

GOOD PRACTICE IN RESEARCH,
PUBLICATION AND DISSEMINATION
OF RESULTS

Guidelines

UNIVERSITA' DEGLI STUDI DI PARMA

Summary

INTRODUCTION	3
1. THE EUROPEAN CODE OF CONDUCT FOR RESEARCH INTEGRITY.....	4
2. DEFINITION OF RESEARCH INTEGRITY	4
3. THE RESEARCH COMMUNITY.....	5
3.1 Collaborative working.....	5
3.2 Responsibilities of coordinators, research leaders and supervisors	5
3.3 Peer review	6
3.4 Independence and conflicts of interest.....	7
4. MANAGEMENT, PUBLICATION AND DISSEMINATION OF RESEARCH RESULTS.....	7
4.1 Availability and access to research data.....	7
4.2 Reporting guidelines.....	7
4.3 Definition of authors and co-authors	8
4.4 Order of the authors.....	9
4.5 Acknowledgements	9
4.6 Citations.....	9
4.7 Use of the correct institutional affiliation	9
4.8 Open Access Publications	10
4.9 Obligation to use the IRIS Research Archive.....	11
4.10 Metadata entry into IRIS.....	12
4.11 Deposit of full text publications in IRIS.....	12
4.12 Deposit of doctoral (PhD) theses.....	13
4.13 Warnings on the use of academic social networks	13
5. RESEARCH MISCONDUCT, DETRIMENTAL RESEARCH PRACTICES AND OTHER SERIOUS BREACHES OF GOOD RESEARCH PRACTICE WITH RELATED PROCEDURES.....	14
5.1 Research Misconduct: Fabrication, Falsification and Plagiarism (FFP).....	14
5.2 Detrimental Research Practices.....	14
5.3 Other breaches of good research practice	15
5.4 Procedures for handling suspected research misconduct and breaches of good research practice	15
References, Links and Further Reading (all links accessed on 14/05/2020)	17

INTRODUCTION

The objective of these Guidelines is to foster a culture based on research integrity and to support research conforming to the ethical principles and to the highest standards of rigour and integrity, i.e. to ensure the constant application of Good Research Practice within the University of Parma.

The Guidelines are applicable to all research fields and have the purpose of ensuring that all University staff, students, and researchers belonging to other institutions collaborating with the University of Parma, follow robust ethical principles when planning and developing research, whether conducted individually or as a collaborative effort, and when disseminating research results.

It is important that the University research staff and students read, understand and follow the Guidelines in everyday practice.

They are subdivided into five chapters:

- 1) The European Code of Conduct for Research Integrity
- 2) Definition of Research Integrity
- 3) The Research Community
- 4) Management, publication and dissemination of research results
- 5) Research Misconduct, Detrimental Research Practices and other breaches to good research practice with related procedures

1. THE EUROPEAN CODE OF CONDUCT FOR RESEARCH INTEGRITY

In 2011, the European Code of Conduct for Research Integrity was developed by All European Academies (ALLEA) and the European Science Foundation (ESF). The Code was revised in 2017 and the European Network of Research Integrity Offices (ENRIO) recommends that each European country, research institutions and researchers adhere to it. The European Code emphasises that: “A basic responsibility of the research community is to formulate the principles of research, to define the criteria for proper research behaviour, to maximise the quality and robustness of research, and to respond adequately to threats to, or violations of, research integrity”.

The fundamental principles of research integrity that underpin good research practices are described in the Code:

- **Reliability** in ensuring the quality of research, reflected in the design, the methodology, the analysis and the use of resources.
- **Honesty** in developing, undertaking, reviewing, reporting and communicating research in a transparent, fair, full and unbiased way.
- **Respect** for colleagues, research participants, society, ecosystems, cultural heritage and the environment.
- **Accountability** for the research from idea to publication, for its management and organisation, for training, supervision and mentoring, and for its wider impacts.

2. DEFINITION OF RESEARCH INTEGRITY

Research integrity may be defined as active adherence to the ethical, professional and legal standards that underpin good research practice.

Research institutions and researchers should know how to access, be familiar and comply with all the ethical, professional and legal standards and requirements relevant to their field of study for the proper conduct of research.

The rules of research integrity are applicable to all types and to all phases of research, from the planning to the implementation of the project, to the communication and dissemination of the results.

The rules must be followed by all permanent research staff, and also by all undergraduate, graduate and postgraduate students, by research fellows and postdoctoral researchers.

These Guidelines are based on shared rules that define and promote research integrity; generally speaking there are internal rules, when referring to the “self-regulatory” capacity of the scientific community (e.g. originality of research, intellectual freedom, data confidentiality, impartiality) and external rules, that regulate the relationship between scientific community and society (e.g. conflict of interest, respect for human dignity, social accountability).

