

Ethical Guidelines for Research at the Graduate School of Frontier Sciences

Approved by the Graduate School Committee
Graduate School of Frontier Sciences
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1. Attitude Required of Scientists

Every scientist starts out on the path of science as an individual human being, and every human is obliged to abide by the moral principles that define society. Those ethics call on us to be earnest and sincere in our dealings with others which include no lying, no deceiving, and no stealing among other principles. Adherence to ethical guidelines is just as important in scientific research as it is in everyday life. To accomplish this, scientists must be well aware of the harmful pressure of research that results from intensive observation and experimentation to elicit the truth, a pressure which can lead to unintentionally ignoring inconvenient data, or treating necessary conditions as sufficient conditions. Scientists must remember that the long history of science has taught that research built on a fragile foundation is doomed to eventual collapse. In the same vein, scientists must constantly approach their research with an objective viewpoint in pursuit of truth that will stand up to the scrutiny of generations to come.

2. Originality in Research

One of the most important attributes of good research is originality. Scientific progress represent an extensive accumulation of original discoveries, and as such scientists must be able to objectively explain the originality of their work based on appraisal of the originality of other scientists, not just actively pursue one's own original research. Any assertion of original research without justly and properly appraising the ideas of others must be avoided at all costs.

3. Documenting the Research Process

Documenting your entire process is especially important, as research results can only qualify as scientific truth when they are based on objectivity and are reproducible under the same conditions. Recording the research process is an indispensable task that creates the primary information for self-checking the reproducibility of your research, and for enabling others to reproduce the same results. For this reason, every effort should be made to document the research process in detail through copious experiment recordkeeping, and to preserve that documentation and the test samples or specimens.

4. Fair and Responsible Publication

Scientists should endeavor to disseminate the results of their research throughout society as broadly as possible. This task is essential to fulfilling the duty of every scientist to accumulate the intellectual property shared by humankind and to repay society for its support of science. Research results can be publicized in various ways such as papers contributed to a scientific journal; reports submitted to a professional organization; oral or poster presentations at conferences, symposia, or other events; or graduate theses or dissertations. Regardless of the method, adhere strictly to the following guidelines to ensure the integrity of the information published:

- (1) In addition to the obvious obligation of no falsification and no fabrication, avoid using vague language that could lead to misunderstandings. Also, explain your research in proper and sufficient detail to ensure that it is understood correctly.
- (2) Properly cite the research accomplishments of others.

- (3) When using unpublished ideas or data of other researchers, be sure to obtain their approval in advance, and to comply with the agreed upon manner regarding how such material should be presented.
- (4) Pay due attention to copyrights and other intellectual property rights.
- (5) Published research results must not be re-published under the guise of original material.
- (6) You must be accountable for what you publish, at the time of publication and thereafter. This includes publishing any errors found in your work after its publication.

5. Integrity and Responsibility in Joint Research

Opportunities of engaging in joint research have expanded in recent years as a result of the growing diversity and complexity of research focuses, as well as the increasing convenience of transportation and telecommunications. When taking part in collaborative research projects, adhere to the following guidelines to avoid potential conflicts with research partners and/or their institutions.

- (1) Make every effort so that your understanding of the project and that of your joint research colleagues are in sync with one another by maintaining close communications with them and by respecting their thoughts.
- (2) Constantly maintain shared knowledge of experiment results by immediately informing colleagues involved in the joint research of any new research results that you obtain.
- (3) The entire project team is responsible for dealing with any and all ethical issues that arise regarding joint research.
- (4) Do not publish any results of joint research without the consent of your colleagues. The entire project team is responsible for all material published.
- (5) Before publishing results or applying for patents, you and your joint research colleagues must discuss and agree upon authorship and inventorship.
- (6) When engaging in joint research with people affiliated with other institutions (domestic or foreign), familiarize yourself with that institution's ethical guidelines and rules, and avoid infringing upon them.

