

Research Integrity Code CIMNE, 2024

Preamble

As a public research centre, CIMNE is committed to follow proper scientific practices, produce knowledge guided by ethical standards and promote exemplary behaviour of the research personnel. This Research Integrity Code aims at providing guidelines and best practices to comply with this commitment.

Background

This code is based on different international framework documents on research integrity, namely (listed in chronological order):

- EC: The European Charter for Researchers. The Code of Conduct for the Recruitment of Researchers (2005).
- OECD: Best Practices for Ensuring Scientific Integrity and Preventing Misconduct (2007).
- Singapore Statement on Research Integrity. Second World Conference on Research Integrity (2010).
- ALLEA: The European Code of Conduct for Research Integrity. (2011, revised edition in 2017).
- The European Commission's Framework Programme for Research. Horizon 2020 (2013)
- Code of Research Integrity of the Universitat Politècnica de Catalunya (2022)

Particularly, the last corresponds to our stakeholder, UPC, and therefore is followed very closely in the remainder.

Title I. General provisions

Article 1. Aims and scope

This code aims at providing to CIMNE researchers guidance to ensure ethics, integrity and quality of research processes and procedures. It is intended to serve as a collective instrument of self-regulation that helps to create a proper framework for guaranteeing research integrity. Specifically, the aims of this code are:

- To establish principles and standards of integrity governing CIMNE research activity.
- To promote the adoption of good scientific practices throughout CIMNE.
- To facilitate the provision of advice on research integrity, analysis and prevention of conflicts related to integrity, and the resolution of any problems or conflicts that may arise in relation to this issue.
- To support the organisation in the delivery of information and training activities on research integrity.

This code applies to the entire CIMNE community with respect to all research and research-related activities, whether carried out wholly or partially at CIMNE. Namely, it refers to activities of researchers, but also trainees, technical support staff and administrative staff in charge of research management.

Staff external to CIMNE, from other research institutions and companies, carrying out research activities at CIMNE on a permanent or temporary basis are expected to be familiar with and respect this code, without prejudice to their compliance with the regulations of their company or institution. Conversely, CIMNE staff carrying out research activities on a permanent or temporary basis at other institutions or companies must comply with this code and the regulations that apply in the place where they perform the activity in question.

Article 2. General principles

This code focuses on the principles that should underpin research integrity and serve as tools for assessing the integrity of scientific practice. It is organised around the following six principles, which characterise good scientific practice. Each principle is complemented with a description of the impact it may have on research practice. These principles are in relation with the standards set out in Title II.

Principles correspond to basic qualities of good researchers, that guide them towards right decisions in all kinds of circumstances. By their nature, principles are less subject to change, and are adopted individually and consciously. In contrast, standards, which are external to individuals, must be adapted or expanded as research practices change.

- **Honesty:** Researchers must report the research process accurately, consider alternative opinions and counterarguments, be open-minded as regards uncertainty, refrain from making unfounded claims, refrain from fabricating or falsifying data or sources, refrain from presenting results in a way that is more favourable or unfavourable than merited, and respect the authorship of any contribution, including fair citation of members in the case of work produced by a team.
- **Reliability:** Researchers must use scientifically rigorous methods and exercise the greatest possible care in designing, directing, executing, reporting and disseminating research. This also means that researchers must not promote pseudo-scientific, pseudo-technological or fraudulent practices that exploit the social prestige of science and technology and seek to manipulate or mislead using unreliable methods.
- **Transparency:** Researchers must ensure that it is clear what data their research was based on; specify how the data was obtained, what the results are, and how they were generated; and indicate the role played by external stakeholders. This means explaining the methodology, processes and algorithms used to conduct the research in order to ensure that the results can be reproduced by other researchers. If parts of the research or data are not made public, researchers should explain why this is the case. Researchers must make clear how the research was conducted and what the various stages of the research process were. The line of reasoning must be apparent, and it must be possible to verify the steps in the research process.
- **Independence:** The following must not be influenced in any way by persons or institutions motivated by non-scientific considerations: choice of method, evaluation of data, the value attributed to alternative opinions, and assessment of research or research proposals. In this respect, independence also includes impartiality. Independence is required in the design, conduct and publication of research, although not necessarily in the choice of a research topic or research question. In any event, a rationale for such choices must be provided.
- **Responsibility:** Researchers must take into consideration the legitimate interests of all persons and living beings used as test subjects and those of other stakeholders, funding bodies and the environment, and everyone involved in the research process must be treated with respect. Responsibility also means conducting research that is scientifically, socially and environmentally relevant and that meets sustainability criteria. In view of the social mission of science and technology, this principle requires us to conduct these activities in an efficient manner that takes into account their social cost rather than just economic considerations. Responsibility must be practised at every stage, from idea to publication of research, and in relation to any resulting technologies and applications. In this respect, those responsible must be accountable to the appropriate body for the research project they have carried out. The rights of citizens must also be taken into account at all stages of a project. Consideration should be given to who will be the beneficiaries or users of the research, and communication mechanisms should be established from the outset.
- **FAIR Principles:** These principles are met by research data that is Findable, Accessible, Interoperable and Reusable (<https://www.go-fair.org/fair-principles/>). The FAIR principles ensure that research results are accessible and verifiable by third parties.

