Guidelines for a Code of Conduct for Responsible Research

(2023)

Edited by the Supervision Department of the Ministry of Science and Technology

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Responsible scientific research is an important guarantee for the healthy development of science and technology, and is an indispensable requirement for the realization of high-level scientific and technological self-reliance. In order to guide scientific researchers and research institutions, schools of higher education, medical and health institutions, enterprises, etc. (hereinafter collectively referred to as "scientific research units") to carry out responsible scientific research, the Department of Supervision of the Ministry of Science and Technology has organized the preparation of the "Guidelines on the Code of Conduct for Responsible Research", which puts forward scientific ethical norms and academic research norms that should be followed universally in the practice of scientific research.

I. Research selection and implementation

The research topics should adhere to the "four directions", highlight the problem orientation, conform to the requirements of scientific and technological ethics and scientific and

technological safety regulations, avoid simple repetition or low-level research, avoid detachment from reality or blind pursuit of hotspots, and shall not carry out research prohibited by laws and regulations. The declaration, implementation and acceptance of research projects shall comply with relevant regulations, and necessary resources shall be invested in the research process.

(i) Scientific researchers

1. The research topic should consider the scientificity, innovation, applicability and feasibility of the research, and seek the difficulties, doubts and gaps in the research field after sufficient literature review, investigation and scientific demonstration, combined with the resource conditions necessary for the completion of the research. If the research is not aimed at verification, it should avoid simply repeating the research already carried out by others.

2. The declaration materials of research projects should be true, accurate and objective. Duplicate declarations using the same or similar research content shall not be used, and others shall not be listed as members of the research team without consent. No plagiarism, trading, or ghostwriting of declaration materials shall be allowed, and no generative artificial intelligence shall be used to directly generate declaration materials.

3. A budget for research funds shall be prepared in accordance with relevant regulations and actual needs, and the research funds shall be utilized in a reasonable and prudent manner, without including in the budget the costs of completed research or costs unrelated to the declared project.

4. It is not permitted to seek favours, directly or indirectly, explicitly or implicitly, from the evaluation organizers, their staff and evaluation experts, etc., in order to seek undue benefits.

5. They should ensure that they invest the time and effort required for the research, and that the number of projects they lead and are mainly involved in during the same period of time should be in line with the limitations set by the relevant funders. The implementation of the research should be scientifically rigorous, with appropriate methodology and technical means, and

should strictly fulfill the obligations of the mission statement or contract, without arbitrarily lowering the objectives and agreed requirements, subcontracting or sub-subcontracting the research tasks to others in violation of the law, or using irrelevant research results to offset the delivery of work.

6. In activities such as research topic selection, project declaration, research implementation, closing and acceptance, and participation as an expert in project evaluation, possible conflicts of interest should be recognized in a timely manner and declared proactively, so as not to affect the objectivity and impartiality of the research or evaluation, and to be detrimental to the interests of others or the public.

7. Relevant provisions on security and confidentiality, use of funds, sharing of resources and data, and attribution of intellectual property rights should be strictly observed. Reasonable use of generative artificial intelligence to participate in research implementation in accordance with regulations.

(ii) Scientific research units

1. The research integrity status of the project applicants and the authenticity and completeness of the declaration materials are examined and checked, and the possession of good research integrity status is regarded as a necessary condition for declaration.

2. Implement the main responsibility, provide the necessary support conditions, follow up the progress of research in a timely manner, and strengthen the management of the whole process of research activities.

II. Data management

The collection and recording of research data should be complete, accurate and traceable, and their preservation and use should be in accordance with professional norms and management regulations, so as to ensure data quality and data security.

(i) Scientific researchers

1. It should strictly implement the operational specifications for data collection, choose appropriate data collection methods, and collect research data objectively, completely and accurately.

2. Record research processes and experimental data in a

timely and accurate manner to ensure the integrity, objectivity and traceability of research records and data. Data shall not be recorded and used selectively to obtain specific results.

3. If a written record is used, a laboratory record book with consecutive page numbers and meeting the requirements for storage shall be selected; the original data, charts, photographs, etc., generated by the experiment shall be pasted in an orderly manner in the corresponding position of the laboratory record book and labeled in detail. Corrections to the record should be made by the original record keeper, shall not cover the original content, explain the reasons for correction and sign. No data shall be altered or any part of the record book shall be destroyed. The original data shall not be fabricated or tampered with, or the artificially processed data shall be kept as the original data. Where electronic records are used, they shall be kept with the experimental records

Linking and ensuring that data and time of generation etc. have not been artificially altered.

