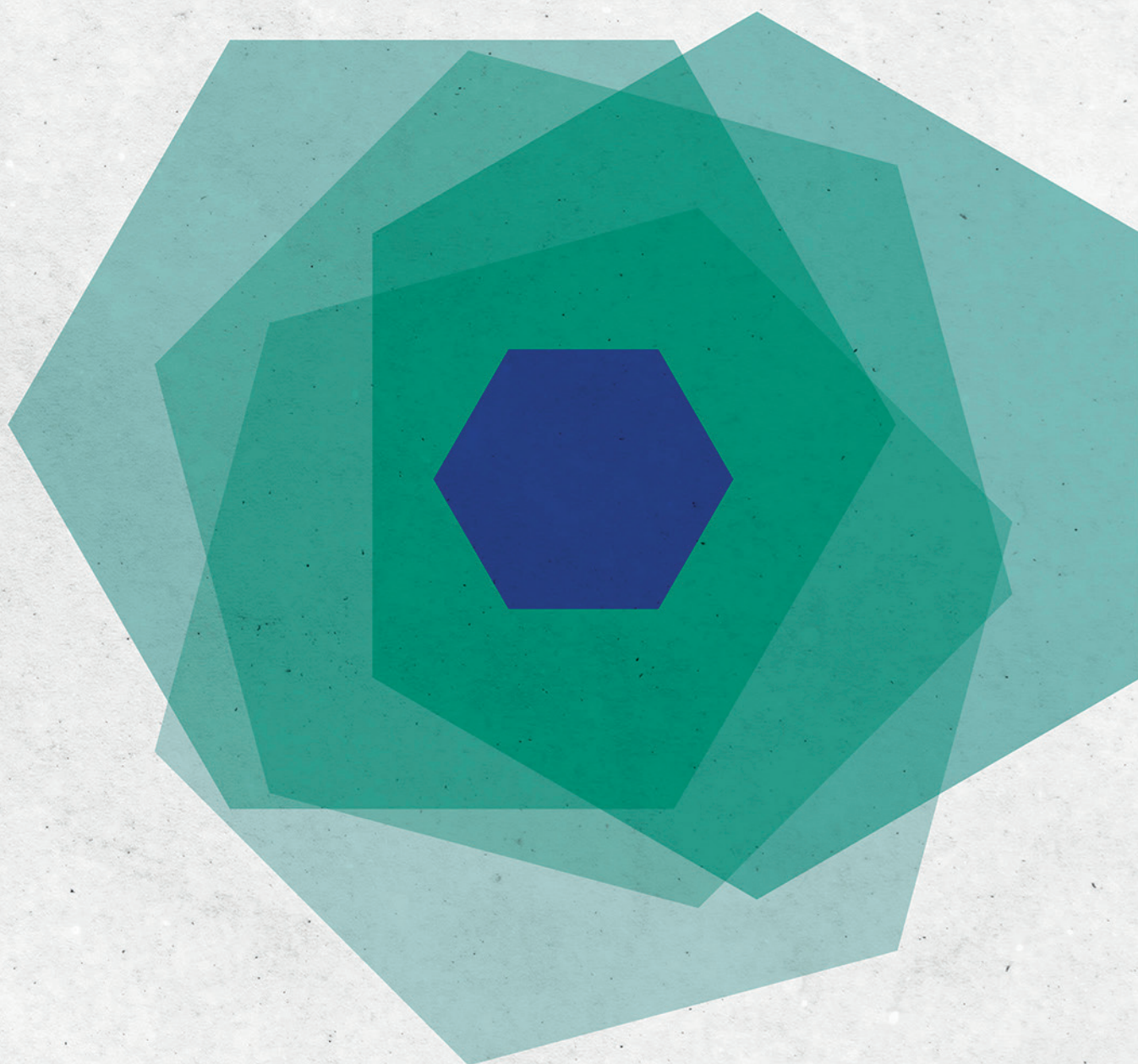

Code of Good Practice in Research

Universidade de
Santiago de Compostela





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Introduction

The University of Santiago de Compostela (USC) is a public institution that fulfils and performs its functions providing an essential public service to the community through education, teaching, research and knowledge transfer.

As per its Statutes, these aims include the creation, development, transfer and review of scientific, technical, artistic and humanistic knowledge, as well as granting qualifications to exercise the professional activities for which such knowledge is required. The university's objectives further include the dissemination of knowledge, its validation and transfer for the good of culture, quality of life and economic and social development.

The USC fosters the principles of democracy, freedom, equality, justice, pluralism, sustainability and ethical commitment. This means that university life and activities, including education and research, must be committed to the defence of peace and respect for human rights, health and safety and occupational risk prevention, the inclusion of people with disabilities, gender equality, sustainable development based on respect and environmental awareness and conservation, as well as the explicit rejection of research for military purposes.

Every member of the university community, in particular, its governing bodies are bound by these principles. For this reason and given the relevance and influence of science in society, the USC considers it necessary for scientific activity to be conducted according to good practice standards. It is clear that the advancement of scientific knowledge in all areas has contributed towards social and economic progress. As a result, society expects research staff to guarantee its full observance based on the basic regulations and ethical principles recognised and accepted internationally.

Guided by the *Human Resources Strategy for Researchers*, the USC has fostered the adoption of a Code of Good Practice in Research (CGPR), containing guidelines, principles and recommendations relevant to all types of research conducted in every scientific discipline in this university.

