University of Geneva

Integrity in scientific research

Guidelines on integrity in research and procedures for handling alleged violations

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PREAMBLE

Science drives progress and achievement for the well-being of humankind, society and the environment. Scientific integrity in research is a necessary precondition, as it underpins the credibility of science and justifies the call by researchers for freedom of research.

The University of Geneva must be accountable for the scientific integrity of its researchers. This guarantee is required by law in exchange for academic autonomy[1]. Internally, the University of Geneva must offer its researchers a framework within which the integrity of science is maintained as far as possible. Together with 450 other universities, the University of Geneva has subscribed to the «Magna Charta Universitatum», signed in Bologna in 1988, thereby affirming adhesion to the fundamental principles of responsibility to society, independence from any external power, whether economic or ideological, as well as critical autonomy. The Charter calls upon the universities to ensure its members that these principles shall be implemented. The University of Geneva also adheres to the principles of the new "European Charter for Researchers and Code of Conduct for the Recruitment of Researchers" which, by specifying the roles, responsibilities and reciprocal prerogatives of researchers and employers or sponsors, commits the University even further towards its members.

These guidelines are therefore addressed to all persons actively engaged in research with whom our institution plans to share these values of ethics and integrity. In order to ensure the credibility of the vast majority of researchers who carry out their work in a selfless manner for the greater good of humanity, and to extend the frontiers of scientific knowledge, the University must define a framework where a suspicion of a violation of integrity may be investigated. Scientific fraud undermines confidence in science as a whole. Increasing competition in scientific research worldwide in addition to rising pressure on researchers to achieve results and to obtain funding have made it necessary for standards to be explicitly formulated regarding honesty in research so as to create procedures in handling reports of suspicion of misconduct. Provisions concerning funding for research by private entities or enterprises (third-party funding) must also be introduced. Since the national legal and judicial system is not fully able to ensure compliance with these standards, it is incumbent upon the world of science to provide these rules itself first.

[1] See article 3 of the University of Geneva Regulations regarding "Ethical Principles".

1. Scope and Objectives of Guidelines

These guidelines on scientific integrity shall apply to all research activities carried out within the framework of the University of Geneva (hereafter known as "the University") and to all researchers working for it[2].

The guidelines have 5 objectives:

- **I.** To guarantee integrity in scientific research. This is a precondition for the credibility of science and a justification for researchers' demands for scientific freedom.
- **II.** To promote quality research.
- **III.** To ensure uniformity of conditions for scientific research conducted at the University.
- **IV.** To sensitize researchers to the risks of conflicts of interest.
- **V.** To provide information concerning the procedure to be followed if a case of suspected infringement of scientific integrity is reported.

2. Rules of Conduct

The following rules of conduct are not exhaustive. These rules must be taken as an integral part of the education and instruction to be received by future researchers.

2.1 Planning Research

One or more head(s) of project must be designated for each research project.

Even if the results of the research projects are unpredictable, the researcher shall carefully plan the research, employing rigorous methodology. The research plan as well as all later amendments thereto shall be submitted in writing. The research plan shall be clear and intelligible to the members of the project team and to third parties who may wish to monitor progress made and/or research results.

The plan shall provide information about project heads and all persons involved in the research, its funding, sources of financing, and handling of raw data.

When the research project is financed by outside funding, detailed information shall be provided explaining to what extent a potential sponsor might have an influence on the research (planning, realization, assessment, and publication). All publications ensuing from the research shall clearly indicate the origin of the funding.

[2] These guidelines are based on those of the Swiss Academy for Medical Sciences (SAMS) on scientific integrity in medical and biomedical research and procedures for handling allegations of scientific fraud (June 2002)

If during the planning stage it seems likely that the project results will be patented, all relevant matters must be settled during the planning phase pursuant to an agreement signed between the University and its partner that shall be appended to the research plan. Any delay in publication will only be accepted if patent deposit requirements are not infringed. If the possibility of patenting the results only develops once the project is underway, the researchers and their partner shall strive to conclude an appropriate agreement rapidly and shall declare their intention to accept to postpone publication of their results so that a patent request may be filed. Transfer technology services are available to researchers seeking information on how to develop discoveries resulting from their research activities.

