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1. Introduction

The University of Vigo has among its aims the promotion and development of scientific, technical, humanistic and artistic research as a means for the progress of the community and support of the social transfer of knowledge.

The priority aims of the institution are

- The achievement of the highest levels of teaching and research quality
- The promotion of the acquisition of new knowledge and the subsequent transfer to society, both in terms of basic and applied research
- The adoption of a model of sustainable development based on concern for and conservation of the environment.

Research will be carried out within the limits established in legal precepts, among which are those derived from the ethical commitments assumed by the scientific community and the professional rules of ethics.

The University of Vigo assumes the spirit of the UNESCO's Declaration on Science and the Use of Scientific Knowledge, especially regarding the need for the practice of scientific research and its results should always be aimed at achieving the welfare of humanity, respecting the dignity and rights of human beings and the environment.

The University of Vigo also agrees with this Declaration on the need to adopt appropriate measures in relation to the ethical aspects of scientific practice and the use of scientific knowledge and its applications.

The university is also adhered to the "European Charter and Code for Researchers", which includes the "European Charter for Researchers", a set of general principles and requirements that specify the functions, responsibilities and rights of the research staff and the code of conduct for the recruitment of the research staff.

2. Scope and objectives

It is essential to provide the research staff with a set of guidelines and principles that guarantee honesty, rigor, responsibility and transparency in their research activity, paying special attention to the fact that the research trainees acquire these good scientific practices from the early stages of their careers.

In fact, these guidelines must be extended to the university community as a whole, so that they will be applicable to the entire staff of the University of Vigo (scientific, technical, administrative, adviser and manager) including research trainees and, as far as possible, the entities invested by the university.

The Guide of Good Practices in research of the University of Vigo includes a set of

commitments and recommendations that will work as a guide for the research staff to carry out their activity according to ethical criteria and current legal regulations.

For practical purposes, it constitutes an instrument of self-regulation that complements the legislation in force and that will bring about a quality investigation, avoiding behaviors lacking in integrity

The content of this guide of good practices in research will be reviewed periodically to adapt it to the updated uses and current regulations.

3. Basic principles.

The research staff will abide by the ethical rules generally accepted by the scientific community. In particular, the following values must be present in all phases of the research activity, from the initial formulation to the publication and dissemination of the results

a. Freedom.

The University of Vigo bases its action on the principles of academic, research and study freedom, interdisciplinary nature, ideological pluralism and participation. The freedom of investigation implies the choice of the lines or projects, and the design of the research methodology, the selection of the objectives and the dissemination of the results obtained in the research work.

This freedom is limited by current legislation and by the ethical principles shared by the scientific community.

b. Honesty

Researchers must be honest in their research activities but also towards other researchers in their work and with the institution itself.

The University of Vigo embraces the commitment of the scientific community to denounce and fight against fraud. Consequently, the research staff must notify the university authorities (the Rector, who will implement the appropriate measures) any case of fraud that comes to their knowledge. In addition, the research staff has the obligation to:

- Do not falsify or manipulate data
- Do not invent discoveries
- Do not duplicate publications (with the exception of publishing reviews)
- Do not violate research protocols, especially in cases of research with humans, animals or with repercussions on the environment
- Do not plagiarise the work of others

An important mechanism in the fight against fraud is the review of new contributions by experts or peers, and in the effort to make the data accessible to the rest of the scientific communication, in a reasonable period of time, so that the results can be contrasted, according to an "Open Science" approach.

The research staff must be especially scrupulous in respect of intellectual property, always making explicit mention of the research carried out by other researches.

c. Responsibility

The research staff is responsible for ensuring compliance with the ethical, legal and safety requirements established by the University of Vigo, and the funding entity if applicable. In the aspect of security, special attention will be paid to the indications and tools provided by the Risk Prevention Service of the University. In addition, projects with external financing, must be carried out following the provisions of the initial approved proposal, respecting the deadlines and allocating the funding to the objectives and activities planned.

