POLICY ON RESEARCH INTEGRITY AND RESPONSIBLE CONDUCT OF RESEARCH

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Table of Contents

1) Object

Research integrity means adhering to ethical principles and professional standards that define the responsible conduct of research. Research integrity pertains to all aspects of the research, ranging from planning, execution, interpretation, and presentation of research to peer review and grant writing. International guidelines and recommendations to promote research integrity, specifically aimed at publicly funded research, have been developed:

- The Singapore Statement on Research Integrity (second World Conference on Research Integrity - 2010)
- The Montreal Statement on Research Integrity in Cross-Boundary Research Collaborations (third World Conference on Research Integrity - 2013)
- European-Code-of-Conduct-Revised-Edition-2023.pdf (allea.org) (2023)

Additional guidelines and documents on research integrity are available on the Italian National Research Council (CNR)' s webpage dedicated to research integrity (https://www.cnr.it/en/research-integrity).

According to these internationally recognised guidelines, high quality and ethical standards in research can exclusively be achieved through a conduct based on honesty, integrity, and professionalism of researchers. Fondazione Human Technopole (HT) endorses research integrity values in accordance with these international guidelines and fosters a culture aiming to support good research practices and prevent research misconduct. HT ensures that appropriate resources and skills are in place to maintain high standards of integrity and good management, as well as that the roles and responsibilities of all individuals involved in the research are clear.

Every scientist at HT must ensure that their behaviour follows the rules of good scientific practice and the HT Code of Ethics (see also the European Charter for Researchers, 2005). Depending on their area of responsibility, HT Faculty members must make efforts to ensure that the relevant legal provisions and practical rules are observed. Among others, the present Policy is going to be published on the trade union bulletin board of HT and must be conveyed to HT researchers by the HR Area at the earliest opportunity (e.g. during onboarding), mainly by providing them and confirming receipt when an employment, funding, scholarship, scientific visit or other relevant contract is signed.

2) Abbreviations, terms, definitions

2.1. Abbreviations

- Fondazione Human Technopole (HT)
- Head of Research Centre (HoRC)
- Head of Facility (HoF)
- Group Leader (GL)
- Human Resources (HR)
- General Data Protection Regulation (GDPR)
- Findable, Accessible, Interoperable and Reproducible data management (FAIR data management)
- Conflict of Interest (COI)
- Fabrication, falsification, plagiarism (FFP)
- Human Technopole Research Ethics Committee (HT-REC or REC)

2.2. Definitions

Research Integrity: principles and ethical values, deontological obligations and professional standards that constitute the basis of the responsible conduct of research.

Responsible conduct of research: the practice of performing scientific investigation and all science-related activities with integrity, being aware and applying established professional norms and ethical principles in the performance of these activities.

Integrity: consistent and uncompromised adherence to strong moral and ethical principles and values.

Honesty: commitment to the highest standards of accuracy and truth in planning, performing, and communicating science, as well as fairness in behaviour towards colleagues and society.

Transparency: openness when reporting research planning and methods/protocols applied, presenting results and conclusions, and disclosure of financial and other conflicts of interest that could compromise the trustworthiness of the research.

Open Science: transparent and accessible knowledge that is shared and developed through collaborative networks and that promotes rigour, accountability, and reproducibility of research.

Professionalism: commitment to develop and improve one's own knowledge and skills, ability to face and solve problems, reliability and accountability for one's thinking and actions,

and trust because of these, in accordance with the principles and values of integrity and honesty.

Accountability: taking responsibility for one's own work, recognising those of others, and accepting consequences for all actions and decisions made.

Good stewardship: responsible supervision of others, as well as usage and management of resources provided by others.

Professional courtesy: fair and respectful treatment of colleagues, staff, and students.

Research misconduct: fabrication, falsification, or plagiarism (FFP) in proposing, performing, or reviewing research, or in reporting research results.

HT Faculty: for the purpose of this Policy, HT scientific staff including the HT Director, Heads of Research Centre, Group Leaders, and Heads of Facility.

Whistleblower or Informant: for the purpose of this Policy, a person who in good faith makes an allegation of research misconduct.

Allegation: statement, made without formal proof, that research misconduct occurred.

Ombudsperson: leading academic-scientific personality, independent of and external to the Foundation, who listens to concerns, verifies allegations and acts as a reliable advisor whenever a case of research misconduct is suspected.

Respondent or Person concerned: for the purpose of this Policy, the person against whom an allegation of research misconduct is directed or who is the subject of a research misconduct proceeding.

