CODE OF GOOD PRACTICE IN RESEARCH

INDEX

1. INTRODUCTION.

The Polytechnic University of Cartagena (hereinafter UPCT) assumes, among its essential functions, as set out, among others, in Article 2 of its Statutes, scientific research and the transfer of its results, as well as the training of researchers and support staff for both tasks, taking into account the specificities of each of the fields of knowledge. Decisions in the field of research and innovation must take account of the principles on which the European Union is founded, namely respect for human dignity, freedom, democracy, equality, the rule of law and respect for human rights, including the rights of minorities.

As a tool to advance towards the achievement of these objectives and as an ideal framework to which the different scientific practices should conform in order to ensure that the exercise of Scientific Research at the UPCT is rigorous, ethical, honest, respectful of the rules and responsible, this Code of Good Practice in Research is established.

This Code has been drawn up by the UPCT Research Ethics Committee (hereinafter CEI-UPCT) and after its approval by the Research Commission and subsequent ratification by the UPCT Governing Council, it will be freely adhered to by UPCT staff and associated organisations that carry out research activities of any nature.

2. OBJECTIVES AND SCOPE.

- Improve the quality of research in all fields.
- Establish mechanisms to ensure honesty, accountability, traceability and rigour in research.
- Acquire good scientific practices at the researcher training stage.
- Implement good practice in the planning, execution and presentation of all research work.
- Promote the transfer and protection of research results through the regulatory channels established by the institution.

The Code of Good Practice is a complementary instrument and not a substitute for existing legal standards.

3. GENERAL PRINCIPLES.

3.1. Honesty and Responsibility.

Researchers are responsible for their own practices and must also report and combat cases of fraud, falsification or plagiarism that come to their attention.

3.2. Rigour.

Research should be carried out according to well-designed working protocols that, if necessary, can be examined and understood by any researcher in the field.

3.3. Justice.

The principle of justice must be respected, in the sense that the benefits and drawbacks of research are distributed equitably among all groups and classes in society, taking into account and minimising inequalities that may occur in terms of gender, socio-economic status, culture and ethnic considerations.

3.4. Conflicts of interest.

In the event of a conflict of interest, a researcher should refrain from participating in a project, review process or other activity in the scientific field, following the rules established by the institution responsible for the activity.

For the purposes of this code, a conflict of interest shall be understood to exist when the researcher intervenes in decisions related to matters in which the interests of his/her public position and his/her own private interests, those of direct family members, or interests shared with third parties, converge at the same time. Specifically, a conflict of interest shall be understood to exist when the researcher has any of the circumstances for abstention set out in the legislation on the Legal Regime of the Public Sector.

4. ACTORS INVOLVED IN THE RESEARCH PROCESS.

Every person who joins the University by means of a contract or scholarship in order to acquire some kind of training will have a tutor assigned to them, in order to be integrated into the University.

in a Research and Development Group or a Research Institute, in accordance with the provisions of the University Statutes.

This person should promote a working environment in which members of the Group can train and develop their skills and in which knowledge sharing is encouraged.

The heads of the Groups and Principal Investigators of research projects and grants are obliged to comply with the requirements established in the corresponding call, as well as with the regulations, laws and provisions of the UPCT.

5. SUPERVISION OF TRAINEE RESEARCH STAFF.

Research mentoring is a key means for experienced researchers to share and pass on their knowledge and values to early career researchers.

5.1. Obligations of the director(s) or guardian(s).

a) Taking responsibility for the training process.
b) Providing the trainee researcher or support staff with the appropriate scientific environment and facilities.
c) To ensure that the research is carried out in accordance with the terms and conditions defined by the funding entity and known to UPCT.
d) Inform on safety and occupational risk prevention regulations, encouraging compliance with them.
e) Inculcate trainee researchers/support staff to follow the Code of Good Practice in Research and to be critical when evaluating their work.
f) Conduct their work in a way that sets an example for the trainee researcher to follow.
g) Recognise the work of the researcher in training and be rigorous and fair in the authorship of publications.