In biomedical research there are recognised international ethical standards, such as the Belmont Report (1979), the World Medical Association’s (WMA) Declaration of Helsinki (1964, as amended

currently 2013), the Good Clinical Practice (GCP) Guidelines (R1, 1996 and R2, 2016), an ethical and scientific quality standard for all phases of a clinical trial.

The Ethics Code of the American Psychological Association (APA) provides guidance, principles and standards of professional conduct for psychologists. The Associazione Italiana di Psicologia (AIP) has its Ethics code for research in psychology that defines the standards of conduct for its members. In the pedagogical field there are Ethical Guidelines for Educational Research (2018) edited by the British Educational Research Association (BERA).

3. THE RESEARCH COMMUNITY

The University of Parma supports research of the highest standards of rigour and integrity and fosters a culture that values critical thinking and an open dialogue on the quality of research.

The University of Parma actively promotes the principles of research integrity to create a favourable research environment for their implementation in practice and to encourage a responsible and collaborative attitude among colleagues.

3.1 Collaborative working

Before the beginning of a research project, it is necessary to clearly and impartially define the roles and specific tasks of each researcher and of the institutions involved. The roles must be defined in accordance with the qualifications and the expertise of each individual and must be promptly shared with all those involved in the project.

The partners in research collaborations must communicate with each other and with the research support officers within their institutions frequently and regularly, as transparently and openly as possible. All those involved have the right to be informed about the progress of the research and the achievement of the results.

The coordinator, responsible for the research project, must transparently and openly discuss and agree with the other participants in the project on any subsequent changes to the research plan. It is a duty of the coordinator to be vigilant that all research staff comply with the principles of research integrity and to protect the researchers involved against the risks of coercion and/or discrimination. All the researchers involved in the project must collaborate, to the extent possible, in order to verify and possibly correct, if necessary, work done by their colleagues, according to their expertise, fairly, impartially and transparently. This process must be completed in the full respect of the professional and personal reputation of each individual.

3.2 Responsibilities of coordinators, research leaders and supervisors

Coordinators/research leaders must guide their research groups in a meticulous and fair manner. They have the duty to impartially and transparently assess the work performed by each member of the group, promoting merit and behaving in accordance with the principles of good administration

and stewardship and good research practice. It is a duty of coordinators/research leaders to encourage frequent, open and transparent communication within the group and to be vigilant and proactive in order to reduce the risk of research misconduct, of detrimental research practices and of other breaches of good research practice.

Coordinators/research leaders must take the responsibility for dealing with issues that may arise within the group, especially if the research activities cause unwarranted stress in the staff involved. If the activity of the research unit produces original publishable results, the coordinator must ensure that all those who substantially contributed to the research are included in the list of authors, and that the order in the list reflects the true contribution to the research project (as detailed in section 4.3 and 4.4). Similarly, coordinators/research leaders must ensure that individuals, not involved in the project, or who did not give a substantial contribution, are not listed among the authors. To comply with good research practice and good publication practice, they must also ensure that all authors contribute to the preparation of the manuscript and agree upon the journal chosen for submission.

The same rules also apply to national or international research partners.

Coordinators/research leaders can propose to delay the publication of research results if the research leads to inventions that require patent protection. In this case, all participants in the research must be informed about the confidentiality of the data collected and the estimated embargo period for patent deposit. Once the patent is deposited and the right of priority acquired, the research leader and the co-authors can proceed with the publication as specified above.

In the specific case of the supervisor-student (undergraduate, graduate or postgraduate) relationship, the former must be aware of the asymmetrical relationship and must not take advantage of his/her role to the detriment of the student, but on the contrary must make all efforts to encourage and value students who are beginning their training in research.

If a supervisor wants to use the data, personally collected by a PhD student, it is necessary to check that using the data for a publication will not delay the finalisation of his/her doctoral thesis.

If the research results are original and lead to a publication, the supervisor must include the PhD student among the authors, ensuring that the position of his/her name in the list reflects the true contribution to the research project. In the case of undergraduate and postgraduate theses, the contribution of the student is generally limited and therefore a recognition under the form of an acknowledgement is acceptable. The final decision is left to the supervisor and is based on the actual performance of the student, as detailed in section 4.3.

3.3 Peer review

The University of Parma recognises the value and the importance of the so-called “peer review” and encourages professors and researchers to make themselves available to act as peer reviewers of research conducted by others to promote the advancement of knowledge in their academic field. Peer review must be performed with proficiency and due professional care, protecting the right to confidentiality of the authors. Reviewers must not gain professional nor personal advantages from this activity.

The role of reviewers must not be limited to scientific journals alone, but should also include the review of contributions to meetings and participation to evaluation processes for allocating national or international research funds.

3.4 Independence and conflicts of interest

The researcher must avoid or at least always declare, clearly and according to the context, any potential or actual conflicts of interest that could compromise the objectivity required in the conduct of research, and when reporting and disseminating the results. Similarly, the researcher who assesses another researcher's work (see section 3.3) must disclose from the start any real or potential conflicts of interest.