3) Scope

This document defines the HT policy about research integrity and good research practice and applies to all HT research staff (Heads of Research Centres and Facilities – HoRCs and HoFs –, Group Leaders – GLs –, Postdocs, PhD students, postgraduate fellows, interns, technicians, associate/affiliate scientists, etc., as well as scientific visitors performing their research activities on HT premises) and professionals involved in HT research-related activities, irrespective of the source of their funding or area of research. Research in the biomedical area involving humans and/or animals (or any materials derived from them) should also refer to ethical issues. These are regulated according to dedicated policies.

4) Regulatory references

Internal References

- Organisational regulation
- Policy on “Conflict of Interest Applicable to HT Employees and Non-Employees, Other than Members of the Governing Bodies of HT”
- Policy on the management of internal reporting pursuant to legislative decree no. 24/2023 (whistleblowing)
- Code of Ethics
- Guidelines on “Supervision and Mentorship”
- Internal Rules on External Communications and Media Relations
- Policy on the Human Technopole Research Ethics Committee

External References

- General Data Protection Regulation (EU 2016/679)
- The Singapore Statement on Research Integrity (second World Conference on Research Integrity - 2010)
- The Montreal Statement on Research Integrity in Cross-Boundary Research Collaborations (third World Conference on Research Integrity - 2013)
- The European Code of Conduct for Research Integrity (2017)
- U.S. Department of Health & Human Services – The Office of Research Integrity (ORI)
- International Committee of Medical Journal Editors (ICMJE)
- Italian National Research Council - Research Integrity
- European Charter for Researchers (2005)
- Wilkinson MD, Dumontier M, et al. - The FAIR Guiding Principles for scientific data management and stewardship - Sci Data 2016, 15(3):160018

5) Principles of research integrity

According to the above international guidelines, research integrity is based on four pillars.

5.1. Honesty

It ensures the trustworthiness of research and is essential when reporting objectives and methods, collecting, and analysing data, interpreting, and presenting results, drawing conclusions, acknowledging the work of other researchers while writing a manuscript, a grant proposal or a review for a grant/research article, and communicating scientific results to the authorities and the public.

HT researchers shall be honest in respect of their actions in research, as well as in their responses to the actions of other researchers inside and outside HT. Plagiarism, deception, fabrication, or falsification of results are significant offences and researchers must promptly report cases of suspected misconduct responsibly and appropriately (see also sections 7 and 9 of this Policy). HT researchers must also honestly acknowledge the contributions to their work of previous publications.

5.2. Transparency

All phases of research should be transparent. This requires openness when planning and executing research, describing methods/protocols applied (including statistical analysis), presenting results, drawing conclusions, writing research manuscripts and grant applications and disclosing conflicts of interest when presenting research data, and submitting papers and grant applications (see also section 6.7).

While ensuring the confidentiality of the research data (particularly for research involving human participants) generated at its premises, HT encourages its researchers to share their work with peers, collaborators, and the public in a fair, equitable, and inclusive manner in accordance with the Open Science/Open Data principles to increase the rigour, accountability, and reproducibility of research. Data and materials from published research should be available, upon request, to other researchers (inside and outside HT) to promote their reuse and redistribution.

5.3. Accountability

HT and HT researchers accept responsibility for the research that they conduct and are accountable for the research carried out by acting supportively and sustainably. All authors on a given publication are responsible for the accuracy of what is published. HT researchers are accountable to the institute, its staff, as well as society and sponsors funding their research. Collaborating partners (inside and outside HT) should be accountable to each other, to funders and to stakeholders for the performance of their research.

5.4. Good stewardship and professional courtesy

HT senior research staff (Heads of Research Centre – HoRCs –, Group Leaders – GLs –, postdocs, technicians and scientific managers) creates a positive work environment where talent grows thanks to good mentoring and institutional support. They use and manage HT resources responsibly and ensure adherence to HT values and mission. HoRCs and GLs learn and develop strategies to best utilise the skills available in their teams and treat colleagues, staff, and students fairly and respectfully. HT senior research staff also promote professional interactions within the scientific community (inside and outside HT) and with members of the public and instil the principles of research integrity and good scientific practice into their team members.