2.2 Transparency concerning conflicts of interest

Both the research project head and his/her collaborators shall disclose all interests, notably financial interests and of intellectual propriety, linked to their research as well any financial interests of members of their families.

All researchers participating in a research project shall inform the Dean[3], for transmission to the Rectorate, of any financial interests that are liable to interfere with their research activities. Namely, the Rectorate may object to the research head and his/her collaborators being owners, associates, members of a board of administration, or major shareholders of an enterprise or factory that manufactures or distributes the product being researched, or provides advice in this domain. All information from researchers concerning the cases outlined above shall be submitted in writing to the Rectorate. Furthermore, the Rectorate shall be informed of any consultancy work in relation to any product concerned by the research.

2.3 Research contracts

All research contracts shall stipulate:

- The type of research under contract;
- The connection between services provided and remuneration in the execution and funding of research;
- Remuneration for the research project head, which shall be reasonable in relation to the services provided;
- The obligation to publish the results of the research or to make them accessible to the public.

All research contracts involving private funding (from an individual or a corporate body) shall be submitted for approval to a senior authority (department or faculty head) and to all the collaborators involved, and countersigned by a senior authority of the institution, e.g. the vice-rector in charge of research.

[3] The term “Dean” has been selected for ease of use and refers to the subdivision heads of the University.

2.4 Data access

Data on research progress and results of the original experiments (raw data) should be clearly and precisely documented in accordance with regulations prevailing for each discipline so as to avert as far as possible any damage or loss or any targeted manipulation. This holds true for electronic data (data safeguarding on CD-ROM, etc.) as well as for original documentation of research projects mentioned in the research protocol.

All authorized persons shall have easy access to this raw data whereas non-authorized persons shall be denied access. Participants in each research project shall be clearly defined beforehand. Before each research project commences a decision shall be reached as to who will retain access to the data base even after the researchers' collaboration in the project or research institute has ended, and for what purpose researchers shall be entitled to use this data

Furthermore, these documents shall be worded so as to establish a clear distinction between the raw data and how the data are interpreted. The project head shall ensure that the necessary security measures have been adopted to safeguard the raw data produced during the research for at least 10 years following the completion of the study. In the event that the head of project leaves the institution s/he shall ensure that appropriate conservation measures are adopted.

2.5 Sharing of information

Project participants shall ensure confidentiality of information. Notwithstanding, participants in a research project shall be responsible for sharing all information that is potentially important for the project's advancement with all members of the research team.

During the course of the research project, it shall be determined what information may be disclosed, in conformity with the research plan, to persons extraneous to the project in accordance with agreements within the research group and with sponsors.

Once the project has been completed and the results published, the necessary information shall be made available to third parties who wish to repeat and verify the experiments properly. As far as possible, material acquired during the experiments and which is necessary to reproduce them shall also be given insofar as this material is not available on the market and is still in stock.

2.6 Incidents occurring while the research project is underway

Unusual incidents shall be reported while the research project is underway so that any discrepancies with the original research plan or any extraordinary events liable to produce errors may be detected, particularly those concerning data interpretation. As soon as these incidents are recorded or as rapidly as possible thereafter, the data base shall be evaluated either comprehensively or by sampling. This will facilitate the

early detection of possible errors when the experiment is first being set up or implemented, thus enabling prompt corrective measures to be taken.

2.7 Conflicts of interest and the duty of discretion regarding expertise

In the event that an individual is commissioned by, *inter alia*, a journal**,** editor, research promoter or sponsor, or appeal committees etc. to provide expert advice or a peer review on research work or projected research undertaken by a third party whose work is in competition with his/her own work, such individual shall turn down the mandate or indicate the existence of a conflict of interest to allow the requesting party, if necessary, to call upon another expert.