4. Prior consent must be obtained from the data owner for the use of others' unofficial published data, and the source of the data must be stated.

5. The use, dissemination, reproduction, preservation and deletion of data shall comply with the requirements of the Data Security Law, the Personal Information Protection Law and the Measures for the Management of Scientific Data. The collection of human test data or sensitive data involving privacy and confidentiality shall be carried out in strict compliance with relevant laws and regulations and ethical norms, and shall be carried out only after obtaining the informed consent of the relevant personnel or the approval and consent of the organization with approval authority. Data shall not be used for purposes other than those agreed upon, or transferred or disclosed to other organizations or persons without consent.

6. When analyzing and processing data, appropriate analytical methods and processing tools should be used to reflect the research process and findings comprehensively, clearly and accurately, and detailed in the research report.

7. Scholarly images should be processed in

accordance with the specifications of the appropriate discipline or scholarly publishing organization, and the portion of the scholarly image that has been processed should be identified at the time of publication. Key information contained in the original scholarly image should not be altered, blurred, eliminated, or distorted, and scholarly images should not be inappropriately or deceptively manipulated, including the addition, removal, or shifting of objects, or the removal or defocusing of backgrounds. Combined images that are spliced should have a clear demarcation line added for each group or a clear description of how the images are spliced. No other images obtained under conditions other than those of this experiment should be used in place of real experimental images, and images from the research results of others should not be used directly without attribution or provenance.

8. After the publication of the research results, it is advocated that, before violating the provisions of confidentiality and intellectual property rights

Submit or openly share the raw data involved, as well as methods, reagents, software, source codes and other materials in an appropriate manner to enhance the value of data applications, as mentioned above.

9. Organize, preserve, and back up research data in a timely manner, and take effective measures to prevent data loss, leakage, destruction, or tampering.

10. All experimental records, experimental data (including unpublished data, negative data, etc.) and experimental transcripts should be properly preserved in accordance with the regulations of the discipline or the research unit, and experimental samples should be preserved in accordance with the relevant technical specifications. Within one month after the publication of the thesis or other research results, the original data such as experimental records and experimental data shall be submitted to the research unit for centralized filing, or in accordance with the relevant management regulations of the research unit.

11. The project leader shall supervise the collection, preservation and utilization of data, carry out the necessary checks or validation of the collected data to ensure that the data are reliable and that all records and raw data are appropriately preserved within the specified period.

12. When it is found from the research data that there may be serious impacts or threats to public health, ecological environment, public security or social order, it should be reported to the relevant authorities in a timely and proactive manner. The release of data should comply with the relevant regulations, remain transparent and objective, and avoid intentionally highlighting or emphasizing or concealing or ignoring specific content.

13. It should follow the relevant laws and regulations and academic norms, use generative artificial intelligence to process text, data or academic images in a reasonable manner in accordance with regulations, and guard against risks such as falsification and tampering with data.

14. Experimental research data shall not be obtained by paying a third-party organization or another person, etc., without actually conducting the research. When commissioning a third-party organization to conduct experiments or data collection due to the lack of conditions, an experimental design plan shall be proposed by the researchers, and the

Analytical studies based on original experimental records and data provided by third-party organizations should indicate the source of the data at the time of publication. The use of third-party survey statistics or data from relevant public databases should be obtained through legal channels, and the source or provenance should be indicated.

(ii) Scientific research units

1. Establish a management system and quality control system for research data, and make clear provisions on data collection, remittance, preservation, attribution, use, sharing, confidentiality and security, etc., and strictly enforce them. Regular inspections are carried out to ensure that the original records of research activities are timely, accurate, complete and properly preserved, so that they can be searched and traced.

2. Provide software and hardware facilities, funds and personnel required for research data storage, management, service and security. According to the characteristics of research activities to produce a unified system, continuous numbering, easy to use the original record media, and properly preserved, archived.

III. Literature citation

Researchers should make a clear distinction between their own research results and those of others in project applications, final reports, and theses or other research results, and refer to the views or research results of others in a factual and accurate manner, and indicate the source in an appropriate manner.

1. If you refer to or draw on other people's academic views, research ideas, or published works in your research, you should indicate this by citation, annotation, or acknowledgement in accordance with the common standards or norms of your discipline.

2. Whenever possible, original documents should be cited. If it is necessary to cite the content of original documents cited or summarized by other authors due to the inaccessibility of the original documents, etc., the content should be labeled as a citation and should be as accurate as possible.