6) Guidelines for responsible conduct of research

6.1. Research planning and conduct

HT researchers:

a) are responsible for planning and conducting their work. Study planning and data collection should be consistent with the best practices within their specific field of research;

b) must take the current status of research fully into account and acknowledge it. Relevant and suitable research questions can only be identified through a diligent search of research results that are already published;

c) shall ask for clearance from the HT Research Ethics Committee (HT-REC, see also the "Policy on the Human Technopole Research Ethics Committee" Rev.2 E) or approval from other relevant Ethics Committees or appropriate HT boards, whenever it is required;

d) must document their work by keeping records, logbooks and laboratory notebooks that are retained after publication of the work. The materials should be available for a period of at least 10 years (see also section 6.2) but HT strives to keep the data for long term in digital form. The use of laboratory notebooks is compulsory for all HT scientists (including scientific support staff, such as technicians and Facility personnel), who are responsible – together with their supervisors – for the proper storage and updating;

e) should not agree with third parties (e.g. funders or others) to limit access to their data and/or their ability to analyse and publish these data (unless these limitations are approved by the HT Director).

6.2. Data management (storage, accessibility, sharing, and transfer)

Data management, which includes - among others - individual-level data retainment, deposit and sharing as described below must be performed in compliance with the internal regulations concerning research data management and the General Data Protection Regulation (EU 2016/679 - GDPR) and should respect the principles of FAIR data management (findable, accessible, interoperable, and reproducible data – see also Wilkinson MD, Dumontier M, et al., Sci Data 2016).

HT researchers should retain, store, and manage primary materials and data in a clear and accurate form that allows the results to be assessed, the procedures to be retraced and the research to be reproduced inside and outside the institute. They are responsible for the proper management of primary materials (e.g., biological material, notes, interviews, texts and literature, digital raw data, recordings) and data (i.e., detailed records of the primary materials). Results must be confirmed within the research group before these are shared with other researchers inside and outside HT. Inconclusive results and analyses must also be documented.

HT is responsible for providing secure data storage facilities according to confidentiality requirements and applicable regulations and guidelines and allows access to the stored primary materials and data (unless this conflicts with contractual legal obligations or current regulations on ethical, confidentiality or privacy matters or intellectual property rights). Primary materials and data generated at HT belong to HT. When leaving the institute, also in the occasion of contract termination or end of their stay as a visitor, every scientist should comply with the relevant provisions of the Policy on HT Research Data Management (in preparation).

HT retains research data and related material for a minimum of 10 years after the study has been completed/published. Primary/raw data and related material from population health or clinical studies are also retained for 10 years to allow an appropriate follow-up period. The retention time can be extended for an additional 10 years upon approval by the relevant Ethics Committee. Retention periods beyond 10 years must be justified (e.g. research data from longitudinal studies that should be archived and managed accordingly). Data relating to studies which directly inform national policymaking should be considered for permanent preservation or deposited in a dedicated archive or repository.

Primary/raw data and related materials must be deposited in an appropriate repository depending on the type of data as prescribed by HT and/or published in referred journals. Transfer and/or disposal of data and primary materials must be documented.

Data collected in predominantly publicly financed research that are not made generally accessible via archives or repositories must be made available to principal investigators who are, in turn, mainly funded publicly for their own research projects, where this is possible and appropriate. This applies especially to primary data that would be difficult or impossible to substitute and if there is a significant public interest in independent research projects. In this context, it may be required that the source of the data and the persons having collected it be specified correctly according to the relevant discipline in an independent follow-up publication.

In individual cases, there can be reasons not to make the data publicly accessible. For example, the purpose of the scientist's own research must not be negatively impacted and there must be no justified concerns regarding potential misuse of the data. In any case, any legal requirements that conflict with any transfer of research data (e.g. preservation of intellectual property rights, data protection) take precedence.

In the case of research and cooperation projects involving several academic and non-academic institutions in which project partners resign or when individual scientists change research institutions and wish to use the data that they have generated for (their own) future research purposes at other premises, it is advisable to conclude documented agreements on rights of use for all project participants at the earliest opportunity. These agreements must specify that only project participants who have made a substantial contribution to the collection of the data or to its processing may use the data – and possibly take it with them upon signature of appropriate agreements with their new institution. This group of authorised persons should also specify as soon as possible whether, to what extent and at what point in time third parties may have access to the data within the framework of a research project according to the rules of accessibility of research data. If no such agreement exists, or if it requires interpretation, or if no agreement can be reached, the above rules shall apply in case of doubt. If several persons can claim the right to the data based on these criteria, they must all be considered entitled to continue using the data unless this would jeopardise the success of the research project for which the data were collected. If data can only be used in one single research project for compelling material reasons, it must be assumed, in case of doubt, that authorisation for their use lies with the project for which they were primarily collected.