6. Faculty Responsibilities

Faculty are obliged not only to pursue their research with a strong sense of ethics, but also to ensure that their students meet the same high standards by providing them with proper guidance and education on ethics, including the following guidelines:

- (1) When new students join a research lab, faculty responsible for that lab must provide new students with ethical guidance in line with the *Ethical Guidelines for Research at the Graduate School of Frontier Sciences* and the *Code of Conduct for Scientific Research* prescribed by the university.
- (2) Ensure that those doing research are fully aware of the content of the laws and regulations, policies, and university rules (including those of graduate schools, divisions, departments, and any other related organizational unit of the university).
- (3) Continually check whether your students are in compliance with the code of ethics. If a student is found to have violated the code, promptly provide the proper ethical guidance needed to correct the errant behavior.
- (4) Conduct necessary and proper guidance on research ethics in a timely manner based on the results of seminars on ethical guidelines and also based on the results of a research ethics comprehension test.

7. Compliance with Laws and Guidelines Concerning Research

Your field of research is subject to certain laws and guidelines prescribed by the Japanese government with regard to ethics and safety. Be sure to familiarize yourself with all applicable laws, regulations, and guidelines thoroughly; and to comply with them throughout the process of your research (see reference list below).

8. Social Research Ethics

- (1) When engaging in research involving social or field surveys, be sure that due consideration is paid to obtaining the consent of the informants and the local community regarding the methods and nature of the study, and the publication of the results. Always consider the perspective of the informants and the local community when planning and implementing surveys. When different types of information are collected, explain the purpose of the survey, anticipated usage of the data collected, specific publication methods, the handling of private information, and other concerns to the informants; and obtain their informed consent in advance regardless of the collection method used.
- (2) In principle, survey results must be shared with the informants and the local community in some way. Part of the social responsibility of the researcher is to ensure that survey results are published in a just and proper manner, with all due consideration taken to avoid publication that may cause undue damage to the informants and the local community.
- (3) The data collected must be used in a fair and just manner. In particular, never fabricate, falsify, alter, or otherwise manipulate research data.
- (4) After completion of the study, continue to safeguard the data collected rigorously.
- (5) Always have a sincere attitude throughout the process of your research, and act with integrity in all interactions with the informants and the local community.
- (6) When conducting surveys in other countries, comply with the local laws. In addition, give all due consideration to local customs, and approach any survey with an attitude of respect for the informants.
- (7) Be especially prudent with video/photographic material and other images, as they entail issues pertaining not only to copyrights, but also portrait rights. For example, before using video/photographic material borrowed in a survey, you must obtain the owner's consent on the usage of the material. Also, if you plan to use videos, photographs, or illustrations created by others, or visual material that has been published elsewhere, you must obtain the consent of the copyright holder and take steps to avoid infringing upon any copyrights and portrait rights. Keep in mind that this requirement also especially applies to the use of material posted on the internet.

9. Appropriate Use of Public Research Funds

- (1) Education and research activities at The University of Tokyo are supported by 1) public research funds provided by the Japanese government, independent administrative agencies, or private businesses; 2) grants from incorporated foundations; and/or 3) joint research funds and grants from private businesses. All scientists must be acutely aware of their responsibilities when using public research funds and/or others for purchasing and inspecting materials and equipment, applications for travel expenses to conferences and other meetings to discuss research, personnel expenses (honorariums), and all other such expenses.
- (2) Scientists who manage public research funds must heighten the understanding of and strict adherence to all rules and regulations promulgated by the Japanese government and to those established by The University of Tokyo as well.

10. Ethics and Safety in Medical/Biological Research Involving Human Subjects

- (1) Due consideration must be given to the safety of human subjects, protection of their human rights, and other ethical matters.
- (2) Before engaging in research involving human subjects, you should by all means respect the guidance of the Ethics Committee of The University of Tokyo regarding safety and ethical matters involved your research plan, including matters not specifically covered by laws or guidelines.
- (3) When conducting joint research with an institution overseas, you should encourage the members of that institution to follow ethical standards equivalent to those prescribed in Japan. At the same time, however, you need to give consideration to the fact that ethical standards vary by country because they reflect local social, cultural, and religious precepts.