Title II. Standards for good research practice

The general principles stated in Article 1 are brought in by implementing specific standards. Some of these standards are collected in the following guidelines.

Researchers must promote an open and inclusive culture in all stages of research, in accordance with the principles of open science. They must ensure that all research staff under their supervision comply with integrity standards. If they notice any research-related non-compliance, they must immediately bring it to the attention of the competent body.

Article 3. Standards associated with the different phases of a research project

Conception phase. Researchers must conceive projects considering the following aspects:

- **relevance** (from a scientific, technological, social or environmental standpoint)
- **pertinence** (according to the interests and thematic priorities established by CIMNE and its stake holders)
- **state of the art** (accounting for the latest scientific advances and knowledge in the field)
- **focus** (the project must aim to respond to specific research questions or necessities)
- **reliability and credibility** (of methods devised, that has to be clearly substantiated)
- **external participation** (if the project is participated by third party researchers, clear written agreements on research integrity must be established, avoiding possible conflicts of interest)
- **data management** (data collected has to be treated according to the FAIR principles, ensuring it can be verified and reused)
- **project monitoring** (when appropriate, CIMNE is committed to guarantee the projects comply with principles and standards, and to ensure all the permissions required to carry out the research are granted)

Execution phase. During the execution of the project, researchers must proceed with rigor and precision, using only scientific criteria to select the methodologies, analyse data, and disseminate the results.

- Results obtained must be considered on equal terms, whether they support or contradict the theses of the research, and they cannot be invented, forged, falsified, or misrepresented.
- Existing data or ideas used in the research must be taken from truthful sources, and properly credited.
- Data and materials generated must be carefully managed, kept under secure protection, and processed according to the FAIR principles for the legally prescribed period, in a way that allows third parties to verify the results obtained. The life cycle of data must be transparent with regard to its

collection, processing, generation of new data, destination and any future use after the research project has ended.

- Researchers must take into account possible risks to staff and environment, and if pertinent, to living beings involved. Legal regulations that apply in these matters and relevant codes of conduct must be observed at all times.
- Research staff is expected to have state-of-the-art expertise in their field and area of specialisation.
- Research staff must not delay or hinder the work of any other researcher.
- Research sources, material and equipment must not be misused.

Dissemination of results. As a public institution, CIMNE is committed to disseminate knowledge resulting of research activities. This requires, specifically, authoring **publications** in the reference journals, and monographies. Researchers must comply with the following aspects:

- **Proper recognition of contributions to the research.** All persons who have contributed to the research and to the collection and processing of data must be given fair recognition. Persons who have made a contribution that is significant but not sufficient to be listed as co-authors of papers or publications should be mentioned in the acknowledgements.
- **Authorship** must be fairly attributed and ordered, in accordance with the standards that apply in the discipline(s) concerned. CIMNE affiliation must be included. All researchers listed as authors must have made a genuine intellectual contribution to at least one of the following: the research design, acquisition or analysis of data, or interpretation and communication of findings. All co-authors must have approved the final version, and are fully responsible for the content of final research results unless otherwise stated.
- **Credit to previous works.** If other people's ideas, procedures, results or text are used, sources must be accurately cited to avoid plagiarism. Unjustified or honorific references should be avoided. Unnecessary reuse of previously published texts authored or co-authored by research staff should be avoided. Authors must be transparent about reuse by citing the original publication. Needless references that make the bibliography unnecessarily long should be avoided.
- **Describing research methodology.** Research staff must be transparent about the method and working procedure they have followed. Research protocols, records or reports should be included where relevant. The line of reasoning must be apparent, and it must be possible to verify the steps in the research process. This typically means that the research must be described in enough detail to allow for the replication of data collection and analysis. This means making drafts or earlier versions of all measurements and analyses performed available to the scientific community. Researchers must be very clear about uncertainties and contraindications and should not draw unsubstantiated conclusions. Significant alternatives that may be relevant for interpreting the research data and results must be made explicit.
- **Valorisation of research.** The moral rights of all authors or inventors, as the case may be, who have participated in developing the research results must be respected and taken into consideration, in accordance with the provisions of applicable intellectual and/or industrial property legislation in force. The authorship of the person who had the original idea must also be acknowledged.