6.3. Cooperation

HT ensures a research climate of cooperation, which fosters the exchange of ideas and skills development. HT researchers should not hinder the scientific progress of other HT staff members and should provide careful, disinterested, and unprejudiced assessment of

colleagues' work. They should be open to constructive criticism or doubts about their work expressed by HT colleagues as well as external researchers.

6.4. Mentorship, training and supervision (also refer to the Guidelines on "Supervision and Mentorship")

HT researchers develop and maintain the skills needed for their research and for supporting the personal development of their colleagues. HT organises courses on research integrity and good research practice that are compulsory for all its researchers and tailored according to their seniority (see also section 7). HoRCs and GLs provide directions, resources, training, mentoring and opportunities for the development and support of their teams, enabling them to conduct their work according to the guidelines of responsible conduct of research at the highest standard. Together with senior group members, they make sure that all staff understand and adopt good scientific practice at every stage of their career/research. HoRCs and senior GLs train junior scientists towards independence and must ensure they have a primary contact person. Undergraduate Intern e Postgraduate Fellow require closer support than PhD Students or postdocs. Regarding support of doctoral researchers, it is advisable to provide at least one other experienced scientist beyond the primary contact person. It is necessary to ensure adequate cooperation by the university where the PhD title is being obtained. All HT scientists shall be aware and keep up to date of good scientific practice and the consequences of research misconduct in regular training sessions. The HT Guidelines on "Supervision and Mentorship" must be applied.

6.5. Publication and communication

Research results financed predominantly by public funds should be disseminated widely and openly to maximise their reach and value. HT researchers should publish their findings in referred academic journals making use of the opportunities offered by open access publications and provide relevant stakeholders with a summary of their research.

Publications must adequately describe results and methods used and give full and correct credit for own and third-party preparatory or prior work. Previously published results supporting new findings should be appropriately cited and only be repeated to the extent necessary for understanding the context.

HT researchers are responsible for publications (including filed patent applications). All publications listing group/team members as authors must be approved by the respective HoRC/GL whether the HoRC/GLis an author (see also section 6.6 of this Policy). In case of dispute on authorship, the HoRC/GL and HT Director, after consultation with the Ombudsperson (see section 7.1), decide the appropriate course of action following good

scientific practice. If the HoRC/GL is directly involved in the dispute, the HT Director - in consultation with the Ombudsperson -decides how to proceed.

A publication may or must be withheld, especially when the results are not sufficiently robust (e.g. because the database is quantitatively or qualitatively insufficient, see also section 9.5). Sharing preliminary versions of scientific manuscripts that have not yet been peer-reviewed (preprints) or are still under evaluation (for example, refereed preprints) is possible - according to common practice in the given discipline - to make important information available even before final publication. The authors of a preliminary publication bear scientific responsibility for its content unless they express explicit and specific reservations immediately relating to the article.

The HT Communications area supports HT researchers in proactively engaging with the public and discussing the impact of their work on society (see also the Internal Rules on External Communications and Media Relations).

6.6. Authorship

Authorship confers credit to researchers and implies responsibility and accountability for the published work (in the case of research misconduct). Authors are always responsible for the content of a publication and must declare their contribution to it. According to the International Committee of Medical Journal Editors (ICMJE) recommendations (Defining the Role of Authors and Contributors), “authorship should be based on the following four criteria:

1) Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work; AND
2) Drafting the work or revising it critically for important intellectual content; AND
3) Final approval of the version to be published; AND
4) Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Those indicated as authors should meet all four criteria for authorship AND those who meet the four criteria should be identified as authors. Those who do not meet all four criteria should be acknowledged. The criteria are not intended for use as a means to disqualify colleagues from authorship who otherwise meet authorship criteria by denying them the opportunity to meet criterions 2) or 3). Therefore, all individuals who meet the first criterion should have the opportunity to participate in the review, drafting, and final approval of the manuscript”.

Mere suggestions, ideas or concepts which do not add an individual contribution to the publication do not constitute co-authorship. Any support from third parties that is scientifically relevant to the contents of a publication must be acknowledged in an appropriate section of the paper (i.e. the "Acknowledgements" section or footnote) by naming the person and the specific support provided. The nature of every author's contribution must be specified. If several persons are co-authors but responsible to a different extent or for certain parts of a publication, their responsibilities and accountability should be identified. If the sequence in which authors are named in the publication is determined based on scientifically relevant criteria, these must also be provided, to the extent that there are no generally recognised and commonly used practices in the given discipline. If such differentiations are missing, all co-authors jointly and unanimously accept scientific responsibility for the entire publication. Honorary authorships are not allowed.