11. Guidance for GSFS Ethical Guidelines for Research and Comprehension Test

- (1) To attain thorough understanding of the GSFS *Ethical Guidelines for Research* and knowledge of rules regarding ethics, initial and subsequent extensive guidance sessions on the GSFS *Ethical Guidelines for Research* will be conducted and a comprehension test will be administered covering the extensive guidance session.
- (2) Attending both guidance sessions on the GSFS *Ethical Guidelines for Research* and passing a comprehension test on research ethics are prerequisites for submission of a thesis for a degree.

Appendix

(as of April 10, 2013)

□ **Ministry of Education, Culture, Sports, Science and Technology (MEXT)** 文部科学省

Guidelines concerning Improper Conduct in Research

http://www.mext.go.jp/b_menu/shingji/gijyutu/gijyutu12/houkoku/06082316.htm

Guidelines on Established Practices concerning the Response to Improper Conduct in Government-funded Scientific Research

http://www.mext.go.jp/a_menu/shinkou/hojyo/1242622.htm

Bioethics and Safety

http://www.mext.go.jp/a_menu/shinkou/seimei/main.htm

Guidelines for Management and Audit of Public Research Funds at Research Institutions

http://www.mext.go.jp/a_menu/kansa/houkoku/1343904.htm

□ **Ministry of Health, Labour and Welfare (MHLW)** 厚生労働省

Principles of Research

<http://www.mhlw.go.jp/seisakunitsuite/bunya/hokabunya/kenkyujigyou/i-kenkyu/index.html>

Management and Audit of Public Research Funds at Research Institutions (Guidelines)

<http://www.mhlw.go.jp/stf/seisakunitsuite/bunya/hokabunya/kenkyujigyou/kanrikansa/>

□ **Science Council of Japan (SCJ)** 日本学術会議

Code of Conduct for Scientists

<http://www.scj.go.jp/ja/member/iinkai/kodo/> (J)

<http://www.scj.go.jp/en/report/Code%20of%20Conduct%20for%20Scientists-Revised%20version.pdf> (E)

□ **Council for Science, Technology, and Innovation** 総合科学技術会議

Preventing Misuse of Public Research Funds

<http://gaibushikin.adm.u-tokyo.ac.jp/huseitaisaku/files/000guideline-cstp.pdf>

□ **Japan Society for the Promotion of Science (JSPS)** 日本学術振興会

Rules concerning the Response to Improper Conduct in Scientific Research

http://www.jps.go.jp/j-daikokai/data/10_saitakugo/fuseikoui.pdf

□ **The University of Tokyo (UTokyo)** 東京大学

Standards of Conduct for Scientific Research

<http://www.u-tokyo.ac.jp/ja/administration/codeofconduct/>

University President's Position Statement on the Standards of Conduct and the Establishment of Rules
(10 March 2006)

The University of Tokyo Standards of Conduct for Scientific Research
(decided at Board of Trustees meeting, 17 March 2006)

Standards of Conduct for Scientific Research leaflet

Flowchart on Surveying Improper Conduct in Scientific Research at The University of Tokyo

Office for Handling Improper Conduct according to the Standards of Conduct for Scientific Research (Administration)

Rules Governing the Committee for the Code of Conduct for Scientific Research at The University of Tokyo (revised January 2016)

Doctorate Theses and Copyrights
<http://hdl.handle.net/2261/55511>

Website for Preventing Misuse of Competitive Funds
<http://gaibushikin.adm.u-tokyo.ac.jp/huseitaisaku/>

Office for Life Science Research Ethics and Safety

external access: <http://www.u-tokyo.ac.jp/ja/administration/lifescience/>

internal access: <http://lsres.adm.u-tokyo.ac.jp/index.html>

A. Ethical Review

<http://lsres.adm.u-tokyo.ac.jp/rinriHOME.html>

Summary of Ethical Review of Research involving Humans

- (3) Rules concerning the Implementation of Research Ethics at The University of Tokyo (formerly “Implementation of Rules concerning Human Reproduction and Cloning at The University of Tokyo”)
- (4) Guidelines for Research Ethics Review at The University of Tokyo
- (5) Request Form for Research Ethics Review, and Request Form for Research Ethics Review of Human Genome Analysis Research
- (6) Guidelines concerning Research involving Humans (see “Using Human Embryonic Stem Cells 「Human Reproduction and Cloning」”)
 - a) Ethical Guidelines for Clinical Research
 - b) FAQ related to the Ethical Guidelines concerning Clinical Research
 - c) Ethical Guidelines concerning Epidemiology Research
 - d) Ethical Guidelines for Human Genome Analysis Research
 - e) Guidelines for Clinical Research of Gene Therapy
 - f) Guidelines on Clinical Research Using Human Stem Cells
 - g) The Declaration of Helsinki (partially revised 2008)

