.

10. Personal Ethics / introspection

Much of TAU work is based on funds from various granting agencies, which should be used with abundant caution. More importantly, it should be the duty of everyone to personally evaluate if the work done by him/her would lead to any tangible benefit to TAU or the country in terms of definitive novel ideas, products, or patents.

Most institutions have a cell for outreach activities and it is a part of the duties of scientists working with public funding that they provide regular overviews of their work to the stakeholders in a clear to understand manner, without any attempt to overstate the achievement. It is essential that scientists use proper and measured language while presenting their work and mentioning the limitations of the work.

On a subtler nuance is the fact that many laboratories are well funded due to the system they belong to. These laboratories then procure large equipment and use these to work as material characterization centre and then demand to inhumanly or authorship in the intellectual property or publication, without any serious contribution. This is a gross unethical use of public funds and should be discouraged. Every instrument bought with public funding should be treated as a public property and with reasonable caution on their misuse, should be made available to all, based only on the scientific merit of the analysis being done. It is also ethical that precious public funds are used judiciously in the choice of a program. Only those programs that conform to the overall contours of TAU's mandate should be taken up.

11. EMR grants and TAU grantees

These guidelines shall also apply to researchers availing of TAU extramural grants, as well as to TAU Fellows including the Distinguished Fellows.

12. Grievance Redressal Mechanism: Appointment Ombudsman

The Scientific misconduct would be investigated by scientific investigation board (SIB). The report of the SIB would be shared with the accused while implementing the punitive action. Any scientific / technical staff or a research worker, who is not satisfied with the recommendation of the SIB and the punishment / decision based on same by the competent authority can appeal, within 60 days, to the Vice Chancellor, TAU for grievance redressal. The appeal should be based on merits, clearly bringing out facts and

with supporting evidences that were not taken into consideration by the SIB. Vice Chancellor, TAU may, in turn, and based on the merits of the appeal, refer the matter to an Ombudsman of the concerned subject group for recommendation. The decision of Vice Chancellor, TAU on recommendation of the Ombudsman shall be final and binding on all sides. Any researcher or student getting penalized by his/her supervisor for unethical practices related to publications and laboratory practices may approach standing publications, ethics, and Scientific Vigilance Committee (SEC)/ Ethics Officer.

An Ombudsman here is defined as an independent, impartial, free-service provider, who has not been associated with, or a beneficiary of the TAU system ever. The Ombudsman would investigate complaints that have not been solved by the organization complained against. He/she would investigate complaints where something has been handled badly or unfairly, making someone suffer as a result. The Committee suggests the appointment of one Ombudsman to each of the four science major areas of TAU (groups of Physics, Chemistry, Biology and Engineering). Such an Ombudsman should be a non-TAU person of proven scholarship, integrity, and administrative experience. It is also suggested that all the Ombudsmans work in close synergy and as a group, for an overall coherence of application of rules, within the TAU system. The Ombudsman may take the support of any technical expert, if so required.

The Ombudsman would be provided necessary support by Standing Publications, Ethics and Scientific Vigilance Committee (SEC) coordinated by Ethics Officer of the TAU. The Ombudsman will be paid honorarium, TA/DA and provided accommodation for holding the meetings as per norms of the TAU.

13. Whistle Blowers and his/her identity and Protection

Whistle blowers are people who inform the authorities of some wrong doings. In an ideal case, any unsigned report from an unidentified source/person should not be acted upon. However, in the larger interest of TAU, the Vice Chancellor may initiate an inquiry in cases where any anonymous complaint is accompanied by factual and verifiable data for a particular case. Fraudulent and inappropriate complaints made for reasons other than the larger interest of TAU, will also attract a departmental enquiry, but this will also be in the scope of an Ombudsman. All such cases will be dealt with

by TAU and the protection of whistle blower will be ensured by it. However, the main concern regarding an anonymous complaint is that if more information is required about any aspect, it cannot be obtained, and hence the investigation may abruptly get stalled. Maintaining the anonymity of the whistleblower throughout the process of investigation of the complaint may also be difficult for an unbiased enquiry.

14. Acknowledgements

TAU acknowledges that the content for this document has been prepared after refereeing to the guidelines, policies set by various agencies like UGC, ICMR, CSIR, TIFR, COPE and various relevant publications.

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19. Guidelines from Committee on Publication Ethics(COPE)

Appendix – A

A.1 Authorship Guidelines

While authorship accrues to all those who contribute to the study that being submitted as a research paper/book/monograph, often differences arise on the sequence of the authorships and credits therein. A few general guidelines are provided below, though there should be a room in these for a case-by-case consideration. Normally the person who is responsible for ideation and conceptualization of experiments/problems, creation of a work plan/identification of potential collaborators and their role and the one who ensures the veracity of data becomes the Corresponding Author. The person who carries our most of the actual work in the laboratory or on the computational / calculation / formalism aspect normally becomes the first author. This person is also responsible for the first draft of the paper. Normally this would be a younger worker like a graduate student or a junior colleague.

Co-authorship accrues to all those who have made a reasonable scientific contribution to the work including generating new data/developing algorithms or like. Co-authors are also expected to explicitly contribute to the science being presented and agree to the results in a formal sense. Any change in sequence of authorship, post-submission, should be done by informing the editor with clear reasons. Care should be taken to ensure that such actions are not required as they reflect somewhat poorly on the group and the institution. In the case of reviews/report where consolidation/synthesis of information is generally presented, the sequence of authorship should be discussed a priori. In such cases, the lead author is the one who takes the initiative of writing the first draft.