The expert shall handle information contained in the work at issue in the strictest confidentiality. No use shall be made of the information without the prior authorization of its authors.

2.8 Interpretation of research findings

The interpretation of research results in publications or presentations must not be influenced by any conflict of interests. The project head must take particular care in ensuring that:

- the desired and undesired effects of a product or procedure are discussed critically and factually,
- the profit/cost ratio linked to practical applications of the research are presented as objectively as possible when there is a certain public scope,
- a well-balanced and objective comparison is made with other results.

2.9 Priority of quality over quantity

The quality of research must take precedence over quantity. In principle, greater weight shall be given to the originality of the problem, the breadth of the conclusions, the reliability of the data base and the certainty of results, than to the rapidity of dissemination of results or to the number of publications.

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2.10 Scientific publications

The standard practice must be to publish research findings.

The author of a scientific publication is the person who through his/her personal labor has made a meaningful scientific contribution to the research during the planning, implementation, interpretation or monitoring stages. Neither senior executive status at the research institute, nor the provision of financial or organizational backing authorizes authorship. The position of honorary author does not exist.

The project head is responsible for the accuracy of the publication's content in its entirety. The other authors are accountable for the truthfulness of the statements that their position within the research project has enabled them to verify. The authors shall refrain from duplicating the knowledge in a variety of publications with the exclusive motivation of increasing the quantity of publications, and from taking other similar steps.

Before submitting a manuscript for publication the project head must elicit agreement from all the authors. Similarly, no-one participating in a research project may submit a manuscript for publication without the agreement of the project head.

Laboratory protocols as well as any publications that might derive from them must be sufficiently documented so that other researchers are able to reproduce the same results.

3. Violation of scientific integrity in research

3.1 Principles

In the event that the principles of scientific integrity are violated, thus jeopardizing the acquisition and dissemination of scientific knowledge and infringing upon the personal interests of individuals worthy of protection, procedures shall be initiated to determine whether scientific fraud has taken place.

The term scientific fraud or misconduct applies when the violation has been committed intentionally. If a person incites others, in particular junior staff, to commit scientific fraud or misconduct, then responsibility for the misconduct in question shall also be borne by the person who encouraged it

When such misconduct constitutes a violation of the Swiss Criminal Code, legal action may be initiated.

3.2 Violations of the principle of scientific integrity

The following constitute violations:

3.2.1. With regard to obtaining scientific knowledge

- Fabrication of research results.
- Intentional falsification of data, an intentionally misleading presentation and processing of research findings, withholding of data from the record without specifying the reason.
- Removal of recorded data before the allotted timeframe for data preservation has expired or after learning of a third party's wish to consult the data.
- Hiding of data.
- Denying authorized third parties access to the data base.

- Hiding conflicts of interest, financial arrangements or collaboration procedures that, if known, might influence the evaluation of scientific findings.
- Accepting collaboration agreements that do not safeguard the researcher's independence of judgment, restricting his/her liberty to publish (in particular negative results) or which impose an inspection clause on the researcher's publications which goes beyond what would be reasonable and useful for the purpose of preserving intellectual property rights.
- Accepting funding sources or mandates that the research institute would have previously designated as ethically incompatible with the researcher's role in the relevant institution.
- Non-objective presentation of diverging opinions.

3.2.2 During the research process

- Copying the raw and other data without the explicit agreement of the authorized project head (data piracy).
- Sabotaging other researchers' work, whether or not they are part of the same research group, namely by withholding and rendering unusable in a targeted manner research material, equipment, data bases and other recorded information.
- Violating the duty of discretion.