Researchers cannot take part in procedures that have the purpose of assessing, approving and/or funding their own research or any research they may be involved in. Likewise, they cannot take part in assessments of provisions/activities/measures if they were involved in their development and implementation.

4. MANAGEMENT, PUBLICATION AND DISSEMINATION OF RESEARCH RESULTS

4.1 Availability and access to research data

The researchers of the University of Parma must ensure that all primary and secondary data, generated by their research activities are archived and retained in a correct and appropriate manner to guarantee safety and accessibility for at least seven (7) years after completion of the research or longer, under some circumstances, such as clinical research sponsored by the industry. In this case the length of time of data retention is specified in the contract.

In order to make research more open, global and collaborative and to guarantee its quality, the data should be made available to colleagues who wish to replicate the study or use the data as a base for further research, especially data collected with the support of national public funds (e.g. Research Projects of National Interest-PRIN, ministry funds, regional funds, etc.) or international funds (e.g. EU funding programmes). To the extent possible the data must be in line with the FAIR principles (Findable, Accessible, Interoperable, Reusable). At the same time it is necessary to guarantee data confidentiality and personal data protection in accordance with the University Regulation "Regolamento sul trattamento, la comunicazione e la diffusione da parte dell'Università degli Studi di Parma dei dati personali, ivi compresi quelli sensibili e giudiziari, ai sensi del Regolamento UE 679/2016", DRD 2255/2019 of 24/9/2019 and DL 196 of 30/06/2003, "Codice in materia di protezione dei dati personali", modified by DL 101 of 10/08/2018, "Regole deontologiche".

4.2 Reporting guidelines

Researchers should be aware of and follow applicable reporting guidelines that help to accurately and fully report research results. Publications should provide sufficient detail to allow other researchers to replicate experiments/studies. In clinical research, for example, the CONSORT (Consolidated Standards of Reporting Trials) Guidelines are recommended to report the results of a randomised controlled clinical trial. The International Committee of Medical Journal Editors (ICMJE)

recommends that all medical journal editors require registration of clinical trials in a public trial registry (e.g. ClinicalTrials.gov) before the enrolment of the first participant. If this has not been actioned, the trial will not be considered for publication. For clinical trials registered on the EU database, EudraCT, it is mandatory, independently of the publication of trial results in a scientific journal, that the sponsor uploads the end of trial summary results to EudraCT as per the EU commission's guidelines on the posting and publication of trial results.

Researchers can refer to other relevant guidelines on the EQUATOR (Enhancing the Quality and Transparency of Health Research) Network website, e.g. for observational studies (STARD guidelines), for systematic reviews (PRISMA guidelines), etc. For the latter it is also useful to consult the JBI (Joanna Briggs Institute) Global Wiki.

In the field of psychology the guidelines of the American Psychological Association (APA) "Preparing Manuscripts for Publication in Psychology Journals: A Guide for New Authors" are used and preregistration of research is often required.

4.3 Definition of authors and co-authors

In accordance with the recommendations of the International Committee of Medical Journal Editors (ICMJE) and of the Council of Science Editors (CSE), ALL of the following criteria must be met in order to define a researcher as author of a publication:

1. the researcher must have given a substantial contribution to the conception or design of the research, or to the acquisition, analysis, or interpretation of the data;
2. the researcher must have participated in drafting the article or revising it critically for important intellectual content;
3. the researcher must have approved the final version of the article to be published;
4. unless otherwise specified, the researcher is held accountable for all aspects of the work (not necessarily for all technical details). It is good practice to describe in the publication the exact contribution of each co-author to avoid blanket condemnations for alleged research misconduct and/or detrimental research practices.

The four criteria listed above are valid especially for articles published in journals, but are also applied to other types of publications, such as presentations at meetings and related proceedings, informative articles, extended abstracts, etc.

Therefore, individuals who contributed to data acquisition, or critically reviewed an article but do not meet all four criteria, cannot be designated as co-authors. Such contributions should be recognised and included in the section "Acknowledgements" or in a footnote. It is NOT acceptable to add gift, guest or honorary authors who made no significant contribution to the reported research, e.g. researchers may add the name of a well-known author in the hope that it will increase the likelihood of the paper being accepted for publication in a prestigious journal.

It is recommended to define as soon as possible, ideally when planning the publication, both the identity of the authors and the order of the names in the listing.

A request by a scientist in a position of authority to be listed as an author on all articles submitted by subordinates, even if he/she gave no contributions, is defined as "coercive authorship". This contrasts with good research, publication and authorship practices and is unacceptable.

4.4 Order of the authors

The order of the authors must be collectively agreed by the authors and, in the event of disagreement, it is a duty of the research leader to make the first attempt to resolve the conflict. If the attempt is unsuccessful, it is a duty of the institutions involved in the research to resolve the conflict through their appointed bodies.

The Scientific Mediator (Ombudsperson), designated by the Academic Senate of the University of Parma, is the independent person who deals with the resolution of authorship disputes.