3. Ensure objectivity and accuracy when citing the literature of others and avoid misquoting or quoting out of context. The results of unfamiliar research areas should not be cited, and should not be cited without understanding the content or progress of the research, and should not intentionally distort, elevate, or belittle the academic views or research findings of others. In principle, retracted articles should not be cited except for critical use.

4. Content generated using generative artificial intelligence, especially when it involves key content such as facts and opinions, should be clearly labeled and described in terms of its generation process to ensure truthfulness and accuracy and respect for the intellectual property rights of others. Content generated by other authors that has been labeled as AI-generated content should generally not be cited as original literature, and if citation is necessary, it should be explained.

5. If you use a published graph or picture, you should obtain prior permission from the copyright holder and use it within the scope of the permission, with an acknowledgement of the source or provenance.

6. One should not intentionally ignore or conceal relevant and important literature published by others or literature that is

detrimental to one's own research.

7. References should not include literature that has not been referenced or is not relevant to the research, including inappropriate self-citations, agreed cross-references with others, or references to irrelevant literature at the request of reviewers or editors. Unverified references generated by generative AI should not be used directly.

Ⅳ. Attribution of results

The authors should have made substantive academic contributions, i.e., significant contributions to the research idea, design, implementation, data acquisition, data analysis and interpretation, or critical changes to important intellectual content. Those who have not made substantial academic contributions to the results should not be named.

1. All authors should have reviewed and agreed in advance to the publication of the results under their authorship and are responsible for the content of the parts they have completed or participated in. The primary responsibility for the authenticity and reliability of the results lies with the first author, the first author and the corresponding author.

2. All signatories should make a substantial academic contribution to the results and should not be titled or impersonated. Those who discover that they have been named or impersonated should take the initiative to challenge and request a correction.

3. The order of attribution is usually in accordance with the level of contribution to the result, and should normally be determined jointly by all those who have accomplished the result, or follow the attribution practices of the relevant disciplines.

4. Individuals and organizations who do not have attribution status but who have contributed or assisted in the research may indicate their contribution through acknowledgements, annotations, and so forth.

5. For funded research results, the funding organization, project title and approval number should be truthfully marked as required. For the results of projects funded by more than

one organization, in principle, they should be ranked according to the size of their contribution to the results. Items unrelated to the research work or false shall not be labeled. It shall not fail to disclose the source of funding, conceal the real author information or make up fictitious signatures in order to cover up the conflict of interest.

6. The main completion unit of the results shall not be changed arbitrarily due to the change of the work unit of the results completion unit. Personal information such as work units and titles shall not be fictionalized or falsified.

7. Generative AI shall not be listed as a co-complete of the results. The main ways and details of the use of generative AI should be disclosed in a relevant place such as in the research methodology or appendices.

V. Publication of results

Publication or dissemination of papers, monographs and other results should fully describe the research process, clearly introduce the research methodology, accurately describe the research conclusions, and submit or share the relevant data as required.

data, making it easy for others to repeat the validation and judge the reliability of the findings.

(i) Scientific researchers

1. Research results should first be published through a peer-reviewed process or exchanged within the scientific community through academic presentations, colloquia, preprints, etc. Publication of breakthrough research results and major research advances shall be subject to the consent of the scientific unit in which they are published. Research results that have not been scientifically verified or peer-reviewed shall not be disseminated to the public.

2. The publishing organization of the results to be published and the databases in which the results are included should be verified to circumvent the lack of quality assurance or false publishing organizations.

3. The same manuscript reporting the results of research or manuscripts based on the same data with minor differences may not be sent to two or more publishers for publication at the same time. Submission to other publishers is only permitted after notification of rejection, or after expiration of the specified review period, or after a request for withdrawal of the submission has been made and

confirmed by the publisher. In the case of joint work by more than one author, the consent of all authors is required before a decision is made to transfer the manuscript.

4. It is not allowed to re-publish a published paper or the data and pictures therein, or to take part of each published paper and put together a "new result" and publish it. If it is necessary to re-publish a paper, prior permission must be obtained from the published and unpublished publishers, and when re-publishing the paper, it should be stated in a prominent position, with an indication of the place where the original publication was made.

5. It is not allowed to split a complete research result into several results for publication in order to maintain the integrity, systematicity, scientificity and logic of the related results, and not to write results signed by different authors based on the same research content.

6. It is the responsibility of the first finisher, first author and corresponding author to ensure that all signatories

All agreed to publish and endorse the final results.