In February 2017, the aforementioned *Human Resources Strategy for Researchers* (HRS4R) of the USC was awarded with the “*HR Excellence in Research*” label by the European Union, through the EURAXESS-Researchers in Motion initiative, thus reinforcing the USC commitment to promote and nurture a stimulating and motivating environment for researchers within the university.

The code was written by the Technical Office responsible for the implementation of the HRS4R, and reviewed by Bioethics Committee of the USC, following the guidelines described in the document *Recommendations of the Spanish Bioethics Committee for the impulse and implementation of Good Scientific Practice in Spain*. It further accommodates the principles of the *Singapore Statement on Research Integrity*, the *European Charter for Researchers* and the *European Code of Conduct for Research Integrity*, as well as the Codes of Good Scientific Practice from other bodies and public institutions and the relevant laws and regulations thereof.

The USC Code of Good Practice in Research (CGPR) was approved by the Governing Council of the USC on 28th September 2018, at the request of the Research Committee commissioned by the Governing Council, following its approval in the meeting on the 3rd July 2018.





Objectives and Scope of this Code

Research integrity entails the staff's adherence to some basic ethos and professional standards for the responsible practice of research, based on rigour, honesty and observance of the regulations. Hence, it is a clear aspect of the moral quality of individuals. Rather than legal precepts, it involves a personal belief in these principles and practices, together with a strict commitment to intellectual honesty and personal responsibility for one's actions.

Good research practice is based on a set of fundamental principles of research integrity, guiding researchers in their work, as well as in their engagement with the practical, ethical and intellectual challenges implicit in research. Good Practice concerns the entire research process and findings and include aspects ranging from planning, conducting and monitoring research, to the communication, publication and dissemination of the results obtained and the likely use society might make of the knowledge generated.

The main objective of this Code of Good Practice in Research (CGPR) is to explain what responsibility means when conducting research, and, at the same time, to help the scientific community establish a general framework for self-regulation.

The CGPR describes professional, legal and ethical duties and acknowledges the role and importance of the university as an institution where research is organised and conducted. Nonetheless, the CGPR must be considered as complementary to the existing legal precepts, and it contains a set of regulations, recommendations and pledges for researchers to follow. In this sense, it is valuable as a regulation inasmuch as it stems from various aspects that are accepted voluntarily both by researchers and anyone involved in research and the institution where research is conducted.

Given that the USC must foster quality research leading to new knowledge and innovation delivery capacity, the adherence to the existing CGPR and its full compliance by the members of this university has a direct impact on further excellence in research. Moreover, it allows for the creation of mechanisms to guarantee rigour, honesty and integrity in research, and finally, it enables trainee researchers to be taught good scientific practice.



01.

Basic Ethical Research Principles in the University of Santiago de Compostela (USC)

◆ Research Freedom

The principle of research freedom, as per the USC statutes, refers to the right to the free application of research methods, the choice of objectives deemed suitable by the author and the dissemination of the results obtained in the research, after they are protected, where applicable. However, freedom is also ruled by a set of ethical principles based on the statutes and Ethical Code of the USC, internationally accepted agreements and declarations as well as the legal precepts regulating research practice.

◆ Commitment, Rigour, Honesty and Integrity (Conflicts of Interests)

Wherever it is conducted, research must abide by the highest standards of rigour and integrity. This implies:

- ◆ Every scientific work must be conducted with competence and attention to detail, for which researchers –in particular, the heads of research teams– must update their skills and help others acquire them.
- ◆ Taking the necessary steps to avoid corrupted practices and misconduct, revealing any foreseeable conflicts of interest, if that is the case.
- ◆ Acknowledging that research might affect the work other individuals and respect the rights and reputation of other researchers.

Commitment

The staff involved in teaching and research activities at the USC commits to the active participation in research and innovation, a defining and foremost aspect in the academic world, as well as to the pursuit of sustainable development, quality of life and social welfare.



Rigour

Researchers must strictly apply the scientific method, whichever their subject area, and therefore, follow a rigorous process when gathering and interpreting data, and have their findings thoroughly reviewed prior to publication. Should any errors be detected in their published material, they must be rectified in a timely manner.

Honesty

Researchers must be honest in their own research activities and also with the work of other researchers and the institution itself. Reliability and responsibility when conducting research applies to the entire research work, including the initial formulation of the hypothesis, the design of the research method, the use of resources, data analysis, the publication of the results obtained, and the acknowledgment of the contribution of other colleagues and contributors. This is also applicable to any review and report activity commissioned to researchers as experts in any given area of study.

Likewise, researchers must respect industrial and intellectual property rights and abstain from plagiarism or manipulating results.

Conflicts of Interests

The term conflict of interests typically refers to a situation in which professional judgement or subsequent actions concerning a primary interest are unduly influenced by a secondary interest (most often financial gain or personal growth). In other words, a conflict occurs when two or more competing interests arise from the activity of an individual (or an institution). It refers to the specific situation rather than the the behaviour or omission of an individual. Therefore, conflicts of interests are not intrinsically unethical, but it

is imperative for the researcher to be able to identify them when they occurs and handle the situation accordingly.