6.7. Conflict of interest (refer to the Policy on "Conflict of Interest Applicable to HT Employees and Non-Employees, Other than Members of the Governing Bodies of HT")

All HT employees, regardless of hierarchy and their area of activity, will perform their tasks with scientific probity and personal integrity and resist enticement in self-serving private, commercial or political interests. Accordingly, HT scientists are also expected to prioritise HT's interests in the event of a conflict of interest (COI). In accordance with the COI policy in force, HT researchers must always declare any COI (scientific, personal, financial, etc.) concerning their own research or when acting as a peer reviewer for papers/grant proposals or as a member of a search committee. Usually, this will exclude the person with the COI from participating in the evaluation. COI must also be declared when reporting the results of HT-funded research at scientific meetings and conferences, in publications and during peer review.

Ancillary activities as a consultant can result in financial COI, especially if the principal desires a particular result but this cannot be achieved based on the objective data available. The same applies to influence through invitations, gifts or comparable benefits, which must be reported in accordance with the relevant provision of the Organizational Model pursuant to legislative decree 231/2001 (Special Section regarding the management of gifts, sponsorships and other donations). Non-financial COI can occur in the case of membership in scientific bodies, identification of authorships, scientific evaluations or the design of cooperation and licence agreements. To prevent such COI, research activities with relevance to industry require the partnership to be designed and practised on equal terms. In this context, economic aspects

must not take precedence over the freedom of research. If the scientific priority clashes irresolvably with economic priorities or the priority of patent law, scientific priority must in principle be put above all other considerations, even if this could mean that economic benefits are lost. HT or individual HT scientists should not establish links with industry merely for economic reasons and without the prospect of new findings.

6.8. Impartiality and confidentiality in the context of evaluations and consultations

Scientists who review manuscripts and funding applications and assess the qualifications of individuals are expected to act diligently, conscientiously, without bias, quickly and without self-interest. They are generally obligated to maintain strict confidentiality and must disclose all matters that could give rise to COI (see also section 6.7).

In particular, the following rules must be observed:

• evaluations of colleagues must be conducted diligently, without self-interest and bias,

• reviews of manuscripts must not be delayed,

• no biased appraisals to be drawn up as a favour,

• COI to be disclosed.

The obligation to maintain confidentiality and disclose COI also applies to employees in scientific advisory and decision-making bodies.

7) Research misconduct

According to the US Office of Research Integrity (ORI), research misconduct – or conduct that is inconsistent with accepted scientific standards – is defined as fabrication, falsification, or plagiarism (FFP) in proposing, performing, or reviewing research, or in reporting research results (see Appendix1 for FFP definitions). However, several types of research misconduct have been identified ranging from accidental or unconscious mistakes to deliberate fraud (described in Appendix 1). Honest errors or differences of opinion are not regarded as research misconduct. HT researchers at every stage of their career are encouraged to voice concerns and/or point out cases of potential research misconduct in a responsible manner to the designated Ombudsperson (see also section 7.1), without fear of retribution. Their identity will be kept confidential by HT (see also sections 7.2 and 9).

HT provides fair and objective procedures for examining and resolving complaints, disputes, and allegations of research misconduct (i.e. disclosure of possible research misconduct, see

section 9). HT guarantees confidentiality at each step of investigation for those who are not directly involved in misconduct to minimise damage to their reputation. HT provides training in research integrity and good scientific practice to help prevent research misconduct (see section 6.4) and asks for confirmation of attendance. Refresher courses that provide information on updates and refinements of good scientific practice may also be offered.

7.1. Ombudsperson

The Ombudsperson listens to the concerns, verifies the allegation, and acts as a trustworthy advisor every time there is suspicion of a violation of the principles of good scientific practice (see the HT Policy on General Operation, in preparation). They *i)* respect confidentiality and manage reports of alleged research misconduct in compliance with the whistleblowing policy in force, acting as assistant to the Director in the capacity of reporting channel manager for all the activities that follow the pre-screening evaluation of the reports concerned - among other things. The Ombudsperson is responsible for providing timely feedback to the Whistleblower (or Informant, see section 7.2 below) in compliance with the policy mentioned above; *ii)* is impartial, and *iii)* ensures fairness of procedure and transparency for all parties involved. The HT scientific leadership should support the Ombudsperson in their task by providing indications regarding the non-tolerance of research misconduct.