7. Publication of results should be accompanied by the required declaration of conflict of interest and indication of the source of funding for the research results.

(ii) Scientific research units

1. (c) Strengthening the management of researchers' publication of research results, and establishing a system of integrity commitment for the publication of research results, remittance and verification of original data and information, traceability of the research process, and inspection and reporting of research results. For projects supported by financial funds, researchers should be urged to submit relevant scientific and technological reports according to regulations. For those who publish multiple papers and obtain multiple patents within a short period of time, the verification and checking shall be strengthened in accordance with the regulations. For researchers who intend to publish results involving confidential or sensitive information, they shall be examined and checked in accordance with relevant regulations.

2. For research results published in academic journals included in the early warning list, timely warning reminders

should be carried out; for research results published in academic journals included in the "blacklist", they will not be recognized in all kinds of assessment and evaluation and will not be reimbursed for the relevant publication costs.

3. If the academic papers and other research results published by the researchers of the organization are in violation of the requirements of scientific research integrity, the responsible persons shall be seriously dealt with and required to take measures such as withdrawing the papers.

(iii) Academic Publishing Unit

1. To establish and improve the systems of peer review, ethical supervision, copyright management, commitment to academic norms, handling of objections to retractions and refunds, and management of conflicts of interest, and to establish a system of management and supervision of editors, editorial board members and reviewers.

2. (a) Clearly define the norms for the publication of research results through the "Call for Papers" and "Instructions for Authors".

Publication of the results may be required to indicate the contribution of each signatory.

3. Authors should be required to disclose whether or not generative AI is used, state the specific software name, version, and time of use, and provide specific labeling of ancillary generative content that involves factual and opinion citations.

4. Original submissions, review comments, revisions, correspondence on published research results

Records of letters and editorial rejection or acceptance decisions should be kept for at least three years for verification.

5. It shall detect and screen for scientific misconduct in authors' submissions and receive complaints and reports about scientific misconduct. For manuscripts with scientific misconduct or serious errors, comments, concerns, corrections, withdrawals and other handling measures should be taken, and the relevant databases that include the research results and the author's organization should be informed in a timely manner.

6. (c) Selecting reviewers appropriately, urging them to review carefully and impartially, and monitoring and evaluating their compliance with scientific integrity requirements accordingly. Reviewers are reminded to use

generative AI in the review process in a compliant and cautious manner. They should not unduly influence the compliance assessment of reviewers, or unreasonably deny or distort the reviewers' review comments.

7. Editors and reviewers should not disclose, openly discuss, plagiarize, or appropriated authors' unpublished research without authorization, intentionally delay the progress of review or publication, use the publication process or the content of the manuscript for improper gain, or ask authors to cite specific literature in a non-essential way in order to increase the impact of the journal.

8. Compliance with normative requirements related to conflict of interest should require that editors do not conceal their interests with contributors or intentionally select reviewers with potential or actual associations or conflicts of interest to review manuscripts.

VI. Peer review

Peer review is an important reference for the allocation of research resources, acceptance of research results, publication of research results, evaluation of talents, scientific and technological awards, and promotion of titles. The organizers and reviewers of the review activities should guarantee the scientific, authoritative, objective and fairness of the peer review process and create a good peer review ecology. Researchers should actively participate in peer review activities.

(i) Critics

1. Conduct deliberations objectively, fairly and rigorously, respect the dignity and academic autonomy of the person under review, respect different academic viewpoints, and constructively present comments and suggestions. The comments shall not contain insulting, intentionally demeaning or unfair words or comments. Comments should not be influenced by non-academic factors.

2. They should participate in peer review based on their own professional knowledge and ability, and not participate in reviews that are unfamiliar with the matter under review or the relevant research direction,

or that cannot be completed within the specified time frame.

3. Provide specific and informative comments, with reasons or evidence where necessary. It is not permissible to ask others to comment or write comments on your behalf.

4. If there is a conflict of interest with the person being evaluated, he or she shall take the initiative to explain the situation to the organizer of the evaluation activity and recuse himself or herself as required or let the organizer of the evaluation activity decide whether or not to participate in the relevant evaluation.

5. Strictly abide by the evaluation work discipline, shall not accept "greetings", "connections" and other invitations, shall not ask for, accept gifts or other gifts from interested parties.