When conducting research activity, conflicts of interests occur when an individual has special interests (personal, professional or financial) which may lead to personal benefits (real or not) jeopardising the integrity and validity of the research or activity.

Therefore, every time researchers are confronted with a situation of this nature, they must report it to their institution, any organ funding their research, or whoever commissioned them with the work, including the publishers of scientific journals when they are asked to review scientific papers.

Respect

Researchers must observe the principle of respect for life, public property and the law. In other words, they must guarantee that the subjects of study (people, animals, plants, the environment in the broadest sense or cultural heritage) are treated appropriately and according to any existing legal precepts. Therefore, researchers must:

- Ensure that their work is legal and justified.
- Minimise and justify any harmful effect their work may have on people, animals, the environment and the heritage.

Responsibility

Researchers must be responsible for their own work from the initial proposal to the publication of their findings, including design and procedures, teaching, mentoring and tutoring trainees, as well as the impact their findings might have.

Researchers must guarantee their research is duly conducted in compliance with any ethical, legal or health and safety regulation, according to the terms and conditions defined by the relevant funding body or agreed between the USC and the funding bodies.

Therefore, it is necessary to ensure that:

- Research is carried out in compliance with any criteria for economic and environmental sustainability, respecting people and focusing on gender perspective.
- Research is carried out in accordance with the original proposal submitted to the funding body, except when specific changes have been mutually agreed.
- Funding can only be used for the planned research objectives, except when alternative expenses are duly authorised.
- Scientific-technical or financial reports describe the exact work carried out, and are submitted within the deadline.
- The conditions related to publication, authorship and intellectual property abide by ethical principles and legal precepts, and authors are acknowledged.

02.

Research Structure in the Universidade de Santiago de Compostela (USC)

◆ Research Groups

Research normally involves teamwork, as well as the use of shared methods, human resources and facilities, all of them organised as research projects or programmes.

For this reason, and according to the USC Statutes, research is structured around research groups, notwithstanding it being conducted individually. A research group is a research unit with lines of research and scientific objectives in common, and it is composed of members of the teaching and research staff (PDI in Spanish) and post-graduate researchers employed by the university. Overall, they are all fully-qualified to conduct research. Research groups may also include trainees and support and technical staff, coordinated by a head of research who is in charge of the entire group.

Research groups must have an organisational structure which allows for members to be responsible for their own work and enables communication among them. It is therefore recommended for members of research groups to participate in the activities organised by the group.

In particular, when involved in a research project, all members of a research group –within their assigned role– must abide by this commitment and reject any initiative that may jeopardise the way in which they correctly conduct their research.

Research groups must also ensure their work is carried out in accordance with the USC occupational risk prevention and environmental protection policies. Therefore, all members of a research group must know and abide by any regulation concerning health and safety, occupational risks and environmental protection, accept these duties and use the resources, facilities and services of the USC appropriately.



◆ Leadership

According to the USC regulations, research groups must have a head of research who can represent the group in public and communicate on its behalf, as well as organise and coordinate the group's work, ensuring adherence to good practice in research throughout the entire process.

As a member of a research group, these researchers will lead their corresponding research team, perform their own duties in relation to academic, and also administrative and organisational aspects, as well as contribute to the observance of good practice in research.

In their roles as leaders of research teams, both the head of the research group and its members must foster a work environment where individuals can learn and develop their skills and, at the same time, promote the exchange of ideas and knowledge in order to achieve shared research objectives. Likewise, coordinators must encourage the cooperation with other groups and research teams and the free exchange of ideas.

◆ Appraisals and Anti-Discrimination Measures

The USC Statutes include the obligation to follow access, appraisal and promotion procedures for the teaching and research staff, according to the criteria of openness and equal opportunities among candidates, and also to apply the principles of merit and competence contained in the prevailing legislation.

The USC further fosters an equal opportunity policy and is against any type of discrimination, whether related to gender, race, religion, ideology, disability or any other personal or social condition or circumstance. This extends to:

- ◆ Access to educational and training activities subject to the conditions established by the USC.

- ◆ Recruitment processes and the bodies thereof responsible.
- ◆ Access to activities and recruitment calls.
- ◆ Access to leadership positions and posts of high responsibility.

◆ Supervision of Trainee Research Staff

Every trainee researcher must be properly supervised so as to guarantee the quality of the results obtained. In order to achieve this, their training must not be limited to learning the necessary tasks to conduct their research work, but should also include awareness of good scientific practice, team work and working harmoniously with others in their centre and in the USC. It is the duty of every researcher in charge of supervision to ensure this is achieved.

Anyone linked to the USC for their research training must be assigned a qualified researcher to act as their supervisor or tutor, who is responsible for their training process, considering the defined objectives and the timeframe for them to be achieved.

Duties of Course Directors or Tutors

- ◆ To interact personally and regularly with the trainee researchers under their supervision to oversee the tasks they are commissioned with and ensure they are performed.
- ◆ To teach trainee researchers that they must follow the CGPI and should be self-critical when assessing their own work.
- ◆ To conduct their own research in such a way that it sets an example for trainee researchers.
- ◆ To allow researchers access to the adequate resources and scientific environment, considering their training needs and avoiding unnecessary pressure.