The Ombudsperson is a confidential figure, qualified and impartial, with documented experience in a senior academic leadership position. The corresponding author is the person responsible for communicating with the journal chosen for submission (or with the editor for other types of publications) and promptly responds to all the journal's administrative requests. Following publication, the corresponding author must be available to answer to critical appraisals and questions of the scientific community on the published data or to provide further information.

4.5 Acknowledgements

If the researcher's contribution is insufficient for authorship (see section 4.3), his/her contribution must however always be explicitly recognised in the publication as an acknowledgement, declaring, whenever possible, details of the contribution. Likewise, all the individuals who provided support to the research activities reported in the article (e.g. financial support, transfer of materials, loan of equipment, infrastructure, making available and discussing data reported in their previous publications, etc.) should be acknowledged.

4.6 Citations

The authors of a publication must correctly cite and reference their sources. Correct referencing is crucial to contextualise and critically appraise research and it is also necessary to support future research. Correct referencing gives credit to the authors and gives the reader the possibility to find the original text. It is a duty of the senior researchers to transmit to the students the necessary skills to identify and correctly cite and reference bibliographic sources.

4.7 Use of the correct institutional affiliation

To facilitate the traceability of articles and other contributions published by staff of the University of Parma it is mandatory that the authors use a specific format to identify their affiliation. The format is established by the Council of each single Department, both in an Italian and English version, and it must include the wording "Università di Parma" ("University of Parma"). In justified cases dual affiliations are allowed, i.e. for staff belonging to the Department of Medicine and Surgery collaborating with the University Hospital, for professors associated with CNR (Consiglio Nazionale delle Ricerche) institutes, for professors on sabbatical leave or on secondment to another institution, etc.

The use of a standard affiliation allows a clear attribution of the publications to authors belonging to our University, and it is also particularly important for a correct classification of the University of Parma in national and international rankings.

4.8 Open Access Publications

The University of Parma contributes to the development of society by promoting the civil and cultural rights of the individual and by producing and disseminating knowledge. Therefore, the University of Parma promotes the implementation of the principle of Open Access as defined by the Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities (October 2003), signed by the University of Parma with the endorsement of the Messina Declaration (2004).

The University of Parma applies the European Commission Recommendation of 17 July 2012 on access to and preservation of scientific information (2012/417/UE) in GUCE L 194/39 of 21 July 2012: the EU Commission, while addressing the Member States, recommends that academic institutions define and implement policies for the dissemination of and Open Access to publications, as well as policies for long term preservation of the publications.

Among the initiatives to promote Open Access, the University of Parma will provide training opportunities on the different types of Open Access, on the issues related to intellectual property, copyright legislation and management of research data, as requested by the recommendations “Towards Full Open Access in 2020” published by the European University Association (EUA).

The principle of Open Access fulfils the highest constitutional values for the promotion of cultural development and of scientific and technical research, and also for the safeguard of academic and scientific freedom.

By promoting Open Access, the University of Parma supports the dissemination of research results on an international scale, interdisciplinary research, knowledge transfer to enterprises and transparency and accountability to the public. Open Access also contributes to a more efficient use of publications for teaching and guarantees their availability and preservation over time. Publication under the Open Access mode makes research products freely available online with no restrictions or with limited re-use restrictions. Traditionally, journal articles have only been accessible to researchers whose institutional libraries subscribed to the journal.

The objective of Open Access is to break down barriers to access not only for researchers with limited resources, but also for all other readers (students, journalists, patients, etc.) who have an interest in the publication(s).

Articles can be published under Open Access mode through one of two routes:

Green Open Access refers to self-archiving articles “accepted for publication” (i.e. the final version after peer review but prior to formatting by the publisher) which are deposited in an institutional repository, such as IRIS (see section 4.9). An embargo period may be applied by the publisher (generally 6-12 months) during which time the article is not visible and cannot be downloaded. During the embargo, the metadata (bibliographic data such as the authors, key words and the abstract) are always visible to everyone whereas the article is only visible to the author, to any co-authors and to the IRIS administrators. The beginning of the embargo coincides with the date of

online publication of the article. Setting the expiration date in IRIS, the article will be automatically visible at the end of the embargo.

Regardless of the chosen means of dissemination (the institutional repository IRIS, ArXiv, etc.), the possibility of publication via the Green route must be checked with the publisher of the journal in which the article is officially published. Generally in this case the ownership of copyright remains with the publisher.

Gold Open Access: the author does not assign the copyright to the publisher but pays a publisher's open access fee (Article Processing Charge, on average from 1000 to 3000 Euros, but the fee may be higher) to make the article Open Access upon publication via the journal website. There are some fully Open Access journals and others called hybrid journals, that offer the possibility to publish via the Gold route or assigning the copyright to the publisher.

It is recommended to check each journal's policy in terms of copyright and deposit on SHERPA/RoMEO and funders' Open Access policies on SHERPA/JULIET (<https://v2.sherpa.ac.uk/>).

