Lesson 3: Research integrity and ethical conduct

<u>*Learning outcomes*</u>

LO#3 - The student should understand the research project lifecycle and the role of RMAs within it.

LO#10 - The students can discuss, formulate arguments and critically examine their beliefs in the context of real cases of scientific integrity, responsible research, ethical dilemmas that can emerge in the course of a research work project.

LO#12 - The student is open to perceive and accept the diversity of cultural and social context of research systems and practices.

Researchers are part of the society and as knowledge generated by research contributes to solve major societal problems, scientific integrity and ethics become a key aspect of the research activity. Therefore, research institutions and funding agencies have increased requirements and professional practices to reinforce trust in research. In this task of consolidating values and practices of research integrity every actor must be engaged:

> *It is essential that institutions foster a culture of integrity in which students and trainees, as well as senior researchers and administrators, have an understanding of and commitment to integrity in research.*

> *(*National Research Council (US) and Institute of Medicine (US) Committee on Assessing Integrity in Research Environments, 2002).

Ethics and Compliance

A major part of research is ethics and compliance. Ethics is the act of critically reflecting on the norms, conventions and the consequences of human actions and their beliefs in society (Briggle and Mitcham, 2012). Compliance means respecting the institutional rules and codes of conduct (i.e Regulations on Ethics and guidelines, Codes of conduct in Research).

The scientific activity presents many times challenges and dilemmas especially when the research work involves human or sentient beings. Therefore, it represents a horizontal activity within the research lifecycle, since the compliance with ethical guidelines in the phase of development of the project idea and data collection to compliance with specific regulations of funding agencies in the stage of project management. All actors involved within the research lifecycle should be aware and have access to ethics compliance principles:
- students and researchers should be provided with training and access to ethics guidance;
- RMAs staff working with research directly
- Supervisors and coordinators of research groups

- Deans, Directors and decision-making boards members.

Ethics through the research lifecycle

1. Planning research: research begins with developing the research problem and questions. At this stage ethical issues may arise, for example, conflict of interest and judging the value of research:
   a. *Conflict of interest* - any interest that undermines research involving financial gains; personal relationships or other relationships that can influence the research design, interpretation of data or dissemination research (Briggle and Mitcham, 2012).
   b. *Judging the value of research:* when analysing the value of the research ideia, the researchers need to consider if the research they are proposing follows the values of research integrity. Is the research really worth doing? Whose interests will it serve? Are there possible negative side effects? What are the justifications: making money, gaining notoriety, advancing theoretical understanding, developing applications, for military purposes, etc.? (Briggle and Mitcham, 2012).

2. Implementation: at the moment of conducting research new ethical dilemmas can arise. Briggle and Mitcham (2012) identify the following: (a) *objectivity, inferences, and data management*; (b) *bias and self-deception*, and (c) *trust*.

   a. *Objectivity, inferences, and data management* - researchers conduct their work based on observation and inferences from the interpretation of the data collected. It is important to maintain objectivity and ethical norms such as honesty; carefulness; accuracy and open-mindness.
   b. *Bias and self-deception* - the research inferences and interpretation of data can also be undermined by systematic biases or false assumptions. External review or verification is an important tool to identify existing biases in research. *Self-deception* stems from the exercise of wishful thinking and carelessness. Researchers must undertake a self-evaluation exercise of maintaining objectivity and accuracy to avoid deceptive assumptions.
   c. *Trust* - the research work is based on mutual trust between researchers and participants; stakeholders; funders and, public audiences. Researchers must ensure and build trust by conducting research following transparent norms and values, present in code of conduct and secure ethical screening.

3. Disseminating findings: disseminating and communicating research results is a key activity of research. Important aspects researchers must consider are the a) *peer review* and b) *authorship*.
   a. Peer review - is an important process that must be undertaken by the research throughout the research lifecycle but most importantly when publishing research findings. It allows us to eliminate existing biases, errors and deceptions.
   b. Authorship citing the work and providing the credits of other researchers and peers represent a key element of the ethics conduct.

The National Research Council (US) and Institute of Medicine (US) proposes as integrity practices in research:

- *Intellectual honesty in proposing, performing, and reporting research;*
- *Accuracy in representing contributions to research proposals and reports;*
- *fairness in peer review;*
- *collegiality in scientific interactions, including communications and sharing of resources;*
- *transparency in conflicts of interest or potential conflicts of interest;*
- *protection of human subjects in the conduct of research;*
- *humane care of animals in the conduct of research; and*
- *adherence to the mutual responsibilities between investigators and their research teams.*

Existing Codes of Conduct: EC Charter and Code of conduct for Researchers
Within the context of implementation of the European Research Area, the European Commission developed the Charter and Code for Researchers, in 2005, to promote the improvement of the conditions for research work and career development of researchers. The Code and Charter can be endorsed by the R&D institutions as a seal to attract researchers.

It defines a set of general principles and requirements which specifies the roles, responsibilities and entitlements of researchers as well as of employers and/or funders of researchers.

 Access the Charter here: https://euraxess.ec.europa.eu/jobs/charter/european-charter

Scientific misconduct: Falsification, fraud or plagiarism in conducting, reviewing, disseminating and reporting research

1. Fabrication - Making up data or results and recording or reporting them as factual results.
2. Falsification - Manipulating research materials, equipment, or processes, or changing or omitting data or results such that the research is not accurately represented in the research record.
3. Plagiarism - The appropriation of another person's ideas, processes, results, or words without giving appropriate credit, including those obtained through confidential review of others' research proposals and manuscripts.

Responsible Research and Innovation (RRI)
RRI is an initiative of the European Commission to promote the engagement and mutual responsibility of societal actors in research to correspond to the values, needs, and expectations of society. It includes 'cross-cutting issues' to reinforce the openness, transparency and societal engagement in research such as public engagement, open access, gender, ethics, science education in the Framework Programme for Research and Innovation of the European Commission, Horizon 2020. National funding agencies and research performing organizations have been implementing the RRI principles through research agendas.

Examples of RRI projects: https://rri-tools.eu, http://res-agora.eu/rri-resources/ and http://morri-project.eu/

Case studies of RRI:

- [Case Study 'Fracking in Austria' developed by the project ResAGORA](#)
- [Training Showcase: The Portuguese Sea and Atmosphere Institute: A case of stakeholder engagement in marine research developed by the project ResAgora](#)

RMAs role in Ethics and Compliance
Research Managers and Administrators are active actors in the research lifecycle supporting researchers in their daily activities:

Transversal to all activities:

- Processing research ethics applications, e.g. collect information from lead researcher, create and maintain electronic and/or paper files, assist researchers in completing consent forms and information sheets, collate applications and disseminate for review, disseminate, review and record committee/panel decisions, ensure all relevant paperwork is in place as appropriate (ARMA Professional Development Framework, 2011)

Grant Preparation:

- Raising awareness and providing 'up-to-date' information to comply with research ethics and governance requirements of the funding agencies;
- Providing the ethical resources for the researchers.

Contract negotiation:

- Monitoring regulatory/governance and ethics issues arising from the contract.

Reporting:

- Reporting and checking regulatory/governance and ethics issues.

At the institutional/governance level:

- Support the development of institutional strategies in relation to research ethics and governance;
- Maintain oversight of institutional research ethics and governance processes and systems;
- Producing FAQs for key areas (e.g. IP, ethics, liability, legislation, governance) and making them available to staff.

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