- To ensure that the research is conducted under safe conditions, providing the trainee researcher with information regarding health and safety rules and occupational risk prevention measures, as well as insisting these are fully complied with.
- To offer trainee researchers all the relevant information in relation to the existing legal requirements that may affect their research activity.
- To introduce trainee researchers to discussion forums and scientific meetings and offer guidance for their future research career, as well as allowing them to participate in research projects, courses, seminars, internships, both home and abroad, etc.
- To acknowledge the work by trainee researchers and to be rigorous and fair with the authorship of publications and other means of disseminating their work.
- When the work of trainee researchers is highly significant or has special relevance, their authorship must be acknowledged and they must be provided with information regarding how to protect the findings of their research through intellectual and industrial property rights.
- To comply with any rules regarding the organisation and use of material resources, the equipment and the facilities of the centre where they conduct their research.
- To be familiar and comply with any health safety rules and procedures and abide by CGPR at all times.
- To actively participate in scientific activities, discussion forums, courses, seminars, etc., related to the progress of their work and training.
- To acknowledge the contribution of their course director and tutor in any oral or written dissemination of their research findings.
- To respect and value any organisational and administrative work related to their research activity.

Duties of Trainee Staff

- To be fully involved in the project assigned to them for their training with the commitment to achieve the objectives commissioned, dedicating the necessary time and resources based on their situation and dedication to the project.
- To respect and follow the advice and recommendations of their tutor and course director, as well as to regularly inform them of any possible initiatives of their own, the progress made in their findings and any difficulty they may encounter in their work.

03.

Research Design, Execution and Monitoring

◆ Research Design

Every research project must be drafted in a written document, also referred to as the research design. This document can coincide with the proposal submitted when applying for the necessary funding in a public call.

A research design must include all the information needed for the execution of the project. Such information must be clear and concise so it can be assessed and understood by any other researcher in the same subject area. Therefore, it is recommended for it to include the following sections: background information, specific objectives, the methodology to be used and the research team involved in the project. This document should also include a work plan with a calendar defining each of the planned stages of the research, and also contain the human resources to be dedicated in each of them, how tasks are to be assigned and the material resources anticipated. If possible, it should also include a financial cost assessment and the budget available. For some projects, it may be important to anticipate a deadlock, and, therefore, outline alternative solutions to achieve the original objectives. Finally, the research protocol must also anticipate how the results will be disseminated, considering any issue concerning authorship and the order in which authors will appear.

Any experiment and observation must be carefully designed with rigour and good judgement so as to optimise the resources available. Likewise, and particularly where the project includes human or animal experimentation, it is imperative to consider the statistical weight of the recommended study in order to avoid unnecessary tests.

Whenever a research protocol requires the use of equipment or facilities that are not reserved for the sole use of the research team, prior approval must

obtained from the head of the institution, centre or the person responsible for the facilities or equipment requested.

When it is anticipated that other groups may also be involved in the research project, particularly if they belong to other centres or institutions, it must be reflected in a written document specifying the terms and conditions regulating the joint collaboration.

Depending on the type of study, ethical and legal aspects may also need to be considered, as well as an assessment of the risks that may apply to how it is conducted. This is compulsory when the object of the research involves human beings and their data, when laboratory animals are manipulated or whenever the safety of human beings, the environment or the heritage may be at risk. In these cases and prior to execution, the research design must be submitted to the Regional Research Ethics Committee of Galicia (CAEIG in Spanish) for its assessment, or, when necessary, to the Bioethics Committee of the USC.

● Research Monitoring and Execution

A research project must be monitored continuously in order to verify all activities adjust to the initial design and, if necessary, allow for any necessary changes to be made in order to achieve the original objectives.

The methodologies used in a research project must come from reliable sources (reference methods, scientific journals, regulations, etc). When a research project involves the use of a new method, its development and validation must be part of the protocol and researchers must demonstrate its reliability with evidence.

All procedures and methods used in the research project must be adequately referenced and documented, on the one hand, to allow researchers to use the same version, and, on the other hand, to allow for

later reviews so as to verify how they were performed and that they can be duplicated.

● Use and Administration of Research Facilities

The facilities where research activities are to be conducted must be adapted so that they guarantee the safety of the people working in them and also the quality of the results obtained.

Where equipment is used in a project, researchers must ensure that it is adequate for the activities to be carried out and that the staff using it is suitably trained and has detailed instructions for its use. In the case of complex equipment, those instructions must be documented as procedures to ensure it is used correctly. Researchers must also guarantee the reliability of the equipment used and its instructions, for which they must undergo preventative maintenance to avoid malfunctioning.

● Research Involving Human Beings. Data Protection

When the research conducted involves activities with human beings, handling biological samples from humans or access to personal data, researchers must be especially careful with the legislation thereof, in particular the laws regulating biomedical research and data protection, the EU General Data Protection Regulation, as well as the Code of Ethics applicable to their discipline or subject area. For this type of projects, researchers must obtain authorisation and a favourable report from the Regional Research Ethics Committee of Galicia (CAEIG) or, where necessary, from the Bioethics Committee of the USC. In addition, researchers with access to personal data must comply with the USC Personal Data Protection Regulation and the limitations contained in its Security Document.

If research involves human beings, biological samples or personal data, there is a special need for diligence and researchers must obtain written consent from the people participating in the project (or their legal guardians, if that is the case). In order to do so, participants must be fully informed about the nature and duration of the project, the expected benefits (for the subject itself or other people), any inconvenience or possible risk, the methodology to be applied and the criteria to end the project.