7.2. Whistleblowing related to research misconduct

Whistleblowers (or Informants) – who can make an allegation of research misconduct in good faith through the whistleblowing channel (see section 9.2) – will be guaranteed anonymity and protection by HT in accordance with the Policy on the management of internal reporting pursuant to legislative decree no. 24/2023 (whistleblowing). Whistleblowers should provide clear evidence or justified suspicion of research misconduct (in writing or an oral statement). If the allegations are provided in bad faith, with the intent to damage someone or without sufficient technical knowledge and know-how in the respective field to be able to make an informed opinion, appropriate disciplinary action can be taken.

Any misconduct reporting will be regulated and handled according to the Policy on the management of internal reporting pursuant to legislative decree no. 24/2023 (whistleblowing).

8) Questionable Research Practices

Questionable research practices (QRPs) are research practices that do not constitute "research misconduct" *per se* but fail to align with the core principles of research integrity and, as such, should be avoided.

QRPs include (among others):

- Constantly checking data for significance and stopping their collection immediately after they show a significant result
- Claiming to have predicted an unexpected finding

8.1. Predatory journal and predatory publishing

Predatory journals and publishers require article-processing charges without providing adequate editorial and publication practices, transparency, and ethical peer review. Given the uncertainties in identifying predatory journals and determining the intent of researchers to publish with them, publication in a predatory journal is often classified as a QRP. HT recommends that its research staff members publish their work exclusively in internationally refereed peer-reviewed scientific journals. HT regards intentional publishing in predatory journals, as well as intentional participation in predatory journal editorial boards, events and conferences, as research misconduct.

9) Handling allegations of research misconduct

9.1. General principles

The process of handling allegations of research misconduct is carried out in compliance with the whistleblowing policy in force and with the following principles: *i)* the identity of the Informant shall be kept separate from the records and documents produced whilst handling the report; *ii)* the identity of the Informant shall not be disclosed except in the cases foreseen by the whistleblowing policy and regulations in force; *iii)* the general rules on conflict of interest; *iv)* all persons involved in the process shall comply with the above principles and the provisions of this and the whistleblowing policy applicable to the activities performed.

9.2. Reporting and preliminary enquiry

1. In case of suspected research misconduct, the Informant must promptly contact the designated HT Ombudsperson, through the electronic whistleblowing channel that can be accessed via the dedicated section on the HT website

(https://humantechnopole.segnalazioni.net/en/). The reporting will then be handled in accordance with the Policy on the management of internal reporting pursuant to legislative decree no. 24/2023 (whistleblowing) and the provisions below. To the highest extent possible, all communications described hereinafter shall be made through the above-mentioned electronic whistleblowing channel. In compliance with the policy and through the mentioned electronic channel, the Informant can contact the Ombudsperson in writing or using the dedicated voice messaging system or by requesting a meeting with them.

2. If the Ombudsperson finds that there is no significant indication of research misconduct, they terminate the relevant activities and notify the Whistleblower according to the whistleblowing policy in force.

3. If the Ombudsperson finds that there is a significant indication of research misconduct, they inform the respective HoRC and HT Director (provided they are not directly involved in the allegation), and notifies the HT-Research Ethics Committee (HT-REC) (see also the Policy on the Human Technopole Research Ethics Committee). According to its advisory role, the HT-REC may provide a non-binding opinion to the Director.

4. The HT Director summons the **Preliminary Investigative Committee**, which may include internal and/or external members, including the following:

   - the HT Director;
   - the HoRC of the Research Centre concerned or a senior HT Faculty member in the research area concerned;
   - one senior HT faculty member outside the Research Centre/area concerned;
   - one external scientific advisor (nominated by the HT Director).

5. The Preliminary Investigative Committee starts the preliminary inquiry, which consists of an informal investigation aimed to clarify the facts. At this stage, communications and possible hearings between the Preliminary Investigative Committee and the Respondent, as well as any other persons involved, are informal.

6. The Ombudsperson may be involved to support the Preliminary Investigative Committee with subsequent decisions (see section 7.1) regardless of the decision to conduct a formal investigation.

