The common principles of research integrity

Preface

- This recapitulation is made on the basis of the presentation "Maintain research integrity" prepared by professors Miroslav Trajanović and Milan Trifunović from the University of Niš within the framework of EURAXESS TOP IV - Open EURAXESS – To strengthen the effectiveness and optimize the services of all partners in an innovative and open EURAXESS network.

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Readme

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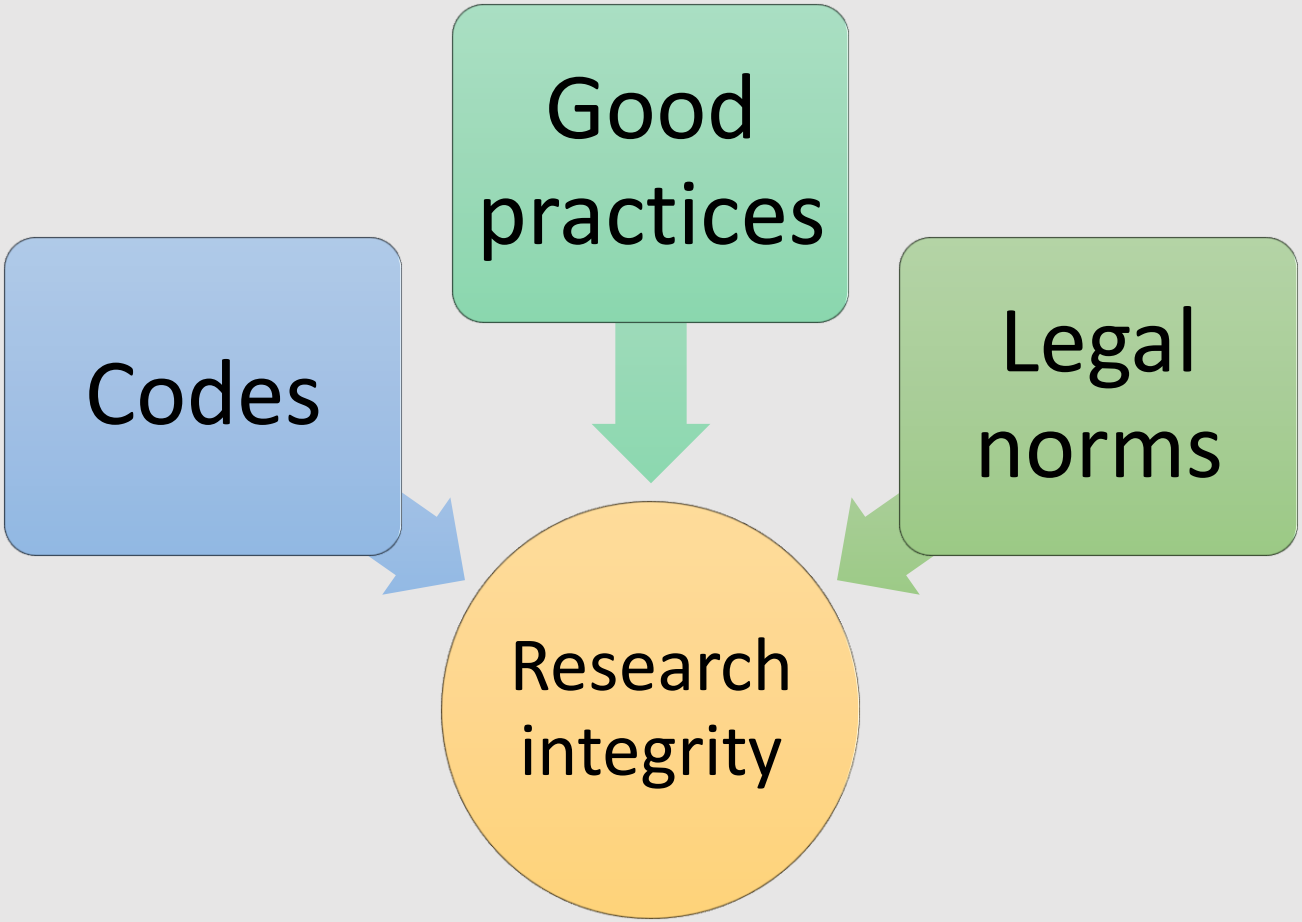
What is research integrity?