In addition, researchers must explicitly undertake a confidentiality pledge on any piece of information that may transpire about the individuals participating in the project and that may affect their privacy or basic rights, as well as ensure research is conducted in accordance with the regulations on personal data protection. Where possible, personal data must be subject to a dissociation process so as to ensure those participating in the project are anonymous both while the research is being conducted and when the data obtained are later registered and recorded.

Finally, researchers must also commit not to pass data or biological samples to other projects, other research staff or third parties without the consent of the assignors or the relevant research ethics committee.

Where student participation in a project is anticipated, researchers must ensure their involvement is free and voluntary, and take the necessary measures to avoid adverse consequences for those who decide not to take part in the project or withdraw from it.

◆ Research Involving Animal Experimentation

Researchers participating in activities involving animal experimentation must be trained and have the corresponding licence as a researcher or experimenter, certifying they can perform these functions

in accordance with what is established in national and European regulations. In addition, researchers must obtain a favourable report from the Bioethics Committee of the USC for each experimental procedure or project involving animal experimentation.

Where possible, these projects are typically subject to the Principle of the Three Rs, meaning the *Replacement* of methods by others that avoid or replace the use of animals, the *Reduction* of the number of animals to the fewest with methods that enable researchers to obtain valid results and the *Refinement* of experimental methods in order to minimise any adverse effects and enhance animal welfare.

It should also be noted that as per the *Institutional Statement on the Use of Research Animals*, the USC adhered to the "*Transparency Agreement on the Use of Animals in Scientific Experimentation*", promoted by the Spanish Federation of Scientific Societies (CO-SCE) together with the European Animal Research Association (EARA), on 20th September 2016. This agreement provides research centres with four commitments to improve the information disclosed to the general public. These are the following ones:

- ◆ Speak with clarity about when, how and why animals are used in investigation.
- ◆ Provide adequate information to the media and the general public about the conditions under which research using animals is conducted and the results obtained from them.
- ◆ Develop initiatives that generate greater knowledge and understanding in society about the use of animals in scientific research.
- ◆ Report annually on progress and share experiences.

◆ Research Involving Natural Spaces and Cultural Heritage

Research activities conducted using or within natural spaces, environmental settings or heritage sites (natural, historical, archaeological, etc.) oblige researchers to take special care and always do their utmost to make their own research tasks compatible with the maintenance, conservation and sustainable development of such spaces. Overall, these activities must be carried out in accordance with the rules and existing legislation for each geographical area, region or country, and local communities must always be respected. They must further comply with the conclusions and recommendations of the UNESCO Convention concerning the Protection of World Cultural and Natural Heritage (Paris, 1972).

◆ Occupational Risk Prevention and Environmental Health

Researchers must know all the measures related to occupational risk prevention and environmental health applicable to their field of research. In order to ensure the regulations establishing the duty to apply occupational risks prevention are complied with, the USC has drawn up an *Occupational Risk Prevention Plan*, covering all the duties in this respect.

All the centres in the USC have their own assessment of occupational risk prevention related to their work, however, when the risk assessment does not cover the activity of a research project or the work conditions for it to take place in any given centre, the head of the research project must report this to the Risk Prevention Service so they can be provided with recommendations and technical support in occupational risk prevention. In addition, the head of a research project must ensure that the rest of the research team is fully familiar and complies with their duties thereof, and report any accidents that may place the

staff or the environment at risk, as well as follow the protocols for containment and decontamination to minimise the risk of exposure to a hazard.

The use of potentially hazardous procedures and materials must be undertaken in accordance with the regulations and good practice guides in order to guarantee the safety of the research staff, as well as the rest of the university community. It must also anticipate the need to undergo a risk assessment by the USC Risk Prevention Service in advance.

In particular, research activities involving genetically modified organisms (GMOs) or biological agents must comply with all existing precepts regulating the subject and the facilities used for these activities must be approved by the corresponding authority in Galicia.

In addition, researchers must obtain a favourable report from the Bioethics Committee of the USC for each experimental procedure or project involving genetically-modified organisms (GMOs) or biological agents.

04.

Recording, Documentation, Storage, Safekeeping and Shared Use of the Research Data and Material

The recording, storage and custody of data and material deriving from a research project is the responsibility of the project leader and must be undertaken according to the applicable regulation and the criteria therein specified.

However, the USC fosters the principles of Open Research, also known as *Open Science*, which encourages public access to the results of research subject to the terms legally established, both for scientific journals and the data obtained through experimentation, especially when their project is financed with public funds. For this reason, researchers must take the appropriate measures regarding how research material and data are handled, ensuring the following:

- Correct handling and safekeeping of data concerning the results obtained, including unpublished material, guaranteeing its safekeeping for a reasonable period of time.
- That access to this data is as open as possible and as locked as necessary (open by default) and, where appropriate, it must follow the FAIR (*Findable, Accessible, Interoperable, Reusable*) principles of scientific data handling and administration, i.e., they must be discoverable, accessible and downloadable through search engines and they must also be reusable and described according to widely accepted open standards (interoperable).
- Transparency regarding how to access and use research data and material.
- Acknowledgments so that these data are considered legitimate research products and can be cited.
- Commitment so that any agreement includes fair clauses on the administration and ownership of the data obtained, which, according to the prevailing legislation belongs to the USC, and/or its

protection by means of industrial and intellectual property rights, or, where possible, *Creative Commons* licenses.