To check that your selected journal is compliant with your funder's Open Access policy, refer to SHERPA/FACT.

4.9 Obligation to use the IRIS Research Archive

The University of Parma implemented, within the U-GOV Research system, the IRIS (Institutional Research Information System) Research Archive for research products deposited in accordance with the terms and conditions in the publishing agreements (Open Access or copyright assignment).

The Archive conforms to the best practices and international technical standards on Open Access (OpenAIRE - <https://www.openaire.eu/mission-and-vision>), to the interoperability standards of OAI-PMH Open Access archives, to the best practices and international standards for registration, certification, dissemination and long-term preservation of research contributions.

The Archive is interoperable with the MUR (Ministry for University and Research) databases.

For the internal evaluation (e.g. Local funds for research - FIL) and external evaluation (e.g. Evaluation of the Quality of Research - VQR) processes, the University only and exclusively takes into account the contributions deposited in IRIS.

All publications, in which staff of the University of Parma are involved, must be promptly uploaded to IRIS that is linked to the national data bank Login-MIUR, ensuring that the data are checked for accuracy and completeness.

IRIS, the Integrated Research Archive of the University of Parma, has the following functions:

- to archive in standardised format the data describing the research contributions published by professors and researchers of the University (bibliographic metadata);
- to make the data accessible also outside the University, creating a single access point to all the information on the research production of the University of Parma;
- to improve the visibility and the impact of the research contributions of the University of Parma at national and international level;
- to preserve the original full texts of the contributions in the most appropriate version and at different levels of accessibility in accordance with the publishing agreements;

- to provide complete and reliable data to internal and external bodies appointed to evaluate the quality of research.

Any of the following types of publications must be archived in IRIS: Article in a journal, Contribution to a volume (Chapter or Essay), Conference proceeding, Conference abstract, Monography or scientific treatise, Abstract in a journal, Editing, Poster, Review in a journal, Entry in a dictionary or in an encyclopedia, Preface/Afterword, Note to sentence, Patent, Short introduction, Bibliographic entry, Critical edition, Book translation, Fair, Volume translation, Publication of unpublished sources, Exhibition, Drawing.

4.10 Metadata entry into IRIS

Data entry is performed by professors and researchers, under their responsibility, after user authentication on the IRIS platform with their University credentials. As soon as the final version of the contribution is published, it is good practice to promptly complete the record. It is essential to ensure that the description of each contribution is accurate and complete. For University staff belonging to the so-called bibliometric areas, importing the bibliographic record from the most important databases (Scopus, Web of Science, PubMed, DOI, etc.) simplifies and speeds up the process, notwithstanding the need to check the accuracy of the data.

To enable the use of integrated functions for bibliometric analysis in the database, it is compulsory to enter the WoS and Scopus identifiers. For each publication these identifiers allow IRIS to import the citation data that are used with the journal impact factors to perform a bibliometric analysis.

4.11 Deposit of full text publications in IRIS

Professors and researchers are recommended to archive, with the metadata, the text of each publication, in open or closed access mode, depending on the copyright and licensing terms of the publisher and on the type of contribution.

Full text archiving is recommended for the following reasons:

- The deposit in IRIS generates a “backup copy”, archived on the University server, with its own permanent URL.
- The availability of full text contributions in IRIS facilitates the task of the University Area Commissions when performing FIL evaluations for the allocation of local research funds, and is also convenient when uploading contributions on the teaching staff LoginMiur website (<https://loginmiur.cineca.it/>) for the Evaluation of the Quality of Research (VQR) or when the National Scientific Habilitation takes place.
- If the text is in Open Access mode, the visibility of the contribution is enhanced, which favours the dissemination of knowledge and increases the impact of research.
- If the contribution is published in an Open Access journal, it is also advisable to deposit the Open Access full text in IRIS.
- If the contribution was published in a closed access journal (i.e. only visible upon subscription), but the authors paid a fee to make it Open Access, the Open Access full text can also be deposited in IRIS.

- If the contribution was published in a closed access journal and no fee was paid to make it freely accessible to everyone, the full text can be deposited in IRIS selecting the closed access mode.

4.12 Deposit of doctoral (PhD) theses

The rules within these Guidelines for the publication and deposit of articles must also be applied to doctoral theses, in agreement with the recommendations of the Conference of the Rectors of the Italian Universities (CRUI) for the deposit of doctoral theses in open archives, notwithstanding any provisions in the University Regulations for Doctoral Courses and in the University Regulations governing Doctoral Schools and any provisions in PhD calls.

In any case the deposit of the doctoral thesis in the institutional archive (at present “DspaceUnipr”) is a prerequisite for admission to the final examination; it substitutes the presentation of a hard copy and fulfils the obligation of legal deposit in the National Libraries of Rome and Florence. All doctoral theses are published in Open Access and are freely available with no restrictions, at the end of the course or at the latest twelve months after the dissertation, according to the expressed will of the author.