B. Experiments involving Living Modified Organisms (LMO)

<http://lsres.adm.u-tokyo.ac.jp/kumikaeHOME.html>

- (1) Rules for Experiments using Living Modified Organisms

Handbook concerning Type 2 Use of Living Modified Organisms (MEXT, May 2011)

Important Reminders on Genetic Modification Experiments (in the Japanese and English versions of the Safety Manual)

Guidelines, Rules, Laws and Regulations

- a) Laws concerning Securing Diverse Living Organisms according to the Establishment of Experimental Use of Living Modified Organisms (Cartagena Protocol) (Law No. 97, 2003)
- b) Rules for Implementing Laws concerning Securing Diverse Living Organisms according to

the Establishment of Experimental Use of Living Modified Organisms (Ordinance No. 1: Ministry of Finance; MEXT; HLW; Ministry for Agriculture, Forestry and Fisheries; Ministry of Economy, Trade and Industry; and Ministry of the Environment, 2003)

- c) Containment Measures Stipulated in Pertinent Ordinances of Japanese Government Ministries for Type 2 Use of Living Modified Organisms (Ordinance No. 1: MEXT and Ministry of the Environment, 2004)
- d) Conditions set forth in the Regulations of Host-Vector System for Type 2 Use of Living Modified Organisms
- e) Interpretation on Some Revisions of the Conditions set forth in the Regulations of Host-Vector System for Type 2 Use of Living Modified Organisms
- f) Interpretation of the Cartagena Protocol on Biosafety of the Convention on Biological Diversity

University Notices

- a) Important Reminders on Genetic Modification Experiments (May 2008)
- b) Use of Recombinant Protein for Producing Recombinant Baculovirus
- c) Experiments of Living Modified Organisms involving *Reckettisia Japonica*

C. Experiments on Animals

<http://lsres.adm.u-tokyo.ac.jp/doubutuHOME.html>

(1) The University of Tokyo Rules concerning Experiments on Animals

The University of Tokyo Manual concerning Experiments on Animals

Fundamental Guidelines for Proper Conduct of Animal Experiments and Related Activities (MEXT, June 2006)

English: http://www.u-tokyo.ac.jp/ja/administration/lifescience/sisin_eng.pdf

Japanese: <http://www.u-tokyo.ac.jp/ja/administration/lifescience/siryou5.pdf>

Guidelines for Proper Conduct of Experiments on Animals (SCJ, June 2006)

English: <http://www.u-tokyo.ac.jp/ja/administration/lifescience/kohyo-20-k16-2e.pdf>

Japanese: <http://www.u-tokyo.ac.jp/ja/administration/lifescience/siryou6.pdf>

Providing Information on the Transport of Genetically Modified Animals

Training Sessions on Animal Experiments

Self-Check and Evaluation concerning Animal Experiments

Guidelines, Rules, Laws and Regulations

Humane Care and Welfare of Animals, Living Modified Organisms Experiments, Select Animals, Invasive Alien Species, Notification of the Transport of Experiment Animals, Infectious Diseases of Animals, Narcotics, Psychotropics, others

Procedures for using Tranquilizers, Anesthesia and Analgesia on Animals and Procedures for Euthanizing Experiment Animals

D. Experiments involving Microorganisms for Research

<http://lsres.adm.u-tokyo.ac.jp/biseibutuHOME.html>

(1) The University of Tokyo Rules on the Handling and Safety of Experimental Use Microorganisms (revised February 2009)

The University of Tokyo Safety Manual for Using Microorganisms in Research (partially revised August 2009)