6. Confidentiality of the content and process of deliberations shall be maintained as required. Do not make unauthorized copies or proliferate the materials under review, and do not disclose information on the subject of review, expert opinions, review conclusions, etc. that needs to be kept confidential. Not to use or share or discuss with others the views, data and methods of the subject of review outside the peer review process, not to adopt the views or data of the subject of review without permission, and the reviewer shall not ask the subject of review to cite his/her own literature.

7. If generative artificial intelligence is used in evaluation activities, prior consent should be obtained from the organizer of the evaluation activity, the operation should prevent leakage of the evaluation content, and the necessary remedial measures should be taken in a timely manner if information leakage occurs.

8. Any violation of scientific research integrity, scientific and technological ethics, scientific and technological security and confidentiality that is found or justifiably suspected during the evaluation process should be promptly reflected to the organizers of the evaluation activities.

(ii) Persons under review

1. Ensure that the material provided is truthful, reliable,

accurate and clearly identifies the source or attribution of all research results, and does not include the results of other projects or other people's research without justification.

2. Anyone who believes that a reviewer has a conflict of interest with him or her should, in accordance with the procedure, submit to the organizer of the review activity a request for the reviewer to recuse himself or herself and provide sufficient and reliable reasons.

3. Not to interfere with the evaluation process, not to contact privately or to bribe or threaten the evaluator or the organizer of the evaluation activity.

4. Anyone who disagrees with the results of the deliberations shall submit an application for review in accordance with the relevant procedures. There shall be no threats, attacks or retaliation against the reviewer or the organizer of the review activity.

(iii) Review of event organizers

1. Formulate scientific, fair and transparent rules and procedures for deliberations, and establish a system for the selection, disqualification, work supervision and credit evaluation of deliberators.

2. Strictly perform their duties, detect and control possible conflicts of interest in a timely manner. Uphold the independence of deliberations and do not interfere with the legitimate deliberations of the reviewers by the will or authority of the organizers or individuals.

3. Observe the requirements of confidentiality, and do not disclose information such as the list of evaluation subjects or evaluators, evaluation opinions, evaluation results, etc. in violation of the law.

4. Scientific research misconduct found in the evaluation shall be handled in accordance with relevant regulations.

VII. Ethical review

Ethics in science and technology is the value concepts and behavioral norms that should be followed in carrying out scientific and technological activities such as scientific research and technological development. Scientific and technological activities should follow the principles of "promoting human well-being, respecting the right to life,

adhering to fairness and impartiality, reasonably controlling risks, and maintaining openness and transparency", and should carry out scientific and technological ethical risk assessment or scientific and technological ethical review in accordance with regulations. Actions that violate the ethical requirements of science and technology should be actively reported, resolutely resisted, and seriously investigated and dealt with.

(i) Scientific researchers

1. They should learn about S&T ethics and related management regulations, raise their awareness of S&T ethics, strictly abide by the norms of S&T ethics, and take the initiative to participate in the governance of S&T ethics.

2. Where scientific and technological activities involving human research participants, experimental animals, or activities that do not directly involve human beings or animals but may pose ethical risk challenges in terms of life and health, the ecological environment, public order and sustainable development, scientific and technological ethical review shall be conducted in accordance with the regulations. Research may be conducted only after approval has been obtained, and may not exceed the approved scientific and technological

The scope of the activity is defined in the implementation program.

3. Research participants should be selected fairly and reasonably to ensure that their inclusion and exclusion criteria are scientific, rational, appropriate and fair. Research participants shall not be recruited by inducement, coercion, deception and other improper means. Special protection shall be given to research participants involving specific groups such as children, pregnant women, the elderly, the mentally challenged, the mentally handicapped, etc.; research involving fertilized eggs, embryos, fetuses, or research that may be affected by assisted reproduction techniques shall be proactively described in detail.

4. Research participants or their guardians should be clearly informed of all relevant matters and the rights to which they are entitled, informed consent should be obtained, and it should be ensured that the informed consent process is standardized and that agreements or stipulations made with research participants or their guardians are strictly adhered to.

5. The collection, storage, use and disposal of biological samples involved should follow relevant laws and regulations,

and the handling of personal privacy data and biometric information should be in line with relevant regulations on personal information protection.

6. It should be ensured that the research is carried out by appropriately qualified personnel to ensure that the risks of the research are minimized and unnecessary harm to research participants is avoided. Trials should not be conducted if there is reason to be sure that they will result in harm, such as death or disability, prior to the start of the trial, and must be discontinued immediately if there are indications during the course of the trial that they may result in harm, such as death or disability.