Commitments of the research staff:

- Reflect in the reports the work actually done
- Use economic resources effectively and efficiently
- Comply with the conditions of dissemination, authorship and intellectual property indicated in the call.
- Collaborate with the management organ or service of the institution to ensure an adequate justification of the funds

d. Rigour

All research projects must have adequate funding for their development and the necessary authorizations when required..

Likewise, all research must be well formulated in writing in a document that indicates the background, objectives, methodology, work plan and human resources and materials intended.

A rigorous data collection and interpretation process is essential, and a detailed revision must be carried out before publication and, if significant errors are detected after publication, these should be publicly and explicitly rectified as soon as possible.

During the development of the projects it will be necessary to carry out a tracking to verify the correct execution and make the necessary modifications after the complete justification of the activities.

e. Conflicts of interest.

The OCDEⁱ defines the conflict of interests in the public sphere as:

Conflict between public duty and the private interest of civil servant, when the civil servant has, in a private capacity, interests which could unduly influence the proper exercise of his or her official duties and responsibilities.

In the university field, conflicts of interest focus, fundamentally, on the financing of research by private- law entities, in collaboration with companies, on advisory work, belonging to committees or bodies empowered to authorize, evaluate or finance projects, in management positions, and in personal convictions.

Research staff must avoid conflicts of interest that compromise their participation in the investigation and its results. It is necessary to avoid especially those commitments that involve the possibility of a personal benefit, an immediate family member or other people with whom one type of relationship is maintained, whether the benefit is economic or otherwise (professional, political, etc.).

In case of detecting any conflict of interest related to participation in a project, the research staff should immediately inform the Vice-Rectorate for Research, and refrain from participating in the project

It may also addressed to this Vice-Rectorate, which may submit it to the consideration or report of the appropriate body, to notify those cases where it has doubts about the existence or otherwise of a conflict of interest and to refrain from participating in the conflict until an answer is given.

It is important to mention that, when research staff act on behalf of the University of Vigo, they have an obligation not to compromise the image and credibility of the institution. In case of expressing personal opinions it is necessary to clarify unequivocally that what has been said does not necessarily reflect the views of the institution.

4. Research organization

a. Leadership and research groups

The complexity of the research today often involves working as a group. The research groups will have a lead researcher, who will be the person who holds the team's leadership and public representation. This person shall be responsible for:

- Communicating with the University of Vigo, as well as with the funding body, as appropriate.
- Promoting collaboration with other research teams of the institution itself or other entities.
- Ensuring strict compliance with the R&D&I project, contract or activity
- Recording and preserving the data, ensuring their confidentiality.
- Promoting an appropriate working environment to ensure the achievement of common research objectives. To achieve this, it will be essential to facilitate the training and development of the members of the research group as well as the exchange of knowledge
- Keeping the team informed of the project development

- Collaborating with research management bodies or services to ensure proper justification of funds, where appropriate.

The groups must have an organisational structure that indicates the responsibilities of each member regarding research activities. It will also be the responsibility of the lead investigator to make every effort to ensure that each member fulfils his or her obligations.

b. Mentoring and supervising of trainee research staff.

Students and trainee research staff should be properly supervised to ensure the quality of research and its results. On this matter, there will have a tutor responsible for their training process. The responsibilities of the mentoring staff are:

- Provide students/staff in training with the appropriate resources and a genuine scientific environment
- Ensure that the research is carried out in safe conditions, informing the students/trainee researchers about the safety rules and risk prevention measures and insisting that these are complied with.
- Disseminate the Guide of Good Practice in Research and promote the their acquisition
- Recognize the work of students/research staff in training
- Promote an appropriate working environment , encouraging the teamwork and the coexistence both in the group and in the work center.
- Avoid students/trainee researchers being involved in task that are outside their area of training, and to the extend possible, encourage their participation in projects with no commercial restrictions over the dissemination of results.