Authorship is a serious matter and be accepted with all responsibility that accrues with it. Thus, by agreeing to a co-authorship one implicitly assumes shared accountability for the scientific content, its accuracy vis-à-vis its being genuine, and other related aspects. This applies in all cases even when a fraudulent data/manipulated image was not sourced from one of the co-authors. Even co-author shares a role in any part of a fraudulence in the entire work chain, if detected at any time. A written consent of all authors to any report that is submitted for publication in some form is desirable, along with an explicit statement of who did what and contributed in which manner. It is unethical to offer, expect or accept honorary or guest authorship based on some ones administrative/scientifically higher position.

Acknowledgement is another area that needs due care. Normally, in any study many people

and all these should be acknowledged in a proper manner. These include, people, funding sources and the laboratory staff. Routine discharge of duties by staff need not be acknowledged, but those who contribute to science/experiments/discussions in a meaningful manner should not be ignored either.

Appendix – B

B.1 Standing Publications, Ethics and Scientific Vigilance Committee (SEC)

TAU should have a Standing Publications, Ethics and Scientific Vigilance Committee (SEC) look into the best lab practices and publications to be observed by the scientific community. The Committee would be chaired by a professor and comprise scientific and technical, administrative, and research fellows/students as members (with gender representation), with the Ethics Officer as the Member Secretary. The Committee would be constituted by the Vice Chancellor. The terms of Reference (TOR) of the committee would be as follows:

i. The Committee shall regularly conduct seminars in Good Laboratory Practices and publications;

ii. shall advice and guide the Vice Chancellor, TAU on all matters pertaining to misconduct in scientific practices and research ethics;

iii. shall respond to any external parties for compliance with ethical standards in respect of research projects undertaken by staff;

iv. on an entirely voluntary basis, researchers may seek the inputs of this Committee for consultation on ethical aspects of their research;

v. shall work on any other matter as assigned by the Vice Chancellor, TAU

B.2 Standard Operating Procedure (SOP) for dealing with Scientific Misconduct

The following SOP is suggested for dealing with alleged cases of Scientific Misconduct.

i. Complaint/information can be entertained from an 'identified' individual, Anonymous complaints are also to be entertained based on the merit of the case.

ii. The scientific misconduct is to be investigated by the Scientific Investigation Board (SIB),

iii. Vice Chancellor will set up a Scientific Investigation Board (SIB) comprising scientific/technical personnel of appropriate expertise (with gender and SC/ST/OBC representation) and with at least one external expert to investigate the matter, fact finding and recommending the punitive action (taking input/response of the accused, needed).

iv. The SIB will do due diligence including interaction with the concerned scientific staff, examine the records and suggest the suitable punitive action commensurate with the offence done as per the Table-I. Based on the Table-I, SIB will submit the report to the Vice Chancellor, TAU as the case may be for consideration and appropriate action.

v. In case of minor, moderate and major penalties (except those covered in section B.3 below), same will be imposed on the accused by Vice Chancellor, TAU.

vi. The cases of major and severe transgressions involving penalties such as Deferred promotion / Deferred increments / Reduction to lower stage / Compulsory retirement / Removal from Service, will be dealt as per the established administrative process (as per the rules and regulations adopted by TAU) by administration with the approval of the competent authority.

B.3 Table-1: Levels of misconduct and suggested action to be taken

Category	Characteristics	Examples	Action
. Simple Error/Minor Transgression	Non-deliberate, evidence of experiments having been performed via lab books or other records, with minimal or no change to primary scientific conclusions	Plagiarism – materials and methods • Unmodified/Un-manipulated image duplication between figures or panels, where original data can be shown Mistake in matters of credit/authorship where there is no clear misconduct	First: No action required other than correction of mistake/Counselling Second: Minor penalty such as warning for person(s) held responsible

II.Moderate Transgression	Very frequent instances of category I transgressions (>10). Deliberate, errors with changes to primary scientific conclusions, probable data fabrication	Plagiarism – main text • Modified image duplication between figures or panels or Instances of image duplication between publications, inability to provide original data • Deliberate denial of authorship or credit	Minor penalty commensurate with frequency and degree Removal from responsible position/Ban supervision / Ban submission of proposals/ Ban consultancy/ Defer increments/ Deferred promotion / Take a credit course on Ethics.

III. Major Transgression	Frequent instances of category II transgressions	• Plagiarism – data for >50% of text • Clear image manipulation sufficient to change scientific interpretation • Instances of repeated image duplication between publications, with different labels Deliberate usurping of credit, fake authorships	Penalty to responsible person(s) Take a credit course on Ethics/ Deferred promotion/ deferred increments/ reduction to lower stage/ compulsory retirement
IV. Severe Transgression	Very frequent instance of category III transgressions		Major penalty commensurate with the severity of misconduct Compulsory retirement/ removal from service

Appendix – C

Conflict of Interest Statement

1. I hereby certify and undertake that none of my relatives, students, collaborators, group members or institutional members is/are being considered in the proposed meeting for decision making.

2. For members participating in the meetings related to Commercialization of R&D activities of TAU:

   I hereby certify and undertake that I do not have direct or indirect financial benefit in the proposal of commercialization deliberated in this meeting and none of my family members have direct or indirect financial interest in the proposal of commercialization deliberated in this meeting. I or my family members have not made any investment in this company / startup.

   [Strike out whichever is not applicable].

Sl. No.	Name, Designation, and Institutional Affiliation of the Member	Signature	Remarks (viz., recused due to Conflict of Interest etc.)
1.			
2.			
So on…			

(Signature of the Chairperson of the Committee)

Name:
Designation:
Institutional Affiliation:
Date:
Place:

Note: Any member can ‘recuse’ oneself from the meeting because of a potential conflict of interest and same need to be recorded in remarks section.