4.13 Warnings on the use of academic social networks

An increasing number of researchers have become members of academic networks, such as ResearchGate or Academia.edu, since this enhances the relationship between researchers and their research community and increases the visibility of their contributions.

However the decision to deposit full texts should be carefully weighed. Dissemination of research findings on these platforms is usually subject to stricter rules than the deposit in IRIS, the Institutional Research Archive.

Apart from the text of publications in Open Access mode, generally it is not allowed to deposit the PDF file or the full text of a publication on platforms such as ResearchGate or Academia.edu, if not with the explicit authorisation of the holder of publishing rights (for scientific publications the ownership of copyright generally remains with the publishers).

For other types of contributions, such as volumes, essays or chapters in monographic volumes, etc., it is good practice to carefully verify the terms and conditions defined by the editor for the dissemination of the contribution. Please note that the possibility to deposit the “pre-print” version of the contribution (the final version in terms of content, prior to formatting by the publisher) is often explicitly limited to the researcher's institutional repository, and therefore deposit on academic social networks is not allowed. The invitations on behalf of these platforms to deposit a PDF copy of one's contribution must therefore be considered very carefully. The Sherpa RoMEO database contains detailed and updated information on the acceptable ways to disseminate one's contributions: acceptable versions for publication, possible embargo periods, acceptable institutional or disciplinary archives for deposit.

Bear in mind that an infringement of the copyright granted to the publisher by the authors is a crime. The authors who infringe these rights can be prosecuted by the publishers and sentenced to substantial compensation.

5. RESEARCH MISCONDUCT, DETRIMENTAL RESEARCH PRACTICES AND OTHER SERIOUS BREACHES OF GOOD RESEARCH PRACTICE WITH RELATED PROCEDURES

5.1 Research Misconduct: Fabrication, Falsification and Plagiarism (FFP)

Research misconduct may be defined as a serious breach of good research practice that must be strongly opposed and dealt with promptly and effectively.

Research misconduct typically includes Fabrication, Falsification in proposing, performing research or reporting research results, or in reviewing research, and Plagiarism (FFP).

Data fabrication and falsification are the most serious forms of research misconduct since they are associated with an intention to deceive.

Data **fabrication** means making up data or results and recording or reporting them.

Falsification comprises manipulating data, procedures or equipment, changing or omitting data or results in order to produce the desired result and/or avoid inconvenient or unexpected results. It also includes the use of incorrect or inappropriate statistical analyses to increase the significance of results that lead to false conclusions.

Fabrication and falsification also refer to other aspects of research, such as creation of false documents or the manipulation of existing documents, e.g. of the participant informed consent forms to take part in research.

Plagiarism is the appropriation of another person's work (such as publications, ideas, data, results or words) without giving appropriate credit, in order to present it, in whole or in part, as if it were your own. Plagiarism is, just like data fabrication and data falsification, an unacceptable practice that violates the fundamental ethical rules in research. The plagiarist not only jeopardises his reputation as a researcher, but also the credibility of his research and of his institution.

Bear in mind that plagiarism is an unlawful act that may have civil, criminal and administrative consequences.

We also speak of plagiarism when another person's text is used and/or translated, in whole or in part, without referencing or citing the authors or when an article is cited at the beginning of one's text, and then used throughout the text, without citing the source again.

Research misconduct can occur not only when planning and performing research, in the formulation and publication of research results but also in the relationships with colleagues (see section 3.1). If errors are detected in published articles or there are grounded suspicions on the reliability of the data, it is up to the authors to promptly contact the editor in order to correct or retract the publication.

5.2 Detrimental Research Practices

Detrimental research practices (DRPs) include unacceptable authorship practices such as denying authorship to those who deserve to be designated as authors (unacknowledged or "ghost" authorship), or assigning authorship to those who did not contribute to the research reported in the publication.

Multiple submissions are also DRPs. It is bad practice, from an ethical and professional perspective, to submit the same results of a study to more than one journal at a time to increase the likelihood

of publication, as it is to artificially and unnecessarily split the results of a study to multiply the number of publications (fragmentary publication). Fragmentary publication compromises the possibility of the research community to access the results as a whole and, above all, to evaluate their overall significance and importance.

Other examples of DRPs include:

- not making available data or other information about research procedures necessary to replicate research results;
- the practice of p-hacking, e.g. researchers collect a dataset without predefining the research hypothesis (or ignoring the predefined hypothesis) and search for a statistically significant result(s) that they selectively report;
- the tendency toward reporting/publishing positive results, and not reporting/not publishing negative or inconclusive results (publication bias).

All these DRPs compromise the reproducibility and the intrinsic value of research.

5.3 Other breaches of good research practice

Failure to meet ethical, professional and legal standards and requirements as well as failure to obtain appropriate authorisations to start or conduct research (e.g. the approval of an Ethics Committee prior to initiation for studies involving animals, human subjects, human materials or personal data and the necessary regulatory authorisations) are other serious breaches of good research practice that are forbidden and sanctioned by Italian law.