3.2.3 During publication

- Publishing under one's own name another person's findings and discoveries (plagiarism).
- Obtaining the status of co-author for a publication without having made a meaningful contribution to it.
- Deliberate omission of the names of collaborators to the project who have made meaningful contributions; voluntary mention of a person as co-author who has not contributed to the project.
- Deliberate omission of meaningful contributions by other authors on the same subject.
- Intentionally erroneous quotes taken from real or alleged work by third parties.
- Incorrect information concerning the stage of publication of one's own work (for example, stating "manuscript submitted", whereas no manuscript has been sent; or "publication pending", whereas the manuscript has not yet been accepted).

3.2.4 Third-party expertise (i.e. peer review of articles submitted for publication)

- Deliberately remaining silent regarding conflicts of interest.
- Breach of confidentiality and the duty of discretion.
- Erroneous criticism, knowingly or through negligence, of projects, programs or manuscripts.
- Unfounded judgments motivated by self-interest or a desire to obtain advantages for third parties.

4. Procedures for responding to an allegation of violation

Any person who has reason to believe that an act of violation has occurred may initiate a procedure for violation of scientific integrity. Such allegations shall be communicated to the Rectorate and then forwarded to the Dean so that the procedure described below may begin.

The Dean is responsible of the protection of the denouncer.

4.1 The delegate for scientific integrity

Each Faculty Council shall appoint a full professor to act as delegate for scientific integrity for that Faculty with a renewable term of office of 2 years. The delegate shall have a sound scientific background.

The delegate shall be available to provide advice regarding violation of scientific integrity to all those who request it.

Allegations of scientific misconduct shall be communicated expeditiously to the delegate for scientific integrity through the good offices of the Dean. The accused party and the denouncer shall appear before the delegate following which the delegate shall have 30 days to complete the inquiry. At this point the delegate may arrive at one of three conclusions:

1. If it is determined that the breach of public interest is a minor one the case may be resolved amicably, through the consent of the accused party and that of the denouncer whose personal interests have been infringed. An informative report shall be transmitted to the Dean and the Rectorate.
2. If, on the basis on a preliminary inquiry, the delegate for scientific integrity deems there are sufficient grounds to conduct an investigation, s/he shall appoint a fact-finding commission and inform the Dean.
3. If the delegate deems that the allegations are clearly unfounded s/he shall propose to the Dean that the complaint be dismissed.

If the delegate is challenged by his involvement or conflict of interest in the case, a substitute is designed by the Faculty assembly.

4.2 The fact-finding commission

The fact-finding commission is an *ad hoc* committee appointed by the delegate for scientific integrity. Its membership shall in principle change for each case and it shall be composed of at least three members. A chairperson shall be appointed by the delegate from among one of the committee members.

The fact-finding commission shall complete its investigation within 60 days and may consult an independent scientific expert. It shall allow the accused party to comment

on the accusations leveled against him/her, to provide evidence and to request that further investigations be conducted.

The committee shall indicate to the accused party and to the denouncer whose personal interests have been affected the measures to be taken to expand the scope of the inquiry and the witnesses the committee intends to call before it.

The committee shall interview the denouncer.

Before the interviews, the accused, the witnesses and where applicable the denouncer shall be informed that their declarations will be recorded in the minutes and appended to the dossier.

The accused shall be entitled to be present during testimony by witnesses, subject to the provisions under article 42 paragraph 5 of Geneva's Administrative Procedural Code.

Once the inquiry has come to its conclusion the committee shall address a detailed report to the Rectorate, Dean, delegate for scientific integrity, the accused, and the denouncer whose interests in the view of the committee have been infringed, and recommend the course of action to follow. The committee report shall include all written evidence submitted to it as well as the original minutes of the hearings.

4.3 The Dean

4.3.1 Following the inquiry conducted by the delegate to the commission on scientific integrity

The Dean shall examine the proposal made by the delegate to scientific integrity to dismiss the allegations of violation which are deemed unfounded.

If the Dean in turn is of the view that the allegations are unfounded, s/he shall address a detailed and documented report to the Rectorate recommending the case be dropped.

