This code – developed through a series of workshops involving the ESF (European Science Foundation) and ALLEA (All European Academies) – addresses the proper conduct and principled practice of systematic research in the natural and social sciences and the humanities. It is a canon for self-regulation, not a body of law. It is not intended to replace existing national or academic guidelines, but to represent Europe-wide agreement on a set of principles and priorities for the research community.

The Code

Researchers, public and private research organisations, universities and funding organisations must observe and promote the principles of integrity in scientific and scholarly research. These principles include:

- honesty in communication;
- reliability in performing research;
- clarity;
- impartiality and independence;
- openness and accessibility;
- duty of care;
- fairness in providing references and giving credit;
- and responsibility for the scientists and researchers of the future.

Universities, institutes and all others who employ researchers, as well as agencies and organisations funding their scientific work, have a duty to ensure a prevailing culture of research integrity. This involves clear policies and procedures, training and mentoring of researchers, and robust management methods that ensure awareness and application of high standards as well as early identification and, wherever possible, prevention of any transgression.

Fabrication, falsification and the deliberate omission of unwelcome data are all serious violations of the ethos of research. Plagiarism is a violation of the rules of responsible conduct vis-à-vis other researchers and, indirectly, harmful for science as well. Institutions that fail to deal properly with such wrongdoing are also guilty. Credible allegations should always be investigated. Minor misdemeanours should always be reprimanded and corrected.

Investigation of allegations should be consistent with national law and natural justice. It should be fair, and speedy, and lead to proper outcomes and sanctions. Confidentiality should be observed where possible, and proportionate action taken where necessary. Investigations should be carried through to a conclusion, even when the alleged defaulter has left the institution.

Partners (both individual and institutional) in inter-national collaborations should agree beforehand to cooperate to investigate suspected deviation from research integrity, while respecting the laws and sovereignty of the states of participants. In a world of increasing transnational, cross-sectional and inter-disciplinary science, the work of OECD’s Global Science Forum on Best Practices for Ensuring Scientific Integrity and Preventing Misconduct can provide useful guidance in this respect.

The principles of research integrity

These require honesty in presenting goals and intentions, in reporting methods and procedures and in conveying interpretations. Research must be reliable and its communication fair and full. Objectivity requires facts capable of proof, and transparency in the handling of data. Research should be independent and impartial and communication with other researchers and with the public should be open and honest. All researchers have a duty of care for the humans, animals, the environment or the objects that they study. They must show fairness in providing references and giving credit for the work of others and must show responsibility for future generations in their supervision of young scientists and scholars.

Misconduct

Research misconduct is harmful for knowledge. It could mislead other researchers, it may threaten individuals or the society – for instance if it becomes the basis for unsafe drugs or unwise legislation – and, by subverting the public’s trust, it could lead to a disregard for or undesirable restrictions being imposed on research.

Research misconduct can appear in many guises:
- Fabrication involves making up results and recording them as if they were real;
- Falsification involves manipulating research processes or data, such as altering records to cover up misconduct and reprisals on whistleblowers;
- Plagiarism is the appropriation of other people’s material without giving proper credit;
- Other forms of misconduct include failure to meet clear ethical and legal requirements such as misrepresentation of interests, breach of confidentiality, lack of informed consent and abuse of research subjects or materials. Misconduct also includes improper dealing with complaints, such as attempts to cover up misconduct and reprisals on whistleblowers;
- Minor misdemeanours may not lead to formal investigations, but are just as damaging given their probable frequency, and should be corrected by teachers and mentors.

The response must be proportionate to the seriousness of the misconduct: as a rule it must be demonstrated that the misconduct was committed intentionally, knowingly or recklessly. Proof must be based on the preponderance of evidence. Research misconduct should not include honest errors or differences of opinion. Misbehaviour such as intimidation of students, misuse of funds and other behaviour that is already subject to universal legal and social penalties is not acceptable.

The liberty of researchers to work with and talk to others should be guaranteed. The primary responsibility for handling research misconduct is in the hands of those who employ the researchers. Such institutions should have a standing or ad hoc committee(s) to deal with allegations of misconduct. Academies of Sciences and other bodies should adopt a code of ethics for handling alleged cases of misconduct, and expect members to abide by it. Researchers involved in international collaboration should agree to standards of research integrity, and maintain confidentiality. If situations warrant, adopt a formal collaboration protocol either ab initio or by using one drafted by the OECD Global Science Forum.

Good research practices

There are other failures to adhere to good practices – incorrect procedures, faulty data management, etc. – that may affect the public’s trust in science. These should be taken seriously by the research community as well. Accordingly, data practices should preserve original data and make it accessible to colleagues. Deviations from research procedures include insufficient care for human subjects, animals or cultural objects; violation of protocols; failure to obtain informed consent; breach of confidentiality, etc. It is unacceptable to claim or grant undeserved authorship or deny deserved authorship. Or, if publication-related lapses could include repeated publication, salami-slicing or insufficient acknowledgement of contributors or sponsors.

Reviewers and editors too should maintain their independence, declare any conflicts of interest, and be wary of publishing biased and untruthful statements. Unjustified claims of authorship and ghost authorship are forms of falsification. An editor or reviewer who pursues ideas commits plagiarism. It is ethically unacceptable to cause pain or stress to those who take part in research, or to expose them to hazards without informed consent.

While principles of integrity, and the violation thereof, have a universal character, some rules for good practice may be subject to cultural differences, and should be developed out of a set of national or regional guidelines. These cannot easily be incorporated into a universal code of conduct. National guidelines for good research practice should, however, consider the following:

1. Data: All primary and secondary data should be stored in secure and auditable form, documented and archived for a substantial period. It should be placed at the disposal of colleagues. The freedom of researchers to work with and talk to others should be protected.

2. Procedures: All research should be designed and conducted in ways that avoid negligence, haste, carelessness and inattention. Researchers should try to fulfill the promises made when they applied for funding. They should minimize the risk on the environment, and use resources efficiently. Clients or sponsors should be made aware of the legal and ethical obligations of the researcher, and of the importance of publication. Where legitimately required, researchers should respect the confidentiality of data. Researchers should properly account for grants or funding received.

3. Responsibility: All research subjects – human, animal or non-living – should be handled with respect and care. The health, safety and rights of a community or collaborators should not be compromised. Researchers should be sensitive to their research subjects. Protocols that govern research into human subjects must not be violated. Animals should be used in research only after alternative approaches have proved inadequate. The expected benefits of such research must outweigh the harm or distress inflicted on an animal.

4. Publication: Research should be published in an open, transparent and accurate manner, at the earliest possible time, unless intellectual property considerations justify delay. All authors, unless otherwise specified, should be fully responsible for the content of publication. Guest authorship and ghost authorship are not acceptable. The criteria for establishing the sequence of authors should be agreed by all, ideally at the start of the project. Contributions by collaborators and assistants should be acknowledged, with their permission. All authors should declare any conflict of interest. Intellectual contributions of others should be acknowledged and correctly cited. Honesty and accuracy must be maintained in communication with the public and the popular media. Financial and other support for research should be acknowledged.

5. Editorial responsibility: An editor or reviewer with a potential conflict of interest should withdraw from involvement with a given publication or disclose the conflict to the readership. Reviewers should provide accurate, objective, substantiated and justifiable assessments, and maintain confidentiality. Reviewers should not, without permission, make use of material in submitted manuscripts. Reviewers who consider applications for funding, or applications by individuals for appointment or promotion or other recognition, should observe the same guidelines.

The European Code of Conduct for Research Integrity can provide useful guidance in this respect.