7. To carry out scientific and technological activities involving experimental animals, the use of experimental animals shall conform to the principles of substitution, reduction and optimization, and ensure that the sources of experimental animals are legal and reasonable, and that the requirements for technical operations such as breeding, use and disposal conform to the animal welfare standards.

8. When carrying out scientific and technological activities involving emergencies such as major public events, the procedures for emergency review of scientific and technological ethics and related requirements shall be observed, and emergency situations shall not be used as a reason for avoiding scientific and technological ethical review or lowering the standard of scientific and technological ethical review.

9. To carry out scientific and technological activities included in the management of the list of ethical examination and review, after passing the preliminary examination by the scientific and technological ethics (review) committee, it shall report to the competent authorities of the place or relevant industry to organize and carry out an expert review through the scientific research unit in which it is located, in accordance with the regulations.

10. International cooperative scientific and technological activities that require scientific and technological ethical review should pass the scientific and technological ethical review required by the countries where the cooperating parties are located before they are carried out.

(ii) Scientific research units

1. Fulfilling the main responsibility of scientific and technological ethics management, strengthening the supervision of scientific and technological ethics and risk monitoring in the whole process of scientific and technological activities, and proactively studying and judging and resolving scientific and technological ethical risks in a timely manner. Where scientific and technological activities are included in the management of the ethical examination and review list, dynamic tracking and ethical risk prevention and control should be strengthened.

2. (c) Establishing science and technology ethics (review) committees in accordance with the actual situation of the organization, equipping them with the necessary staff to perform their duties, providing them with conditions such as office space and funds, and taking effective measures to ensure that they carry out science and technology ethics review independently.

3. To improve the unit's regulatory mechanism for scientific and technological ethical review and the mechanism for quality control, supervision and evaluation of the review, to guide the scientific and technological ethics (review) committee to formulate its charter, to establish systems and norms for review, supervision, confidentiality management,

file management, and other systems and regulations, working procedures and conflict-of-interest management mechanisms, so as to ensure that the scientific and technological ethical review is compliant, transparent and traceable.

4. Regularly carry out education and training on ethics of science and technology to enhance the ethical awareness of researchers

and risk prevention and control capabilities.

VIII. Academic exchanges and cooperation

Researchers are encouraged to fully exchange academic views, research ideas and research findings, and openly share research data and research results in accordance with relevant requirements. Cooperation in conducting research should enhance understanding, mutual respect, promote mutual trust, and conscientiously fulfill the responsibilities and obligations of each party. Through full consultation, the purpose of cooperation, project indicators, expected outputs, the rights and responsibilities of each party, the ownership and use of data and intellectual property rights, and the basis for measuring the contribution of the results shall be clarified.

1. Academic exchanges shall be conducted in a manner that promotes academic democracy, respects originality and insists on openness and transparency. They shall not utilize their authority, status or control of resources to suppress the academic views of others.

2. When carrying out academic criticism or responding to others' criticisms and questions, they should carry out rational questioning and criticism in a scientific spirit and professional attitude, exclude the influence of personal grudges, conflicts of

interest and other non-academic factors, refrain from making overly radical remarks in public, do not easily bring scientific differences to public opinion or use Internet public opinion to hostage academic discussions, and refrain from carrying out personal attacks and retaliation.

3. The parties to the cooperative research shall agree in advance, by means of an agreement or other forms, on such matters as rights and obligations, responsibilities and division of labor, allocation of funds, publication and attribution of results, attribution of research data and results, intellectual property rights arrangements and dispute settlement mechanisms. The costs and benefits of the research shall be reasonably distributed among the cooperative parties.

4. Parties involved in multidisciplinary or interdisciplinary collaborative research should be aware of the research norms and practices of the relevant disciplines. Differences between disciplines should be consulted and agreed upon in advance to ensure compliance.

5. In cooperative research, data sources should be ensured to be compliant, data quality should be guaranteed, and data from collaborators should be verified when necessary. Under the principle of not violating relevant laws and regulations and confidentiality provisions, the relevant research data and results shall be disclosed to the collaborators as agreed.

6. Relevant regulations on scientific research management and supervision in China and in the country or region where the partner is located shall be strictly observed in international cooperative research. If it is found or there are justifiable reasons to suspect that the collaborator has committed scientific research misconduct or violated scientific and technological ethical norms, the collaborator shall be informed immediately and the collaboration shall be suspended or terminated if necessary.

7. If relevant data need to be provided in foreign scientific and technological exchanges and cooperation, the approval procedures must be carried out in accordance with the relevant requirements, and the relevant laws and regulations on scientific and technological confidentiality and the publication of specific research results must be strictly

complied with.