5.2. Obligations of trainee research staff.

a) To be fully integrated in the project assigned to their training.
b) Follow the advice and recommendations of the tutor and inform him/her of your possible initiatives and the progress of your results.

c) Acknowledge the contribution of your tutor in the oral or written dissemination of your results.
d) Respecting and valuing management, administration and tasks related to research activity, as well as making good use of the material means and facilities available to them.
e) Know and comply with the rules established by the UPCT, especially those relating to health and safety, financial management, leave and holidays.
f) Be informed about and follow safety rules and procedures, as well as the Code of Good Research Practice.
g) Sign the documentary commitment together with the thesis supervisor and tutor regarding the supervision of doctoral students in the manner established by the International Doctoral School.
h) To carry out the research and study activities that are appropriate to their status as researcher in training and with the necessary dedication and use, as well as to participate in the procedure for monitoring doctoral theses.
i) Act ethically when reporting the results obtained in the course of the doctoral thesis.
j) To maintain the secrecy of data and information provided or disclosed to it and which may be considered confidential information.
k) Report to the director regularly on the progress of their work, the results obtained, any problems that may arise in its development, and consider the comments and suggestions made by the director.

5.3. Rights of research trainees.

a) To receive quality research training that promotes scientific excellence and addresses equity and social responsibility.
b) To have a tutor to guide their training process and/or a supervisor and, where appropriate, a co-supervisor, with proven research experience, to supervise the completion of the doctoral thesis.
c) Participate in programmes and calls for grants for research training and for national and international mobility.
d) Participate in the training activities organised in the master's or doctoral programme necessary for their research training.
e) Request a change of thesis supervisor, a part-time doctoral thesis, an extension to present the thesis, or a temporary withdrawal from the doctoral programme, in accordance with the terms established by the current regulations.

f) To be considered, in terms of representation rights in the governing bodies of the University, as research staff in training, in accordance with the provisions of the legislation on science and research.

g) To be recognised as the holder of the intellectual or industrial property rights that may correspond to him/her in accordance with current legislation and to appear as co-author in all the works, articles or communications in which the research work in which the PhD student has participated in a relevant way is presented.

6. RESEARCH PROTOCOL.

6.1. Formulation of the research project.

All research projects to be carried out must be known to the University and, where appropriate, have the necessary authorisations, depending on the nature of the project.

Experiments and observations must be carefully designed with rigour and intelligence, making the best use of the resources available and complying with the work and occupational risk prevention regulations in the laboratory in force at any given time.

6.2. Exceptionally urgent investigations.

Where circumstances require the establishment of an investigation with immediate commencement, the commencement of activities should also be supported by an action protocol, albeit a simplified one.

As soon as possible, these protocols should be reviewed and processed according to the procedures required for regular protocols.

6.3. Collaborative projects.

Where a research project involves different groups from one or more institutions, the scope and terms of the joint collaboration, the determination of the custody and storage of the data or samples obtained, and in the case of possible commercial implications, issues related to funding and conflict resolution should be formalised in writing.

In multidisciplinary research projects involving professionals with different research priorities and procedures, participants will need to accept the need for common ethical interests, collect data responsibly and manage them consciously, protecting the rights of both the social community and the professional integrity of the research community.

6.4. Responsibility at on use y administration of the resources and infrastructures related to research.

The UPCT will support research activity and the transfer of its results by dedicating part of its budget to expenses related to the promotion of research, as well as to the acquisition and maintenance of scientific infrastructure.

The material resources allocated for research must be used effectively and efficiently, managed correctly and responsibly to achieve the intended objectives, and generate the greatest possible degree of confidence in society.

Scientific facilities and equipment must be adequate to carry out the planned research activities.

Both researchers and collaborating personnel shall follow criteria of responsibility, economy and efficiency in the use of resources, in accordance with occupational health and safety standards, and respecting the environment.

Any equipment used in research activities must be subject to preventive maintenance to ensure the safety of users. Researchers will not make any changes or alterations to the facilities without the knowledge and authorisation of the UPCT.