For their part, students/trainee research staff undertake to:

- Meet the conditions set out in their scholarship or contract
- Follow the instructions of the tutoring staff
- Recognize the contributions of supervisors and tutors in their oral and written results
- Implement, as far as possible, the Guide to Good Practice in its research practice
- Follow safety rules and procedures

5. Planning and development of research

a. Infrastructures and equipment

All installations must be adapted so that the planned research can be carried out, both in terms of the safety of the working people in them and the quality of the results obtained. Researchers must ensure that the equipment is adequate for the activities to be carried out and that the people who have to use it are suitably trained with adequate instructions for its use.

In the use of equipment and infrastructures it is necessary to follow criteria of responsibility, economy, efficiency, as well as standards of occupational safety and health and respect for the environment

Both the equipment and facilities must be prepared to ensure the validity of the results obtained.

When research involves the use of facilities and equipment that belong to someone else, prior approval by the person responsible for the center/equipment to be used shall be required.

b. Procedures and Methods

Any investigation must have a detailed working protocol, known as a research protocol, which must include the following information:

- Background
- Objectives
- Methodology
- Work plan and timetable
- Human and material resources
- Task allocation
- Budget
- Risk assessment
- Plan for the dissemination of the results

The research protocol will take into account ethical and legal aspects, and it has to be drafted in such a way that it can be examined and understood by any researcher in the field.

The Vice-Chancellor for Research may require such a protocol, so that the institution can have knowledge at all times of the research projects in process.

All procedures and methods included in the research protocol must be properly referenced and documented so that they can be further reviewed.

Those projects involving human research, use of personal data or biological samples of human origin, animal experimentation or use of biological agents, or genetically modified organisms must meet the requirements established by current legislationⁱⁱ and also have to be expressly authorized by the university's Ethics Commission or equivalent body.

c. Acquisition, recording, storage, custody and conservation of materials and data.

The data must be stored in such a way as to ensure their integrity, traceability and preservation. For that matter, research staff shall record all data and observations obtained from research activities in a systematic and sufficiently clear manner for third parties being able to review the work performed.

Records must identify the person who obtained the data and the date of their collection. The same applies to any modification of the data, that is, the person who made the correction and the date of such correction.

All members of the research group will have access to the data obtained and its interpretation, the person responsible for the investigation will be in charge of the record of access, storage and retention of the data.

As long as there are no restrictions arising from confidentiality or future marketing, it is recommended that the data and materials resulting from an investigation are, preferably publicly accessible and able to be shared by third parties.

Files containing information on persons shall be obtained and stored as established in Organic Law 15/1999 on the Protection of Personal Data.

All research data and results shall be kept for at least five years from the date of publication, except in cases where applicable rules allow a shorter period or require longer.

Necessary means for the proper preservation under safe conditions of the data and material resulting from the investigations should be taken in account. In cases of electronic storage, a specific plan for periodic backup and its physical location shall be established.

6. Dissemination of results, authorship, intellectual property and error correction

The dissemination of results is one of the main objectives of research at the university, as a contribution to increasing human knowledge and as part of the accountability process for the use of public means.

Failure to disseminate results or undue and unjustified delay in dissemination are considered as bad practices.

The publication of results in journals or other peer review media is one of the most widely used ways to achieve this end, but not the only one, it is necessary emphasize also oral communications in congresses and audiovisual materials among others.

To be considered as the author of a work, it will be necessary not only to make a substantial contribution in the collection of the data, but also in their interpretation and in the preparation of the resulting document, and present a detailed account of your personal contribution to the investigation. All authors of a publication must know and be responsible for the content of the final text. These criteria will be also applied to oral communications and other dissemination methods.

Concerning the order of the authors, the uses and customs in each field will be respected. For example, when the contribution of different authors is equivalent, the order of names can be alphabetical. In cases where contributions are different, it is common to first mention the person who made the greatest research effort and to last mention to the senior participant who led the work or holds ultimate responsibility according to the research protocol, while the other participating researchers may appear in order of contribution or alphabetical.

People with a significant contribution to the work, but without reaching the level of authorship, should be recognized in the acknowledgements section. All primary documentation (data collection notebooks, databases,...) and research results shall be the property of the university. Membership of the University of Vigo shall be

recorded in their published papers. Research staff from other bodies attached to the University of Vigo must also indicate this.