IX. Intellectual property protection

In carrying out scientific and technological activities, we should respect the intellectual property rights of others, abide by China's intellectual property laws and regulations and relevant international conventions, and strengthen the intellectual property protection, management and utilization of research results.

(i) Scientific researchers

1. Before publishing the research results, the intellectual property protection program of the research results shall be fully considered, and reasonable and appropriate means of intellectual property protection shall be adopted. If patent protection is adopted, the patent application shall provide truthful materials in accordance with relevant regulations, and shall not fabricate, falsify or alter the contents of the proposed application, experimental data or exaggerate technical effects, nor shall it plagiarize, simply replace or piece together existing technologies or existing designs.

2. Comply with the regulations of the state and the research unit on the ownership of intellectual property rights of the research results and

Laws, regulations and institutional norms on the distribution of benefits, and timely and proactive disclosure of the results of research on duty to the scientific research unit in which they work.

3. Respect the intellectual property rights of others and do not infringe upon the legitimate rights and interests of intellectual property rights holders. Improve the ability to protect intellectual property rights, take effective measures to protect the intellectual property rights of important research results, respond appropriately to disputes over intellectual property rights, and safeguard their legitimate rights and interests in accordance with the law.

(ii) Scientific research units

1. Improve the intellectual property management system and explore the establishment of specialized intellectual property transfer and transformation institutions.

2. Improve the intellectual property management system, clarify the ownership of intellectual property rights of research results and the mechanism for distributing benefits, and incentivize the creation of intellectual property rights. It actively promotes the transformation and utilization of research results and safeguards the legitimate rights and interests of researchers.

3. Strengthen intellectual property risk management, raise awareness of intellectual property risk prevention among researchers, and carry out intellectual property risk warning and infringement risk investigation on a regular basis.

4. Regularly carry out training on intellectual property rights, enhance the capacity of intellectual property management services, and create a favorable atmosphere of respect for creativity and intellectual property rights.

X. Cultivation and guidance

Supervisors and project leaders shall strengthen the guidance and supervision of students and research team members. Scientific research units should emphasize the cultivation of a rigorous and serious attitude towards studies and a realistic and pragmatic scientific spirit among researchers, and promote their adherence to scientific morality and ethical norms in science and technology.

(i) Graduate advisors and program directors

1. Practicing the requirements of learning to be a teacher and being a model, playing the role of teaching by example and teaching to the students

Students and research team members are regularly educated and mentored on research integrity and ethics of science and technology.

2. Sufficient time and effort should be ensured to supervise students and research teams and to support them with the necessary research resources.

3. Understand and supervise the daily scientific research activities of students and research team members, follow up and guide the progress of experiments, review the experimental records and data, read and approve the research manuscripts, and carry out integrity checking and academic gate-keeping of the signatures of important papers and other research results, the authenticity of the research data, and the reproducibility of experiments. Students and research team members shall not be asked or acquiesced in any way to commit scientific research misconduct or other violations of scientific and technological activities.

4. Adhere to academic democracy, respect the academic opinions of students and research team members, and the reasonable requirements related to research work. The legitimate rights and interests of students and research team members shall not be encroached upon in terms of authorship of results and ownership of intellectual property

rights.

(ii) Students and research team members

1. Devote sufficient time and energy to complete the research tasks assigned by the supervisor or project leader, and respect the training and dedication of the research unit, supervisor and project leader.

2. Comply with the regulations and relevant requirements of scientific research management, report the research progress to the supervisor and the project leader in a timely manner, collect and keep the experimental records and data according to the regulations, and ensure that the research process is true, transparent and traceable.

3. Research results obtained by using the research funds, experimental equipment, data and information of the research unit or team project in which they are located shall be published, released or transferred in compliance with the relevant regulations.

4. Before graduating from the university or leaving the scientific research unit or research team in which you work, you should return all the original data, picture data, experimental records, samples and other scientific research materials in accordance with the regulations, and fail to

It shall not be taken away privately with authorization. For the use rights of data acquired or accessed in the original organization, the relevant regulations or prior agreement of the original organization should be observed.

(iii) Scientific research units

1. Research units that have the conditions should incorporate research integrity and ethics of science and technology into the curriculum system and allocate appropriate teachers.