7. MANAGEMENT AND USE OF DATA AND MATERIALS RESULTING FROM RESEARCH.

In general, and safeguarding the stipulations of projects developed under agreements with other institutions, research carried out at the UPCT will comply with the following criteria regarding the management and use of data acquired in the course of the same.

7.1. Data collection and retention plan.

Any research protocol should provide for the system for the collection of data, records and material resulting from the execution of the research, as well as the plan for their safekeeping and preservation.

7.2. Registration of data and rectifications.

All data resulting from research experiments or observations should be collected without exception. This information should be permanently recorded in databases, laboratory notebooks or any other relevant format, and in a form suitable for review by third parties. Records shall also include changes, errors, negative, unexpected or discordant results, as well as the person performing or observing them.

7.3. Data and sample preservation.

All primary and original information, as well as digital, biological or chemical material stored as a result of any investigation, must be kept securely, for periods of time that will vary according to the nature of the investigation.

7.4. Custody of and access to the data collected.

All persons involved in the research team must have access to the data obtained and their interpretation. The person responsible for the research shall have a data register (notebooks, databases, etc.) and custody of samples, access to which must be made available to third parties.

7.5. Ownership of data and samples.

All primary documentation (data collection notebooks, databases, etc.) and material obtained in the course of research is the property of the institution to which the person responsible for the project is linked.

A researcher who changes institution may obtain from the person responsible for the project a copy of part or all of the records, where this is not prevented by specific clauses contained in the project.

Where the person responsible for the research changes institutions, this transfer of materials shall be carried out with the prior authorisation of the home institution and under its responsibility and supervision.

7.6. Use of data and samples by third parties.

The data and materials resulting from research must have the status of public and be in a position to be shared with third parties, with the exception of cases in which a priori restrictions have been established or legal restrictions exist for their publicity or distribution. The transfer of materials shall require prior knowledge of the applicant's intended use, knowledge of the request by the research team and a transfer protocol with the approval of the person responsible for the research.

7.7. Protection of personal data.

The processing of personal data must follow the guidelines of the General Data Protection Regulation (GDPR) approved by the European Union (R2016/679) on the protection of natural persons with regard to the processing of personal data and the free movement of such data, as well as the Organic Law 3/2018 of 5 December, on Data Protection and the Guarantee of Digital Rights.

8. RESEARCH PROJECTS SPONSORED BY INDUSTRY OR OTHER FOR-PROFIT ENTITIES.

Research projects sponsored by industry or other for-profit entities must be covered by a written agreement in accordance with the following premises:

- In the exchange or transfer of knowledge and technology with private entities, the public interest must always be paramount.
- When the research staff participating in a project promoted by industry contributes essentially to its design and execution, the necessary agreements will be established with the promoting entity so that the university can exercise its industrial and intellectual property rights.
- Researchers shall protect the intellectual freedom of their projects, avoid disproportionate confidentiality commitments or unjustified restrictions on the publication of the results obtained.
- Agreements must be made in full transparency.

9. PUBLICATION, PROTECTION AND DISSEMINATION PRACTICES.

9.1. Publication as a product of the research process.

The dissemination and publication of original and unpublished results in peer-reviewed journals or other media is a fundamental activity in any research work, as it is the means of sharing and submitting the results obtained to the scientific community for review.

In this area the University encourages research staff to follow best practice in publishing, as detailed in the guidelines of:

- The Publication Ethics Committee (http://publicationethics.org/)
- International Committee of Medical Journal Editors (http://www.icmje.org/)
- The Council of Science Editors (http://www.councilscienceeditors.org/).
- Open Science: https://www.openaire.eu/

In this sense, the use of the UPCT's institutional repository is recommended, which is fully compatible with traditional scientific publishing but seeks to facilitate wider dissemination.

9.2. Responsible research and innovation.

Responsible research and innovation involves anticipating and assessing the possible implications and societal expectations of research and innovation, with the aim of fostering the design of inclusive and sustainable research and innovation.