If any of the researchers involved in a project changes institutions, they may request from the university copy of part or all of the existing information (in physical or digital format) of their projects, provided that the specific clauses of the project or ongoing research do not prevent from it.

In publications, papers for conferences or other events, technical reports or reports to third parties, the research staff must indicate the relationship of members of the author group and to which entities or centers they belong to. In addition, the ethical committees or equivalent bodies which monitored their research protocols, and the origin of subsidies received, both public and private.

In the exchange of knowledge and technology transfer with private entities, the public interest must always prevail, making agreements with transparency. The protection of prior information and knowledge belonging to the University of Vigo should be ensured. The contractual documents shall comprehensively reflect the different interests, tasks and contributions of each party, avoiding, as far as possible, disproportionate confidentiality commitments and unjustified restrictions on the publication of the results obtained.

Results that are protected by their potential commercial interest should not be disclosed until the parties make the corresponding assessment. In any case, avoiding delays in disclosure in order to protect intellectual property. All intellectual property, technical knowledge and materials generated by the research staff at the University of Vigo facilities belong to of the entity. The same applies, except otherwise agreed, to visiting research staff using the facilities of the University of Vigo.

The presentation of the results to the media should always include a presentation of an informative nature aimed at a non specialized audience.

The University of Vigo supports open access to knowledgeⁱⁱⁱ initiatives that promote models of publication based on free access to scientific and academic production generated by research staff. The same standards of honesty, responsibility and rigour shall be required in open access publications as in any other type of publication.

If there is an error that degrades the value of the published results, the author must immediately discuss the matter with the person responsible for the research project, to notify the other participating research staff and publish an urgent correction, in media or publications at the same level. If there are serious errors it is necessary to take the entire publication back.

7. Safety, health and environment

Research staff shall have effective information and protection in the field of safety and health at work. They should be familiar with policies for the prevention of occupational hazards and environmental protection. To this end, it is important to note the role of the support and advice provided by the Occupational Risk Prevention Service of the University of Vigo. The Occupational Risk Prevention Service was established to ensure the safety and health of all persons working at the Uvigo facilities. Its activities include the planning of various

prevention activities, training and information on health and safety and the carrying out of safety inspections, among others.

Research groups shall ensure that their activities are carried out in accordance with these policies, so that research and development projects will have to comply in all their extremes with the provisions of the current legislation on the environment and occupational safety and health.

8. Peer evaluation

Peer or expert review is the method used in academic field to validate the quality and scientific rigour of publications.

Under this denomination is understood any commission of examination and criticism as an expert or comparable person , either in relation to a manuscript submitted for publication, a report for which an individual or collective grant is requested, a clinical or experimental protocol subject to review by an ethics committee or a report to be carried out on an in situ visit, among others.

The University of Vigo establishes and encourages its research staff to participate as an expert, for example in the following cases:

- Evaluation of public calls projects
- Acceptance of scientific publications
- Selection of candidates in the provision of places
- Evaluation of groups, departments or organizations research

Whenever a researcher acts as a reviewer or editor, he has to avoid conflicts of interest of any kind (personal, academic, commercial, etc.) In addition, his judgments and evaluations must be objective, clear and precise, duly substantiated and impartial, guided by scientific criteria and not by personal opinions or ideas. The evaluation process must be subject to strict conditions of confidentiality and the information accessed by this circumstance may not be used without the prior, specific and express authorization of the author.

ⁱ *La gestión de los conflictos de intereses en el servicio público. Líneas directrices de la OCDE y experiencias nacionales.* Ministerio de las Administraciones Públicas (Madrid, 2004)

ⁱⁱ Law 14/2007 on Biomedical Research and Organic Law 15/1999 on the Protection of Personal Data

ⁱⁱⁱ *Berlin Declaration on Open Access to Knowledge in Science and Humanities.* Max Planck Society and Max Planck Institute for History of Science