5.4 Procedures for handling suspected research misconduct and breaches of good research practice

Notwithstanding any provisions of civil and criminal or administrative law, research misconduct and breaches of good research practice are considered violations of the Ethics Code of the University of Parma, punishable according to the procedures and penalties set forth in art. 16 of the Code. In any event, and without prejudice to the above, the provisions of the Code of Conduct will remain applicable.

Teaching staff may also be subject to a disciplinary proceeding in accordance with art. 10 of the L. 240/2010; technical-administrative staff are subject to the Disciplinary Code in accordance with artt. 55 and segg. of the D.lgs. n. 165/2001 and to the penalties therein, besides those set forth in the applicable C.C.N.L. (National Collective Labour Agreement); students are subject to the national laws regarding penalties to students.

Whoever witnesses research misconduct or a serious breach of good research practice on behalf of University staff and/or University collaborators, or of someone who, in any capacity, takes part in University research activities, must report the factual circumstances, supported by the available evidence, to the Ombudsperson, via PEC (Certified Electronic Mail). The University of Parma commits to protect staff who report, in good faith, cases of suspected research misconduct in accordance with the specific legislation ("Whistleblowing").

The Ombudsperson performs a preliminary investigation, supported if necessary by the President of the relevant Area Commission (Commissione di Area disciplinare), where the alleged misconduct occurred. If the misconduct is confirmed by the investigation, he will act as follows:

- If the respondent belongs to the teaching staff, he transmits the documents to the Rector;
- If the respondent belongs to the technical-administrative staff, he transmits the documents to the UPD (Disciplinary Proceedings Office);
- If the respondent is a student or another person subject to the Code of Conduct and/or to the Ethics Code, he transmits the documents to the Rector.

The course of action depends on the provisions applicable to the person against whom the allegation of research misconduct is directed, as described above.

This is the correct procedure to follow if a suspected case of research misconduct of University staff and/or University collaborators is witnessed. Whoever witnesses suspected research misconduct and does not disclose it in accordance with this procedure, but informally discusses the issue with a third party, without ensuring a preliminary investigation by the Ombudsperson and the opportunity for the respondent to defend him/herself, commits in turn an unacceptable form of misconduct.

False and unfounded allegations of research misconduct addressed to colleagues who are unaware of the allegations or who are in good faith represent another unacceptable form of misconduct.

The University of Parma is committed to organising an annual workshop for junior researchers and postgraduate students on the principles of research integrity and on good practice in planning and conducting research, and in publishing and disseminating the results of research.

References, Links and Further Reading (all links accessed on 14/05/2020)

- ALLEA (All European Academies). The European Code of Conduct for Research Integrity. Revised Edition. Berlin 2017.
(<https://www.allea.org/wp-content/uploads/2017/05/ALLEA-European-Code-of-Conduct-for-Research-Integrity-2017.pdf>)
- ENRIO (European Network of Research Integrity Offices) Handbook. Recommendations for the Investigation of Research Misconduct; March 2019.
(http://www.enrio.eu/wp-content/uploads/2019/03/INV-Handbook_ENRIO_web_final.pdf)
- The European Charter & Code for Researchers. European Commission 2005.
(<https://euraxess.ec.europa.eu/euraxess/charter-code-researchers>)
- Commissione per l'Etica della Ricerca e la Bioetica del CNR. Linee Guida per l'integrità nella ricerca. Revisione dell'11-4-2019.
(https://www.cnr.it/sites/default/files/public/media/doc_istituzionali/linee-guida-integrita-nella-ricerca-cnr-commissione_etica.pdf?v=1)
- Belmont Report; 1979.
(www.hhs.gov/ohrp/regulations-and-policy/belmont-report/index.html)
- WMA Declaration of Helsinki; 2013.
(www.wma.net/en/30publications/10policies/b3/index.html)
- ICH (International Council for Harmonisation of Technical Requirements for Pharmaceuticals for Human Use) Harmonised Guideline. Integrated Addendum to ICH E6(R1): Guideline for Good Clinical Practice E6(R2); November 9, 2016.
(https://database.ich.org/sites/default/files/E6_R2_Addendum.pdf)
- Ethical Principles of Psychologists and Code of Conduct (Ethics Code). American Psychological Association (APA); 2017.
(<https://www.apa.org/ethics/code/>)
- Il Codice Etico per la ricerca in psicologia. Associazione Italiana di Psicologia (AIP); 2015.
(<https://aipass.org/node/11560>)
- Ethical Guidelines for Educational Research. British Educational Research Association (BERA); 2018.
(<https://www.bera.ac.uk/publication/ethical-guidelines-for-educational-research-2018>)
- UKRIO (UK Research Integrity Office). Code of Practice for Research. Promoting good practice and preventing misconduct; September 2009.
(<https://ukrio.org/wp-content/uploads/UKRIO-Code-of-Practice-for-Research.pdf>)
- Universities UK. The concordat to support research integrity; 2012.
(<https://www.universitiesuk.ac.uk/policy-and-analysis/reports/Documents/2012/the-concordat-to-support-research-integrity.pdf>)
- National Academies of Sciences, Engineering, and Medicine. Fostering Integrity in Research. Washington, DC: The National Academies Press; 2017.
(<https://doi.org/10.17226/21896>)
- National Academy of Sciences (US), National Academy of Engineering (US) and Institute of Medicine (US) Panel on Scientific Responsibility and the Conduct of Research. Responsible