2. To establish and improve the education and training system of scientific research integrity and scientific and technological ethics, to carry out training on scientific research integrity and scientific and technological ethics at important points such as enrollment, promotion of titles, participation in projects, etc., to strengthen the daily education and guidance, to provide counseling and guidance on scientific research integrity and scientific and technological ethics for students and researchers in need, and to conduct timely reminder conversations with those who have tendencies or incipient problems.

3. Encourage public-oriented scientific and technological research integrity, science and technology ethics and other science and technology publicity, and guide the public to

rationally view scientific and technological research integrity and science and technology ethics in the development of science and technology.

XI. Supervision and management

Adhering to both prevention and punishment, self-discipline and supervision, we should prevent and punish misconduct in scientific research, violation of scientific and technological ethics and other irregularities and misconduct. Scientific research units should effectively fulfill their main responsibilities, scientific research funding agencies should strengthen the supervision of the projects they fund, the scientific community should play the role of self-discipline and self-purification, and scientific researchers should abide by the bottom line and consciously practice good academic ethics.

(i) Scientific research units

1. To establish a sound internal management system and working mechanism, and to incorporate scientific research integrity and scientific and technological ethics into regularized management. For those who violate the regulations on the declaration and implementation of projects, the use of funds, assessment and evaluation, and violate the requirements of scientific research integrity and scientific and technological ethics, they should dare to expose their shortcomings and

show their shame.

No accommodation, no harboring, serious investigation and public exposure.

2. Organize or commission third-party institutions to carry out or commission important academic research on our researchers

The verification of research results, such as academic theses, shall be conducted on a full-coverage basis, and the verification shall be carried out on a continuous basis for a period of three to five years.

3. Equipped with appropriate full-time and part-time personnel, to carry out regular monitoring of thesis retractions, verification of experimental raw data, scientific research integrity audits and other work involving the researchers of the unit.

(ii) Research funding agencies

1. Embedding the requirements of scientific research integrity and ethics in the whole process of project guide preparation, evaluation and project establishment, process management, acceptance of the final project, supervision and evaluation, etc., establishing and improving the mechanism of prevention, supervision and investigation, and carrying out investigation, punishment and disciplinary work in

accordance with the regulations.

2. Before the approval of the funding project should be the project reporting unit, the project leader and relevant personnel to carry out research integrity status audit, included in the scientific research integrity of serious misconduct database and within the processing period, the implementation of the "one-vote veto".

3. Designate an internal organization or entrust a third-party organization to supervise and evaluate the implementation of the funded projects, and take appropriate measures to deal with the projects in accordance with the regulations, such as terminating the projects, stopping the allocation of funds or recovering the research funds.

(iii) Scientific researchers

1. If you find or have reasonable grounds to suspect that another person has violated the norms of scientific research integrity or breached the requirements of scientific and technological ethics, you should truthfully reflect the information to the relevant institutions in accordance with the relevant regulations.

2. It should consciously accept academic supervision and actively cooperate with the investigation of scientific research

misconduct and project management inspection.

3. When participating in supervisory and management activities such as investigation of scientific research misconduct as an expert, you should proactively disclose possible conflicts of interest and recuse yourself as required.

(iv) Scientific and technological social organizations

Societies, associations, research societies and other scientific and technological social groups should take the initiative to play a role in their respective fields to actively carry out the formulation of codes of conduct for scientific research activities, integrity education and guidance, and the investigation and identification of scientific research misconduct, so as to promote researchers to carry out responsible research and to realize self-regulation, self-management and self-purification.

1. It should formulate and improve the self-discipline convention and professional ethics code for scientific research activities in this field in the light of the actual situation, regularly carry out education on professional ethics and academic style, and play the role of self-discipline and self-purification.

2. It actively participates in the formulation of the code of conduct for scientific research activities, the standards for recognizing scientific research misconduct and other relevant

systems and norms, and makes compliance with the code of scientific research integrity and scientific and technological ethics as an important condition for scientific and technological evaluation activities such as the development of members, the selection of prizes, the nomination of talents, the election of academicians, the evaluation of entrusted projects, and the support of projects for young people. Members who violate the norms of scientific research integrity and scientific and technological ethical requirements will be disciplined accordingly.

3. Take the initiative to accept the entrustment of the competent department or relevant units, and organize and carry out academic investigation activities concerning scientific research misconduct.

4. Setting up academic criticism topics and special editions in conferences and journals sponsored by the institute, advocating serious academic discussions and comments, encouraging young researchers to boldly put forward their own academic views, actively communicating and dialoguing with academic authorities, and creating a free, open and equal academic ecology.