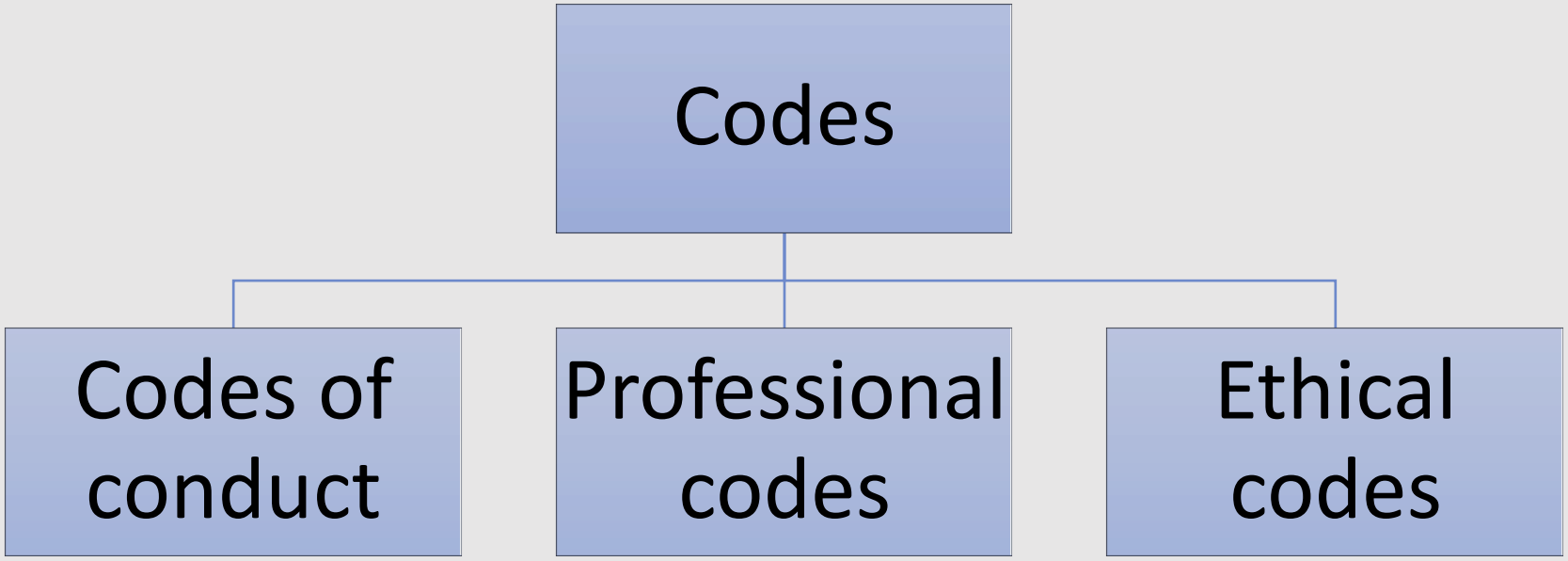
- **Integrity** (from the Latin *integritas*, meaning *whole* or *complete*) refers **in ethics** to adherence to a code or a usually high standard of conduct
- **Research integrity** thus indicates doing research in accord with standards that properly inform and guide that activity: codes, good practices and legal norms
- Research integrity is also often considered the flip side of **research misconduct**
- The topic of research misconduct concentrates on the definition, identification, adjudication, and consequences of malfeasance committed by scientists in the course of their research

Source: https://www.encyclopedia.com/science/encyclopedias-almanacs-transcripts-and-maps/research-integrity

Standards



Codes



Codes

- **Codes** can be seen as **soft norms**, as opposed to the legal norms that are compelling to be respected. However, non-compliance with norms may have negative consequences for researchers.
- Even though many codes have a lot in common, they vary from one institution to another, from one society to another, from one professional area to another

David B. Resnik, Bioethicist National Institute of Environmental Health Sciences, USA

- **What is Ethics in Research & Why is it Important?**
- Analyses a large number of codes of conduct, ethical and professional codes
- Provides an overview of the ethical principles that define them
- He recognizes following **sixteen principles** whose respect is a necessary condition for the integrity of research

Source: https://www.niehs.nih.gov/research/resources/bioethics/whatis/index.cfm

Honesty

- Strive for honesty in all scientific communications
- Honestly report data, results, methods and procedures, and publication status
- Do not fabricate, falsify, or misrepresent data
- Do not deceive colleagues, research sponsors, or the public

Objectivity

- Strive to avoid bias in experimental design, data analysis, data interpretation, peer review, personnel decisions, grant writing, expert testimony, and other aspects of research where objectivity is expected or required
- Avoid or minimize bias or self-deception
- Disclose personal or financial interests that may affect research

Integrity

- Keep your promises and agreements
- Act with sincerity
- Strive for consistency of thought and action

Carefulness

- Avoid careless errors and negligence
- Carefully and critically examine your own work and the work of your peers
- Keep good records of research activities, such as data collection, research design, and correspondence with agencies or journals

Openness

- Share data, results, ideas, tools, resources
- Be open to criticism and new ideas

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Respect for Intellectual Property

- Honor patents, copyrights, and other forms of intellectual property
- Do not use unpublished data, methods, or results without permission
- Give proper acknowledgement or credit for all contributions to research
- Never plagiarize

Confidentiality

- Protect confidential communications, such as
  - papers or grants submitted for publication,
  - personnel records,
  - trade or military secrets,
  - and patient records