Science: Ensuring the Integrity of the Research Process: Volume I. Washington (DC): National Academies Press (US); 1992.

<https://www.nap.edu/catalog/1864/responsible-science-ensuring-the-integrity-of-the-research-process-volume>

- Benos DJ, Fabres J, Farmer J, et al. Ethics and scientific publication. *Advances in Physiology Education*, 29: 59–74, 2005.
(<https://www.physiology.org/doi/pdf/10.1152/advan.00056.2004>)
- Wilkinson, M., Dumontier, M., Aalbersberg, I. et al. The FAIR Guiding Principles for scientific data management and stewardship. *Sci Data* 3, 160018, 2016.
(<https://www.nature.com/articles/sdata201618.pdf>)
- Moher D, Hopewell S, Schulz K, Montori V, Gøtzsche PC, Devereaux PJ, Elbourne D, Egger M, Altman DG. CONSORT 2010 Explanation and Elaboration: updated guidelines for reporting parallel group randomised trials. *BMJ* 2010;340:c869.
(<http://www.consort-statement.org/Media/Default/Downloads/CONSORT%202010%20Explanation%20and%20Elaboration%20Document-BMJ.pdf>)
- EQUATOR (Enhancing the Quality and Transparency of Health Research) Network.
(<https://www.equator-network.org/>)
- JBI (Joanna Briggs Institute) Global Wiki. JBI Reviewers' Manual; 2019.
(<https://wiki.joannabriggs.org/display/MANUAL/JBI+Reviewer%27s+Manual>)
- Preparing Manuscripts for Publication in Psychology Journals: A Guide for New Authors. American Psychological Association (APA); 2010.
(<https://www.apa.org/pubs/authors/new-author-guide.pdf>)
- Brian A. Nosek and D. Stephen Lindsay. Preregistration Becoming the Norm in Psychological Science. Association for Psychological Science. February 28, 2018.
(<https://www.psychologicalscience.org/observer/preregistration-becoming-the-norm-in-psychological-science>)
- ICMJE (International Committee of Medical Journal Editors). Recommendations for the Conduct, Reporting, Editing, and Publication of Scholarly Work in Medical Journals; Updated December 2018.
(<http://www.icmje.org/icmje-recommendations.pdf>)
- Council of Science Editors. CSE's White Paper on Promoting Integrity in Scientific Journal Publications, 2012 Update. Editorial Policy Committee (2011-2012), 2012.
(https://www.councilscienceeditors.org/wp-content/uploads/entire_whitepaper.pdf)
- Tisdale, JE. 2009. Integrity in authorship and publication. *CJHP*, 62 (6), 441-442, 2009.
(<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2827013/pdf/cjhp-62-442.pdf>)
- London School of Hygiene and Tropical Medicine. Open Access Publishing Policy; November 2019.
(https://www.lshtm.ac.uk/sites/default/files/open_access_policy.pdf)
- London School of Hygiene and Tropical Medicine. Library & Archive Service. Fact sheet on Open Access.
(<https://researchonline.lshtm.ac.uk/id/eprint/4645488/1/LSHTM%20OA%20factsheet.pdf>)

- SHERPA/RoMEO – Publisher copyright policies & self-archiving.
(<https://v2.sherpa.ac.uk/romeo/>)
- OpenAIRE. - European Open Science Infrastructure, for open scholarly and scientific communication.
(<https://www.openaire.eu/mission-and-vision>)
- Max Plank Institute. Proposals for safeguarding good scientific practice. Recommendations of the commission on professional self-regulation in science; 1997.
(https://www.mpimet.mpg.de/fileadmin/publikationen/Volltexte_diverse/DFG-Safeguarding_Good_Scientific_Practice_DFG.pdf)
- The Norwegian National Research Ethic Committees. Guidelines for research ethics in the social sciences, humanities, law and theology; NESH, Oslo 2016.
(https://www.etikkom.no/globalassets/documents/english-publications/60127_fek_guidelines_nesh_digital_corr.pdf)
- UFZ. Guidelines for safeguarding good scientific practice in the Helmholtz centre for environmental research GmbH-UFZ; 2014.
(https://www.ufz.de/export/data/2/97129_Guidelines_for_Safeguarding_Good_Scientific_Practice_at_the_UFZ.pdf)