9.3. Oral communications.

Oral communications on research content should follow the same standards of honesty as for publications, avoiding exaggeration of the relevance and practical applicability of the results.

9.4. Review of errors.

If errors are found in the content of a publication, they should preferably be acknowledged in the same medium in which it was originally published. Retraction of the publication as a whole is necessary in the case of serious errors.

9.5. Protection of results of potential commercial interest.

If the results obtained in a research project may lead to inventions or applications potentially susceptible of being protected due to their commercial interest, the person responsible for the research project has the obligation to communicate this to the UPCT services and to manage the publication of the results in scientific journals taking into account this possibility.

9.6. Unpublished results.

Non-publication or undue delay in the publication of the results of publicly funded research may constitute a form of misappropriation of resources, unless the delay is related to the legal protection of the results obtained. The publication of results of clinical studies in which individuals have participated is an ethical imperative.

9.7. Fragmented publication.

Fragmented publication of parts of the same work should be avoided, except for reasons of length or at the request of the editors. Whimsically fragmented publication of a single piece of research is not acceptable.

9.8. Repeated publication.

Duplicate or redundant publication is considered an unacceptable practice, except for publications of reviews or short communications in congresses, conferences or similar.

9.9. Bibliographic references to third parties.

In publications as well as in patent or utility model files, it is necessary to include a reference to all work directly related to the research and, in turn, to avoid unjustified or honorific references.

9.10. Acknowledgements.

The acknowledgements section of a publication must be strict. The persons or institutions referred to have the right to decline to be mentioned. The same practice applies to mentions referred to as personal communication.

9.11. Institutional appropriations and aid.

In communications to congresses or other types of previous presentations, as well as in the final publication of results, it must be explicitly stated and acknowledged, unless mention has been declined:

- The institutions or centres to which the authors of the work belong or belonged and the place where the research was carried out.
- The independent ethics committees that oversaw the research protocol, as well as the specific permissions obtained, where applicable
- Grants, financial aid or financial sponsorship received to carry out the research.

9.12. Open access publications.

Publications in open repositories will conform to the same criteria as other means of publication and always in accordance with institutional policy. In this sense, in 2006, the UPCT adhered to the Berlin *Declaration on Open Access to Knowledge in the Sciences and Humanities*, which favours and promotes publication models that advocate free access to scientific and academic production generated by researchers.

9.13. Presentation in the media.

The presentation of results through the media should always include an explanation of an informative nature or a part of the presentation adapted to non-specialised audiences. In this type of public presentation, the name of the authors should always be associated with that of their institutions and, whenever possible, mention should be made of the grants and subsidies received.

Researchers are responsible for the veracity, reliability and objectivity of the information they communicate, ensuring that it is rigorous and sufficiently scientifically based. The expression of personal opinions should not be confused with the position of the University, if any.

9.14. Premature submission of results.

In general, premature reporting of results should be avoided. Only reasons of public utility can justify this type of presentation.

10. AUTHORSHIP OF SCIENTIFIC PAPERS, PUBLICATIONS AND PATENTS.

The status of author does not depend on membership of a particular profession or hierarchical position, nor on the nature of the employment relationship, but on the type of research contribution that gives rise to the work, publication or patent.

The order of authors should be according to the accepted guidelines in the discipline of the work, which should be known to all authors beforehand. The work and contributions of collaborators and support staff should be acknowledged appropriately. Any conflicts of interest must be made public.

To be the author of a publication or patent, the following conditions must be met:

- Have been substantially involved in the creative process, i.e. in its conception and design, or in the analysis and interpretation of the data and its final discussion on the basis of background information on the subject.
- Contributed to the preparation of the resulting communications, reports or publications
- Be able to present in detail the personal contribution to the research and to discuss the main aspects of the research as a whole.

10.1. Provision of data, opinions or test subjects.

Mere participation in the procurement of resources or data collection, such as the provision of routine data or the provision of test subjects, does not necessarily justify authorship.

10.2. Authors partly responsible.

In general, all authors referred to in a given publication should be familiar with the text of the publication and are responsible for its content.