Responsible Publication

- Publish in order to advance research and scholarship, not to advance just your own career
- Avoid wasteful and duplicative publication

Responsible Mentoring

- Help to educate, mentor, and advise students
- Promote their welfare and allow them to make their own decisions

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Respect for colleagues

- Respect your colleagues and treat them fairly

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Social Responsibility

- Strive to promote social good and prevent or mitigate social harms through research, public education, and advocacy

Non-Discrimination

- Avoid discrimination against colleagues or students on the basis of sex, race, ethnicity, or other factors not related to scientific competence and integrity

Competence

- Maintain and improve your own professional competence and expertise through lifelong education and learning
- Take steps to promote competence in science as a whole

Legality

- Know and obey relevant laws and institutional and governmental policies

Animal Care

- Show proper respect and care for animals when using them in research
- Do not conduct unnecessary or poorly designed animal experiments

Human Subjects Protection

- When conducting research on human subjects, minimize harms and risks and maximize benefits
- Respect human dignity, privacy, and autonomy
- Take special precautions with vulnerable populations
- Strive to distribute the benefits and burdens of research fairly

Good practices

- Good practices also belong to **soft norms**
- They present guidelines for conducting research in specific scientific disciplines
- Research institutions define good practice, and expect the researchers to respect them, to a greater or lesser extent

Good practice in

- Research environment
- Training, supervision and mentoring
- Research procedures
- Safeguards
- Data practices and management
- Collaborative working
- Publication and dissemination
- Reviewing, evaluating and editing

Legal norms

- Legal norms are mandatory rules governing issues in the field of research
- They can be established by the state, research funding agencies and research performing institution in the form of laws or rulebooks
- Failure to comply with the rules of the legal norms is punishable

The European Code of Conduct for Research Integrity

Four principles of research integrity

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

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The European Code of Conduct for Research Integrity, Revised Edition
Published in Berlin by ALLEA – All European Academies

Research Misconduct

Office of Research Integrity
U.S. Department of Health & Human Services

- Research misconduct means **fabrication**, **falsification**, or **plagiarism** in proposing, performing, or reviewing research, or in reporting research results
- Research misconduct does not include honest error or differences of opinion
- KU Leuven, in addition to the previous three factors, also include the fourth – **questionable research practices**

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Source: https://ori.hhs.gov/definition-misconduct

Fabrication

- Making up data or results and recording or reporting them
- Examples of fabrication
  - Completing a questionnaire for a fictitious subject that was never interviewed
  - Creating a data set for an experiment that was never actually conducted
  - Adding fictitious data to a real data set collected during an actual experiment for the purpose of providing additional statistical validity
  - Insertion of a clinical note into the research record to indicate compliance with an element of the protocol

Falsification

- Manipulating research materials, equipment, or processes, or changing or omitting/suppressing data or results without scientific or statistical justification, such that the research is not accurately represented in the research record
- This would include the "misrepresentation of uncertainty" during statistical analysis of the data
- Examples of Falsification
  - Alteration of data to render a modification of the variances in the data
  - Falsifying dates and experimental procedures in the study notebook
  - Misrepresenting results from statistical analysis
  - Misrepresenting the methods of an experiment such as the model used to conduct the experiment
  - Misrepresenting the materials or methods of a research study in a published paper

Plagiarism

- Plagiarism is any identical or lightly-altered use of one's own or someone else's work (ideas, texts, structures, images, plans, etc.) without adequate reference to the source
- A special case of plagiarism is "self-plagiarism" in which an author will use segments of his/her own published material in a new publication without reference

Questionable Research Practices (QRPs)

- Examples of "QRPs" are:
  - Guest, gift or ghost authorship
  - Duplicate publication and "salami slicing" publication
  - Dropping observations or data points from analyses based on a gut feeling that they were inaccurate
  - Inadequate record keeping related to research projects
  - Failure to disclose conflicts of interest

Why is research integrity important for mobile researchers?

- Research integrity is important for all researchers, regardless of
  - Type of research (academic or industrial)
  - Country
  - Political system
  - Cultural environment

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Why is research integrity important for mobile researchers?

- Research integrity rules vary from country to country and from institution to institution, depending on the political and cultural environment
- Any research environment has specific rules of research integrity
- Therefore, when researchers change the research institution, they should **immediately adapt** to the new integrity rules

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Academic and research integrity at the institutional level

- Codes, policies and practices may differ across institutions
- General principles and topics are quite similar, but the degree of explicitness and the prominence given to the issues of research and academic integrity differ
- The language of international academia? English as lingua franca, but also world languages and the use of national languages.
- A considerable linguistic advantage of the universities in English-speaking countries

Field of research

- The ethical code for medical research is different from the one for IT research
- Even when the researcher does not change the lab, but changes the field of research, she/he must become familiar with the rules that apply in this area
- This is especially true for multi-disciplinary research

Thank you

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