◆ Data Recording

As for data recording, all research staff must follow good practice, including:

- ◆ Recording all the data and observations obtained in their research activities (including the preliminary, negative, unexpected or conflicting results) permanently and with sufficient clarity so as to allow third parties to reproduce the work carried out.
- ◆ The records must identify the person who obtained the data and the date when the document was created. Likewise, any changes must include the date of the amendment and the name of the person who made it.
- ◆ The record must make it possible to demonstrate the work carried out and ensure traceability, which could be especially relevant for the protection of intellectual and industrial property of the results.

◆ Data and Material Storage

At all times the storage of materials should be carried out so that it guarantees their correct integrity, traceability and conservation for the period of time established. In order to achieve this:

- ◆ The material and samples obtained in research must be correctly identified and clearly specify the project it belongs to and, if necessary, be classified according to discipline-specific repositories, where these are available.
- ◆ The original research data (and where applicable, the relevant specimens, samples, original questionnaires, recordings and images, etc.) must be

stored in their original format, especially when they have been later modified or improved.

- ◆ When physical media are used for storage, for example, a notebook, the pages should be bound (not interchangeable or disposable), numbered and indexed.
- ◆ When data is stored digitally, it should be regularly backed-up in order to allow its retrieval, especially when the media and the standards are changed (which is why it is recommended to keep security copies of the main software used to process the data obtained).
- ◆ Where the storage conditions are critical (temperature, humidity, etc.), there must be the corresponding identification records.
- ◆ When it is necessary for researchers to obtain and use personal data, data collection and storage must comply with the existing regulations and guarantee confidentiality.

The USC or the centre where research is conducted must provide researchers and trainee researchers with enough supplies and the most appropriate media for data and material storage.

All data must be stored for a minimum period of five (5) years from the date of publication, although it is recommended to extend this period to ten (10) years, as per the European guidelines (except when the project call or the standard agreement establishes the need for a longer period).

◆ Data and Material Ownership. Access

All the primary data (collection notebook, databases, etc.) as well as material obtained during the research, for which the project leader is accountable, is the property of the centre where the work was conducted, in this case the USC. When a researcher moves

to another institution, the project leader may give him a photocopy of the data collection notebooks or part of the material available, provided that the researcher has been actively involved in the findings, always under the supervision of the centre or the department where the research takes place and with the permission of the USC. When it is the head of research the one changing institutions, this process must be carried out under the supervision of the directors of the centre or department where the research takes place.

In every project, all members of the research team must be able to access the information of the data obtained and their interpretation. In order to enable this, the head of research must hold a single record of the different elements in the data collection (notebooks, databases, etc.) as well as the samples held in their custody and the materials obtained.

When authorised, any exchange or transfer of data and material with other institutions must occur with the signed transfer agreement, unless these are public, in which case, existing regulations would apply. For the former, it is imperative to know in advance how the material is to be used, report it to the USC Service or Unit in charge of such process and follow the appropriate protocol, in particular where there may be limitations in terms of availability, competition or confidentiality.

Finally, it is not allowed to transfer personal data without their legitimate owners' previous consent in writing.

05.

Publication, Dissemination and Protection of Research Findings

◆ Dissemination Policy

Researchers have an ethical duty to disseminate their research findings, as these increase knowledge in general and researchers are accountable for the use of the public resources allocated to research.

As previously mentioned, the USC fosters the principles of Open Research (*Open Science*) which encourages researchers to make their findings available through *Open Access* or free access to information, in particular when their project is financed with public funds, subject to the terms legally established by the funding body.

Regardless of the main route of open access (green or gold) of the scientific production in research, it must meet the same criteria of honesty and rigour applicable to any other means of communication. In addition, the scientific production of the USC research staff must be added to the institutional repository MINERVA (this is compulsory when the results of the research are financed with public funds). At the same time, it is recommended that researchers protect their copyright through the intellectual property procedures applicable, even when publishing in institutional repositories, or when researchers choose to apply "Attribution-NonCommercial-ShareAlike" *Creative Commons* licences to their research work, thus allowing them to be downloaded and shared.

Publications

Publishing research findings, both in writing and orally, is a fundamental activity in any research project, as it is the only means for them to be shared and reviewed by the international scientific community. For this reason:

- ◆ Researchers must endeavour to publish their research findings and interpretations in a way such that they are as open, honest, transparent and



exact as possible. This also applies to conflicting or negative results that may refute the initial hypothesis as these are as valid as positive results.

- The fragmented publication of a report is only acceptable when this is due to its extension or to meet the requirements of the publishers.
- Researchers should not delay the dissemination of the results obtained, unless this is due to issues related to legal protection or when their research is conducted in collaboration with public or private bodies and the clauses in their contract require them to do so. However, this must be consistent with the aforementioned recommendations.
- When errors are detected in published articles, these should be acknowledged and publicly rectified in equivalent journals at the earliest opportunity. If the error is significant, it is recommended for researchers to retract the entire paper.