- **Selection of the journals and conferences.** Dissemination of research in journals and conferences with rigorous evaluation processes and editorial committees with recognised expertise in the relevant field should be encouraged. When choosing the means of dissemination, priority should be given to societal impact rather than personal recognition. Unnecessary splitting of one publication into several must be avoided.

Assessment and peer review. CIMNE research staff is expected to generously serve the community by reviewing manuscripts for reference journals and publishers, and to assist evaluation agencies in the assessment of projects submitted to research open calls. This community service is to be provided only to journals and institutions applying integrity standards. The assessment and peer review is to be carried out with **rigor, objectivity**, and respecting the **confidentiality** of the process. Peer review system must not be used to generate additional citations without any justification. Assessment is to be rejected or withdrawn if the referee has potential conflicts of interest, lacks necessary independence, or if the research is not in their area of expertise.

Article 4. Obligations of the institution

CIMNE must provide a working environment that promotes and safeguards good, responsible, and respectful research practice. It must ensure that research staff can work in a safe, inclusive and open environment. It must endeavour to ensure compliance and set up the appropriate mechanisms to achieve it. In particular, the Research Integrity and Ethics Panel is responsible for advising on and evaluating ethical issues, and is responsible to respond to queries concerning the interpretation of this Research Integrity Code.

CIMNE must provide **training and supervision** to the research and support staff (including research directors and managers), in order to raise awareness of research integrity. CIMNE must guarantee that individuals in charge of the supervision of trainee research staff and students are appropriately qualified, and have the time and resources required to perform this role. It must also ensure transparent and fair procedures for appointments, promotions and remuneration.

CIMNE must promote a **Research Culture** incorporating the standards of Article 3, and ensuring that every research activity complies with all relevant legal regulations, codes of conduct, instructions and relevant protocols that apply to the institution. Appropriate mechanisms must be set up to identify, avoid and correct non-compliance with standards.

CIMNE must provide an infrastructure to facilitate **Data Management**. All data, software codes, protocols and research material, whether published or unpublished, must be managed and stored securely for the appropriate period according to the discipline and the methodology used.

CIMNE must ensure scrupulous **public communication and dissemination** of research results.

CIMNE must facilitate the tasks of the Research Integrity and Ethics Panel to which it must provide adequate support. The Committee is in charge of performing ethical reviews if necessary, and of informing and advising research staff of any raised ethical issue or complaint.

Title III. Information management

Article 5. Informed consent and the right to information

If the research carried out involves the participation of persons external to CIMNE, attention must be paid to their autonomy and their rights to be respected. Accordingly, they must have given their prior express written consent to participate in the research after receiving adequate information. This information should include details of the nature, significance, implications and risks of the research. When the participation of minors and/or persons who are legally incapacitated is envisaged, the signature of their legal representatives must be requested. Persons participating in research may revoke their consent at any time.

Article 6. Protection of personal data and guarantees of confidentiality

If personal data is collected and processed, a basic risk analysis must be carried out to define the organisational and technical measures to be adopted. Steps must be taken to ensure that processing of personal data is lawful and complies with the conditions established by applicable legislation in force at all times. Data subjects must be informed of anything that affects the processing of their personal data at any stage of processing so that they know and understand what is being done with their data.

The personal data collected must be adequate, pertinent and limited to what is necessary in relation to the purposes for which it is processed. Personal data may not be further processed in a manner that is incompatible with the initial specified, explicit and legitimate purposes for which it was collected.

Personal data must be treated confidentially and with an appropriate level of security, including protection against unauthorised or unlawful processing and against accidental loss, destruction or damage. The duty of confidentiality will continue even after the related research has been completed.

FINAL PROVISIONS

One. Interpretation

The Research Integrity and Ethics Panel of CIMNE is responsible for interpreting this code.

Two. Revision

This code must be reviewed regularly and may be modified if necessary. Reviews of the Code will be carried out by the Research Integrity and Ethics Panel of CIMNE and submitted for approval to CIMNE's Executive Council.

Three. Entry into force

This code comes into force the day after its approval by the Executive Council of CIMNE.