7. If the Preliminary Investigation Committee finds that the suspicion of research misconduct is not sufficiently substantiated or has been disproven, it terminates the preliminary enquiry and sends a written report of the results (including the reasons behind the conclusion) to

the Ombudsperson, who takes the following steps according to the whistleblowing policy in force. The Preliminary Investigation Committee will inform the Respondent of the termination of the preliminary enquiry informally.

8. If the preliminary enquiry confirms the suspicion or provides strong evidence of research misconduct, the HT Director immediately informs in writing the HT-REC – which in turn nominates its representative within the Investigative Committee (see section 9.3) – and the respective HoRC and starts the formal investigation procedure (section 9.3).

9. The HT Directorate keeps a written record of the collected evidence, deliberations, results, and conclusions of the preliminary enquiry in a dedicated repository in accordance with the whistleblowing policy in force. The reasoning behind the conclusions should be indicated in the record.

10. The duration of the preliminary inquiry should be no longer than 60 days and, in any case, no longer than necessary.

9.3. Formal investigation

1. The HT Director can start a formal internal investigation without undue delay by summoning an **Investigative Committee** which may include internal and/or external members, including the following:

- a permanent Chairperson, nominated by the HT Director. The permanent Chairperson does not belong to HT and is expert in handling research integrity and research misconduct cases;
- the HT Director;
- one member of the HT-REC, nominated by the HT-REC;
- two HT senior Faculty members from different Research Centres or groups who are not involved in the investigation and are nominated by the HT Director;
- one external scientific advisor in the field of research related to the investigation, nominated by the HT Director and the permanent Chairperson;
- the HT Head of HR
- one representative of the HT Legal Department

To the extent necessary, additional persons outside HT with expertise in the area in question to join the Investigative Committee.

At this stage, the Investigative Committee can carry out hearing with the Respondent and any other person involved.

2. If the Investigative Committee finds that the suspicion of research misconduct is not sufficiently substantiated or has been disproven, it terminates the formal investigation and sends a written report of the results of the formal investigation (including the reasons behind the conclusion) to the Ombudsperson who takes the following steps according to the whistleblowing policy in force. The Investigative Committee will inform the Respondent of the termination of the formal investigation informally.
3. If the Investigative Committee deems the Respondent responsible for research misconduct, it writes a report of the results of the formal investigation (including the reasons behind the conclusion), and the HT Director starts without any due delay the disciplinary procedure (see section 9.4 below).
4. The duration of the formal investigation should be no longer than 90 days and, in any case, no longer than necessary.

9.4. Disciplinary procedure

1. The HT Director notifies the Respondent in writing about the misconduct with which they are charged. During all steps of the disciplinary procedure, the Respondent can be assisted and attend all meetings in the presence of a trade union representative.
2. The Respondent can submit a written or oral statement within a reasonable time limit (8 calendar days starting from the notice of the disciplinary procedure).
3. In case of a serious infraction, the HT Director may suspend the Respondent suspected of potential misconduct and exclude them from accessing the HT laboratories and/or facilities. In case of employees, the seriousness of infraction is determined in accordance with the national bargaining agreement.
4. Within 16 calendar days from the commencement of the disciplinary procedure, the HT Director notifies the Respondent of the disciplinary measure taken (see section 10).
5. The Respondent may appeal the decision in the manners provided by law and collective bargaining agreement.
6. In accordance with the whistleblowing policy in force, the HT Directorate keeps a written record of deliberation, results, and conclusions of the disciplinary procedure in a dedicated repository.

7. When appropriate, HT should take action to restore the reputation of the Respondent if they are found not guilty of research misconduct.

9.5. Withdrawal, retraction, and correction of scientific publications resulting from research misconduct

- Erroneous data due to research misconduct must be withdrawn if they have not yet been published.
- Erroneous data must be corrected in case they have been published (retraction, retraction and replacement, or *corrigendum*).
- Depending on the severity and the consequences of misconduct for third parties and funding bodies, HT may notify third persons who have been affected and inform the public.
- Collaborators and funding agencies must be notified in writing.

10) Penalties

Penalties are imposed pursuant to the provisions under the present section 10 and the applicable collective bargaining agreements. In any event, penalties must be determined considering the principles of proportionality and appropriateness with respect to the related misconduct.

The following elements will be taken into account in that regard:

- the Respondent's contribution to the investigation or any steps taken to remedy the harm caused.
- the subjective nature of the behaviour (intentional nature of conduct, degree of negligence);
- seriousness of the misconduct committed;
- responsibilities associated with the work position held;
- consequences and potential damage for HT and third parties;
- existence of any aggravating circumstances, including relapse;
- involvement of accomplices.