Institutional Credits and Acknowledgements

- All researchers must clearly state that they belong to the USC in their published work, as well as in any other means of dissemination (for example, conferences). If the staff works in other research centres (mixed institutes, hospitals, observatories, etc.), their attachment to the USC must also be clearly identified.
- The USC affiliation must comply with the university's instructions regarding the standardisation of institutional credits in any publication whose author is attached to the USC.
- Where relevant, all published research must explicitly include the independent committees that have supervised and approved the research design.

- The acknowledgements section must include the individuals and institutions that have collaborated in the research. In particular and when this is the case, the contribution of the USC support staff and services must also be acknowledged.
- Any substantial and direct subsidy, funding scholarship and sponsorship received to conduct research must be mentioned and acknowledged, unless declined by the awarding organisation.

Dissemination in the Media

Public dissemination in the media must always be responsible. This means that research findings and the interpretation of the results obtained must be communicated with honesty and clarity, as it is important to understand that this may have an impact in society in the broadest sense. Therefore, it should generally follow the same criteria recommended in other dissemination activities, such as reliability and sufficient scientific evidence.

The presentation of findings in the media must always include an informative explanation providing the general public with an appropriate level of knowledge or adapted to non-specialist audiences. In this type of public presentations, the authors' names must always be associated with their institutions and wherever possible, the subsidies and scholarships received should be mentioned.

It is not considered acceptable to communicate and disseminate preliminary results prior to review, nor should their relevance and practical application be overstated.

When disseminating scientific findings in the media, it is recommended to request the assistance of the USC press office.

Authorship

Current regulations establish that an author is whoever creates a literary, artistic or scientific piece of work. Such definition also provides authors with inalienable and undeniable moral rights.

Apart from the requirements established in the legislation, in order to be considered the author of a scientific publication, the researcher should meet the following criteria:

- To have made a substantial contribution to the project and its creative process, i.e., from its inception to its design or the data analysis and interpretation.
- To have made a "key contribution" to the project, writing the paper, preparing communications, reports or the resulting publications.
- To be able to present in detail their personal contribution to the research and discuss the main aspects of the research as a whole.

Every author in a publication must know and be responsible for its full content, unless otherwise specified.

The mere participation in obtaining resources, collecting data or samples or the provision of subjects for experimentation does not necessarily justify authorship, although this contribution ought to be mentioned in the acknowledgements section.

Anyone involved in a research group or research team who, as a result of their hierarchical position or job status, demands the position of *ex officio* author is infringing the principle of academic freedom. Conversely, the deliberate omission of the name of anyone who has made a proven contribution to the project based on the aforementioned criteria is an act of

misappropriation of intellectual property by the rest of the authors.

The order in which authors appear in the publication must follow the guidelines generally accepted in their subject area, and these must be known in advance by all researchers. However, it is common practice for scientific journals to list authors as follows:

- The first co-author is the person who has made the greatest effort in the research and prepared the first draft of the paper.
- The senior head of research who is ultimately responsible for the research design will appear last.
- The rest of co-authors may appear according to their contribution or, in some cases, in alphabetical order.

The author dealing with correspondence is the one with the main responsibility for the publishing process, as well as any future interactions that may derive from the publication of the work.

Finally, the publication of general proposals, working or technical reports or any other written document aimed at third parties must always include the list of researchers responsible for the project or inquiry, the centres where they conduct their work and the financial support received that may be relevant to such report, under the same terms and conditions as any other publication.

● Protection of Findings

According to its statutes, one of the aims of the USC is the dissemination, validation and transfer of knowledge, so as to contribute towards culture, quality of life and economic and social development. In addition, according to the legislation, the USC is the owner of the results obtained from the research

conducted by their teaching and research staff with its personal, material and knowledge resources. In particular, it retains the right to apply for the appropriate industrial property title deed for its legal protection and any commercial use rights deriving from intellectual property.

In order to achieve this, the USC fosters and encourages an adequate process to protect the ownership of research findings. Therefore, there is an intellectual and industrial property policy, subject to the prevailing legislation, which allows for findings to be assessed, protected, validated and commercialised effectively.

Thus, should the results obtained in the research be susceptible to protection due to their potential commercial interest, they should be protected in advance and cannot be disseminated until the corresponding services of the USC issue their assessment and analysis. This, however, should avoid unnecessary delays in publication and dissemination.

◆ Curriculum vitae

The *curriculum vitae* (CV) is the result of the research activity and under no circumstances should it be the purpose of the research.

The CV consists in a document detailing the individual's personal information (so as to comply with the data protection regulations when they are disseminated), qualifications and work experience. It is imperative for it to be truthful and clear, therefore only the individual is responsible for its content, which is why it is recommended for every page to be signed in whichever support used.

Teaching and research staff must actively follow the guidelines from the USC governing councils regarding disseminating and updating their CVs (for example, any contribution on ORCID) as the exposure of the research conducted in the USC is everyone's task.

06.

Research Funded by Public and Private Bodies. Intellectual Property Rights (IPR)

◆ USC Policy

The USC Statutes establish that research plays an essential role as a tool for the creation of new knowledge, a pillar of education, a means for the progress of the community and a medium for knowledge transfer to society. Hence, the USC supports research activities, development and innovation projects funded by companies and public and private bodies, provided that these activities are relevant to scientific, cultural and technological development and that they contribute towards scientific-technical objectives adequately.

For this reason and subject to the prevailing regulations and precepts, researchers must be committed to addressing the demand for knowledge or the collaborations explicitly forwarded to the USC by public or private bodies.