If the Dean finds that an investigation is warranted s/he shall refer the matter to the delegate for scientific integrity, to set up a fact-finding commission on his/her behalf. The Dean shall be notified of the referral of the case to the fact-finding commission and of its composition and shall then have 5 days to challenge its composition.

In case of the involvement of the Dean in the case or if s/he has a conflict of interest, a substitute is designed by the Rectorate.

4.3.2 Following investigation by the fact-finding commission

The report by the fact-finding commission, together with the minutes of hearings, written evidence and all other documents in the dossier shall be submitted to the Dean.

The Dean shall review the dossier and convene a hearing with the accused party as well as, where applicable, the party whose interests have been infringed. The Dean shall not conduct an investigation but shall decide on the merits of the dossier remitted by the fact-finding commission as well as on the basis of the testimony of the accused and, where applicable, of the denouncer. When necessary, s/he may request that further investigations be undertaken.

If the Dean holds that the allegations have, in part or in whole, been substantiated s/he shall address a report to the Rectorate indicating who has committed a breach of scientific integrity and a description of the violation. The Dean shall adopt all appropriate measures within his/her remit, namely measures which should reduce the risk of similar cases of misconduct from occurring in the future.

If the Dean finds that the allegations are unfounded s/he shall propose that the Rectorate dismiss the complaint.

In all cases the Dean shall transmit his/her report to the accused and to the denouncer whose personal interests have been violated. They may respond in writing within 10 days following receipt of the report.

During the procedure, the Dean must take the necessary actions to protect the interests of all collaborators.

4.4 The Rectorate

Once the Rectorate has received the committee report, it shall have a 30-day period within which to take the necessary measures under its authority (dismissal of the case or referral to an investigation Commission made up of three Deans).

4.5 Confidentiality

In principle the procedures must remain confidential. The University, in general through the Rectorate, shall determine the form and the content of a possible publication of the facts and findings of the procedures.

The denouncer's identity shall remain confidential. The Faculty must ensure that s/he is protected against reprisals or detrimental action in particular when s/he is in a situation of dependency in relation to the accused party.

4.6 The right to challenge

At the beginning of each stage of the procedures (the delegate for scientific integrity, the fact-finding commission, the Rectorate) the accused party and the denouncer shall be informed of the names of the person or persons conducting the inquiry or investigation. They shall have 5 days thereafter to make a written request challenging those persons whose impartiality might be suspect.

Any person who could be considered potentially biased due to family ties or conflicts of interest (close friendships, financial or organizational dependence) in relation to the accused or the denouncer shall allow him/herself to be challenged. The same holds true regarding any other circumstance likely to cast doubt on the impartiality of a member of one of the investigating bodies.

In the event of challenging, a deputy shall be appointed by the competent body that designated the challenged person.

4.7 Annual Report

The Dean shall draw up a yearly report on complaints handled in his/her Faculty addressed to the Rectorate.

5. Recommendations for research sponsors

Collaboration between University researchers and public and private institutions is, in many fields, an important prerequisite for innovation in research.

Such collaboration, as well as encouragement for research provided by non-industrial sponsors, may breed conflicts of interests which promote a poor image to the public-at-large. The prospects of financial gain or achieving fame thanks to a study or its findings may incite certain researchers to behave unethically in the design, implementation and analysis stages of a study.

So as to avoid all misunderstanding, research sponsors shall inform researchers of their requirements regarding scientific integrity and of the consequences of violation of integrity in a project that they sponsor.

Sponsors shall indicate the confidential nature of the documents submitted to them, researchers are duty-bound to respect such confidentiality.

All financial benefits provided by the sponsors or donors for research projects must be paid to the University. The research head shall manage the access to financial accounts.

6. Final provisions

These guidelines were adopted by the Rectorate at its meeting on 10 May 2005 and entered into force on 10 May 2005.

The modifications requested by the Ethics Commission of the University Council were integrated into the document. The amended version of the guidelines were approved by the Rectorate at its meeting on 22 May 2006.