Penalties that can be inflicted shall comply:

- for employees, with the "Workers' Statute" ("Statuto dei Lavoratori", l. 300/1970) and applicable National Collective Bargaining Agreements, as applicable;
- for researchers other than employees (e.g. PhD students, collaborators, scientific visitors, etc.) with the provisions under the agreements governing the relevant relationship with HT.

In any event, application of penalties is deemed without prejudice to HT's right to claim compensation for damages from the liable party.

Penalties applicable to HT's employees include:

- oral or written notice;
- fine of the amount prescribed by the applicable National Collective Bargaining Agreement;
- suspension from work and pay in accordance with the applicable National Collective Bargaining Agreement;
- dismissal with/without notice.

Penalties applicable to researchers other than employees include:

- warning to comply with the provisions of this policy;
- termination of the relationship with HT in accordance with the laws.

Appendix

Appendix 1: Types of research misconduct

Type of misconduct	Description
Types of Core Research Misconduct (FFP)	
Fabrication	Fabrication of data and results that have not been obtained experimentally.
Falsification	Manipulation of data, material, and equipment; addition or omission of data or results; presentation of results that do not represent the complete experimental research record.
Plagiarism	Appropriation and usage of ideas, methods, data, results, and words without giving appropriate credit to its author(s) and without enclosing the source text in quotation marks when using verbatim text. Reusing one's own work without mentioning it (i.e., self-plagiarism) is also a form of plagiarism.
FFP-related misconduct	
Research bias	Bias in planning, collecting, analysing, and presenting results to fit a particular hypothesis. Ignoring outliers and missing data, selective exclusion of data, lack of appropriate controls and (technical/biological) replicates and reporting post-hoc analyses without declaring them.
Sample mislabelling or swapping	Improper labelling of samples in plots, graphs, schemata, and figures.
Beautification	Aesthetic manipulation of data to obtain more beautiful figures for publications/grant applications/presentations.
Manipulation of electronic data records	Manipulation or misrepresentation of electronic data records (files, electronic laboratory notebooks – ELN –, images, *etc.*).

Paper mill submission	Submission of research manuscripts that have been generated by companies (paper mills) producing and selling highly similar papers containing falsified or fabricated data and stock images.
Unauthorised exploitation of intellectual property or other third-party scientific achievements	Usage – in full or in part – of contents, research ideas and approaches without authorisation, identification, and clear and comprehensive references.
Data-related Misconduct	
GDPR compliance failure	Failure to demonstrate appropriate actions to comply with GDPR.
Withholding data and/or research materials	Withholding primary data and materials from the scientific community.
Research practice misconduct	
Failure to comply with legislative and regulatory requirements	Intentional violations of rules concerning the safe use of chemicals, care of human and animal test subjects, inappropriate use of investigative drugs or equipment, and inappropriate use of research funds.
Failure to support validation of research	Failure to supply primary data or material(s) to validate research through a replication study.
Sabotage of research work	Damage, manipulation or destruction of experimental documents, equipment, hardware/software, and chemicals required by another researcher for carrying out an experiment.
Misuse of confidential information	Usage or dissemination of information obtained through confidential review of manuscripts and grant proposals and/or participation in scientific meetings.
Failure to consider ethical issues	Conducting research in humans and/or animals without considering ethical issues or without ethical clearance

Failure to gain approval for the research proposal from an Ethics Committee	Failing to gain clearance for the research proposal from an Ethics Committee
Making false research misconduct allegations	Provide misconduct allegations in bad faith with the intent to damage someone.
Publication-related misconduct	
Peer-review abuse	Non-disclosure of COI, unfair holding up of a competitor's publication.
Duplicate, redundant, and salami publications	Publication of two identical articles, two rather similar articles, and two or more articles from a single study, respectively.
False statement concerning publications	Incorrect statements concerning work accepted for publication (e.g., incorrect date of publication, volume, issue number, *etc.*)
Impropriety of authorship	Claiming undeserved authorship on one's own behalf, excluding material contributors from co-authorship, including non-contributors as authors, or submitting multi-author papers to journals without the consensus of all named authors.
Improper citation	Inappropriate citation of scientific literature and sources
Financial and other misconduct	
Improper use of research funds	Misuse of research funds for unauthorised purchases or personal gain.
Undeclared COI	Failure to disclose any possible conflicts before publishing a paper or presenting scientific results.