10.3. Honorary authors and ghosts.

A person linked to the Research Group who, because of his or her hierarchical position or employment relationship, asks to be listed as an ex officio author, violates academic freedom and commits an act of injustice, if not abuse of authority.

Conversely, the omission of the name of any person who has made proven contributions according to the criteria expressed in section 10.1 is an act of misappropriation of intellectual property by the other authors.

10.4. Indication of authorship in reports.

The publication of memoirs, work or technical reports or any other writing addressed to third parties must always include a list of the authors of the research or investigation, the institution on which they depend and the subsidies received, all in the same terms as in the case of a scientific publication or a patent.

10.5. Shared principal authorship.

When two or more authors have devoted the same effort and shared the main work in the preparation of the manuscript, they will have the same status as first authors. This circumstance will be explicitly stated in the publication of the original.

10.6. Signature of the *curriculum vitae*.

In the preparation of the personal *CV*, the author is responsible for the accuracy of its content. In the case of a collective curriculum vitae, it is sufficient for it to be endorsed by the person responsible for the group or the person in charge of submitting the application.

11. *PEER REVIEW* PRACTICE

The preferred method used by the scientific community to examine and evaluate research projects, *curricula vitae*, various merits and written works is anonymous *peer review*, as it allows their quality and scientific rigour to be assessed.

11.1. Honesty in review processes.

Reviews should be objective and impartial, scientifically based, constructive, clear and precise, and sufficiently reasoned.

11.2. Confidentiality of reviews.

The evaluation process must be subject to strict conditions of confidentiality, both vis-à-vis the persons involved (authors, researchers, etc.).

as well as in relation to third parties. Reviewers and editors will not use the information to which they have had access during the evaluation process without the prior, specific and express authorisation of the author.

12. EXISTING RULES GOVERNING SPECIFIC ASPECTS OF SCIENTIFIC ACTIVITY.

Some aspects of scientific activity are regulated by specific regional, national or supranational regulations. Researchers must be aware of and respect the regulations that apply to their field of work.

12.1. Research areas subject to specific regulations.

At least those investigations relating to the following topics are currently the subject of specific regulations:

a) Biomedical experimentation on humans or samples obtained from them.
b) The use of experimental animals.
c) The use of risk micro-organisms
d) The use of genetically engineered organisms.
e) Research on human beings, their data or their traces in the Humanities and Social Sciences.
f) Processes with potential environmental impact.

12.2. Specific UPCT regulations.

At UPCT, research work subject to the specific regulations listed in section 12.1 must be authorised by the CEI-UPCT.

13. AMENDMENTS TO THE CODE OF GOOD PRACTICE IN RESEARCH.

This Code must necessarily be flexible and adaptable to the changing reality of scientific and technical research. The Governing Council, the President of the CEI-UPCT or one third of its members may submit to the CEI-UPCT proposals for the reform of this Code. The reform must be dealt with in an ordinary session and approved by an absolute majority of the members of the CEI-UPCT. Once approved by the Commission, the President of the CEI-UPCT will send the reformed Code, for its approval, to the UPCT Research Commission, which will submit it to the Governing Council for ratification.

14. REQUEST FOR CEI-UPCT ACTION BY UPCT STAFF.

Any member of the UPCT university community may submit to the CEI-UPCT, in writing addressed to the President of this Committee and presented to the UPCT Registry, any question that he/she considers to be within the scope of its mission, which consists of issuing reports, proposals and recommendations on matters related to the ethical implications of research. The CEI-UPCT may represent the UPCT in supranational and international forums and bodies involved in research ethics.

The President of the CEI-UPCT, upon receipt of a request for intervention by this Committee from a member of the UPCT, shall inform the Committee of the content and existence of said request. Where appropriate, he/she will decide on the relevance of convening the CEI-UPCT to deal with the issue in question.

ADDITIONAL PROVISION

All articles of these regulations that use the generic masculine form shall be understood to apply to any person irrespective of gender.