Cautions for Researchers using Infectious Materials Documents

Guidelines, Rules, Laws and Regulations concerning Infectious Disease

- a) Revisions on the Law concerning the Prevention of Infections and Medical Care for Patients of Infections (1 June 2007)
- b) Handling of Specified Pathogens (HLW)
- c) The University of Tokyo Rules concerning the Prevention and Outbreak of Infectious Disease (est. February 2009)
- d) The University of Tokyo Summary of the Rules concerning the Prevention and Outbreak of Infectious Disease (established February 2009; partially revised May and August, 2009)
- e) University forms
- f) Accounting ledger examples
- g) Cautions for Laboratory Visitors (examples)
- h) Cautions when Transporting Microorganisms (HLW Bulletin, specific examples)

Act on Domestic Animal Infectious Diseases Control (Guidelines, Rules, Laws and Regulations)

- a) System of Procedures and Approvals for Storage of Pathogens according to the Domestic Animal Infectious Diseases Control Act (Ministry for Agriculture, Forestry and Fisheries)
- b) The University of Tokyo Rules concerning the Prevention and Outbreak of Domestic Animal Infectious Diseases (October 2011)
- c) The University of Tokyo Summary of Rules concerning the Prevention and Outbreak of Domestic Animal Infectious Diseases (October 2011)
- d) University forms
- e) Accounting ledger examples
- f) Animal Quarantine Service <http://www.maff.go.jp/aqs/english/laws.html> (E)
Interpretation of the Domestic Animal Infectious Diseases Control Law, Interpretation of the Rabies Prevention Law, Interpretation of Law concerning the Prevention of Infections and Medical Care for Patients of Infections (items concerning animals), Inspection of Aquatic Animals

Others (laws and regulations, rules, guidelines, etc.)

- a) Plant Protection Station <http://www.maff.go.jp/pps/> (J)
Plant Quarantine, Plant Quarantine Law, Rules for Implementation of the Plant Protection Law

Notices

- a) Pathogen Control System involved in Implementation of the Revisions of the Law concerning the Prevention of Infections and Medical Care for Patients of Infections (MEXT Directive of the Higher Education Bureau Chief and the Directive of the Research Promotion Bureau Chief: June 2007)
- b) Implementation of the Revisions of the Law concerning the Prevention of Infections and Medical Care for Patients of Infections (Notice of Effectuation) (Tuberculosis and Infectious Diseases Control Division, Health Service Bureau; Ministry of Health, Labour and Welfare Director's Bulletin, June 2007)
- c) Cautions concerning Implementation the Revisions of the Law concerning the Prevention of Infections and Medical Care for Patients of Infections (Tuberculosis and Infectious Diseases Control Division, Health Service Bureau; Ministry of Health, Labour and Welfare Director's Bulletin; June 2007)

E. Experiments involving Humans and Reproduced Clones

<http://sres.adm.u-tokyo.ac.jp/cloneHOME.html>

(1) The University of Tokyo Rules concerning the Use of Human Embryonic Stem Cells (partially revised 28 September 2009)

The University of Tokyo Rules concerning the Implementation of Research Ethics (formerly “Implementation of Rules concerning Human Reproduction and Cloning at The University of Tokyo)

The University of Tokyo Guidelines for Requests pertaining to Experiments on Human Reproductive Genes and Clones

Tentative Measures for Reproduction of Human Embryonic Stem Cells (Notice from MEXT)]

Production of Human Induced Pluripotent Stem Cells and Use in Experiments

The University of Tokyo Rules concerning the Production of Animal-Human Chimeric Embryos

Procedures

- a) Summary of Procedures of Request Forms for Human Embryonic Stem Cells
- b) Guideline revisions
- c) Research Scientists Using Human Embryonic Stem cells, Induced Pluripotent Stem (iPS) Cells, and Other Types of Stem Cells for the First Time
- d) Summary of the Human Embryonic Stem Cells Use Plan Review (revised)
- e) MEXT forms
- f) University forms

Guidelines, Rules, Laws and Regulations

- h) Guidelines on the Utilization of Human Embryonic Stem Cells
- i) Procedures for Use Plan Experiments of Human Embryonic Stem Cells
- j) Laws concerning the Controls on Clone Technology regarding Humans
- k) Rules Pertaining to Implementation of the Laws concerning the Controls on Clone Technology regarding Humans
- l) Guidelines for Handling Select Embryos