These collaborations should always be supervised and endorsed by the USC's corresponding services and units, through a contract agreement stipulating different clauses where all the rights and duties are specified, so the interests of both parties are respected, in accordance with the USC own regulation.

Any researcher involved in a research project in collaboration with other bodies or subject to an agreement must have the necessary knowledge and experience for the task requested. Besides, they must also protect any pre-existing information and knowledge belonging to the USC in the course of negotiations. Any agreement adopted between the applicant body and the staff in charge of conducting the research commissioned will be regulated by a written contract, contemplating the distribution of tasks and the contribution from each party. In addition, it will include the pledge to secrecy and confidentiality, the assignment of ownership of the results produced and, where relevant, the most effective



and appropriate means to protect findings and the conditions for commercial exploitation. Yet, the necessary limitations to protect the intellectual freedom of the researchers in the USC will be included so as to avoid disproportionate confidentiality agreements or unjustified restrictions regarding the dissemination of results.

The USC is the owner of the intellectual property rights of the results obtained in research activities, unless the contract clearly specifies that the USC transfers the rights of exploitation to the commissioning body. Ownership of industrial property rights must also be stipulated in the contract. In both cases, it will always respect the moral rights of the research staff who contributed to obtain the research results as far as their authorship and acknowledgement as the inventor, unless the work is limited to their ordinary professional activity.

Conflicts of interests are to be avoided both when negotiating work conditions and in the dissemination, protection and exploitation of the findings, with a special emphasis on guaranteeing freedom and the ethical principles of integrity in research.

Conversely, when the USC waives or transfers research findings to technological companies created as a result of the activity of a group within the university, there should be no conflicts of interest causing abuses in favour of any of the company's shareholders.

07.

Evaluation, Consultancy and Review Activities

Researchers often take part in activities related to the evaluation of projects, publications, groups or people. In such activities the following must be observed:

- The possibility of conflicts of interest deriving from the relationship between the assessor and the assessed or the competition. In these cases, researchers must decline the offer to conduct the assessment.
- An evaluation is confidential and the researcher in charge of it must remember this and never use their services for any other purpose unrelated to the evaluation itself. For collective evaluations, confidentiality extends to the internal deliberations of the committees, except for what is disclosed in the minutes.

These activities are typically known as peer review or scholarly refereeing.

● Peer Review

Peer review refers to a personal commission to the staff as experts or specialists in their subject area, to carry out an evaluation, examination or revision of a manuscript aimed at publication, a proposal to apply for individual or collective funding or an experimental procedure to be examined by an ethics committee.

Reviews must be objective and based on scientific criteria rather than personal opinions or ideas.

The review must be rejected where there are conflicts of interest (personal, academic, economic, etc.) or when the reviewer is not considered to be sufficiently qualified to accept the commission.

The contents of any document to be reviewed must be considered confidential privileged information. As a consequence, documents:



- Must not be used for the benefit of the reviewer until the information is in the public domain. If used then, it must include the appropriate citation.
- Must not be shared with anyone, unless it is strictly necessary and with the explicit permission of the author, publisher or research agency.
- If the above happens, manuscripts must not be withheld or copied with no previous consent. The most usual procedure consists in destroying or returning the material once the review process ends.

08.

Scientific Misconduct in Research. Resolution of Conflicts

Science, understood as the pursuit of knowledge, is inherently against fraud. However, misconduct is not unknown when individuals try to improve their reputation or achieve undeserved credit and, on occasions, academic or personal or institutional benefits.

These types of deviations cause great harm to the accepted good scientific practice and are ultimately the responsibility of the researcher resorting to them. Deviations from research practice broadly consist in fabrication, falsification or plagiarism in relation to a research proposal, its execution or the review or the dissemination of the results obtained from research. In this sense:

- Fabrication consists in inventing data or results, as well as recording or reporting them.
- Falsification consists in manipulating research material, equipment or processes, and changing or omitting data or results so that the research is not accurately and rigorously represented in the research records.
- Plagiarism consists in the appropriation of another person's documents or publications failing to acknowledge or credit their authorship.

Honest errors or differences of opinion are not considered research misconduct.

The mechanisms to avoid misconduct are, among others:

- Every new contribution to a research project should be subject to examination through peer review, as well as considering the possibility of having the results obtained confirmed by another independent researcher.
- The full commitment of the national and international scientific community to report and combat fraud.



- The coordination of all national and international agents involved in scientific research with regards to fraud oversight and systematic monitoring.

The USC is committed to guaranteeing that any misconduct allegation is handled with rigour and detail.

Anyone who has witnessed or is affected by alleged misconduct in research can report it to the USC Rectorate, which will process the allegation through the corresponding administrative and/or academic services of the USC. It is also contemplated for an *ex officio* inquiry to be opened when it is suspected that a misconduct activity or omission may occur in the course of a legal investigation. The information deriving from this procedure cannot be disclosed in order to guarantee that the rights of all the parties involved are respected.

Once scientific misconduct in research is fully verified, after it is reported or when there is prior knowledge of it, it is understood that legal action is to be taken in order to remedy the situation and, where necessary, the corresponding disciplinary procedure will be implemented.

Conversely, if individuals report false and malicious allegations of misconduct for their own benefit, disciplinary measures will be taken against them.

