

Researcher accountability

Responsibility combats bad research
and its negative impacts



What is accountability in research?

Accountability is a “fundamental principle of research integrity”, as stated by ALLEA – All European Academies in the [European Code of Conduct for Research Integrity](#) (ECoC, Revised Edition, Berlin 2017). Its application spans “from the idea of the research itself to publication ... its management and organization ... training, supervision and mentoring, and ... its wider impacts”.

Researchers at all stages of their career are responsible for [behaving ethically](#), being **honest** and **collegial**, and abiding by **principles of research ethics and professionalism**.

They are responsible for learning to do **robust (high quality) research** and for assuring that the **methods** and **data** they collect are **reliable and valid**.

According to the ECoC, “a basic **responsibility** of the research community is to formulate the principles of research, to define the criteria for proper research behaviour, to maximize the quality and robustness of research, and to respond adequately to threats to, or violations of, [research integrity](#).”

accountability

noun

UK /əˌkaʊn.təˈbɪl.ə.ti/ US /əˌkaʊn.təˈbɪl.ə.ti/

The fact of being responsible for what you do and able to give a satisfactory reason for it, or the degree to which this happens.

Source: Cambridge Dictionary

Principles of good research practices

- Reliability in ensuring the quality and rigour in the research design, methodology, analysis, and 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.

Source: ECoC

Accountability: from research institutions to individual researchers

Although in some regions of the world researchers are required to take courses in research ethics and good scientific practice before they can start their research, that is not the general rule. Nonetheless, **research institutions and organizations** should promote **awareness** and ensure a prevailing **culture of research integrity**, providing **guidelines** with **clear policies** and **procedures** on good research practice.

Research institutions and organizations must also provide researchers with the **infrastructure**, such as special tools or data management platforms, needed for managing and protecting the data and materials to ensure reproducibility, traceability and **accountability**.

The **challenge** research institutions must deal with is



securing adequate budgets and infrastructures to support proper data management, including data security.

In research, pressures to obtain and publish results can be high. Thus, all researchers need to learn to handle the **pressure** coming from their superiors, affiliated institutions, funders, colleagues, and competitors, in order to avoid falling into any temptations they may have regarding research misconduct or poor practices.

Regardless of the research field, and despite the pressures, all researchers have the basic responsibility to be honest,

comply with ethical standards, collect robust data, and endeavour to reach valid conclusions.

Aside from the research team's personal and collective responsibility and the institutional responsibility of the centre, there are some aspects in which **the principal investigator (PI) has the most responsibility** as the senior-most member of the team with the most knowledge and experience.

How to be accountable:

If you are a PI:

- Know **deeply about research and intellectual property regulations** in the jurisdiction where your team is doing research and be sure the study complies with the relevant legislation and organizational policies. Intellectual property can include words and ideas, which can be relatively easy to steal from others. In this sense, properly citing others' work and acknowledging authors and inventors for their intellectual contributions is ethically appropriate.
- Be sure that ALL authors are aware of **conflict of interest**

policies and financial or other types of support related to the research project. Make sure that ALL the researchers in the team know who has a conflict of interest and ensure that these conflicts are disclosed, especially on grant applications, presentations, and publications. In this sense, researchers are often rewarded for their talents in various ways, including money, private consulting contracts, royalties, etc. Having multiple **rewards** can bring personal fulfilment, but these rewards can also potentially **impact decisions** pertaining to research design, data analysis, and data presentation.

- Be fully aware of **each author's contributions** to a paper. In all fields, acknowledgments should be duly given to those not satisfying authorship criteria.
- Make sure **authorship is discussed and planned** for the papers that the lab/group is working on, as well as for patent applications.
- Be aware of **who the research team is dealing with** when performing research and collaborating with other scientific teams, and **what sort of information they are exchanging**, to monitor compliance with relevant laws and regulations.
- Consider that some **technologies** can seem neutral but can be applied or further developed for uses that harm society or the environment. Therefore, researchers should be reflective and sensitive to the ethical complexities of their research and take steps to mitigate **risks of current and future use** whenever possible.
- **Train junior researchers** in good research practice, applying the principles of accountability mentioned here. In turn, junior researchers are expected to



proactively learn about and adhere to these responsibilities.

- Often a grant-holder, you are responsible for the **funds allocated for a specific project**. If equipment was loaned for a study or a project, you must secure loan agreements or similar contracts for that equipment. You should also be fully aware of export control issues.
- **Ensure project close-out**, including results dissemination and data archival.



If you work in the lab:

- The PI is responsible for **lab safety** to minimize the risk of accidents. The PI needs to make sure all health and safety regulations are met and that all the researchers in the team are trained and follow those guidelines. For instance, [in the case of biomedical labs](#), researchers must wear goggles, lab coat, and gloves.
- In all labs, regardless of the field of knowledge, emergency exits must be free to enable evacuation. In the event something goes wrong, all researchers must know the location of the safety equipment and how to use it.
- All researchers must be fully aware of the hazards of the materials they will be using.
- In the case of [working with lasers](#), nobody should ever look into it, even if it is supposedly eye-safe or low power. Appropriate goggles are to be worn in areas where lasers are present. Moreover, researchers must keep always the laser beam at or below chest level.
- In labs [containing electronic equipment](#), all researchers should follow electrical safety rules in order to help prevent the misuse of electronic instruments, electric shocks, and other injuries. In addition, all researchers should be sure that any damaged equipment, cords, or plugs are reported so they can be repaired or replaced.
- In the case of biomedical resources, all researchers should be trained in [animal welfare](#) before being allowed to work with live animals in the lab. Institutions generally have an animal ethics committee or animal welfare committee along with animal welfare protocols.
- [No food or drinks can be consumed in the lab](#), nor should they be stored in the same refrigerator containing experiments, chemicals or cultures.

If you are a research institution:

- Do not take advantage of your researchers. Duly compensate them, including with suitable remuneration and promotions according to their performance.

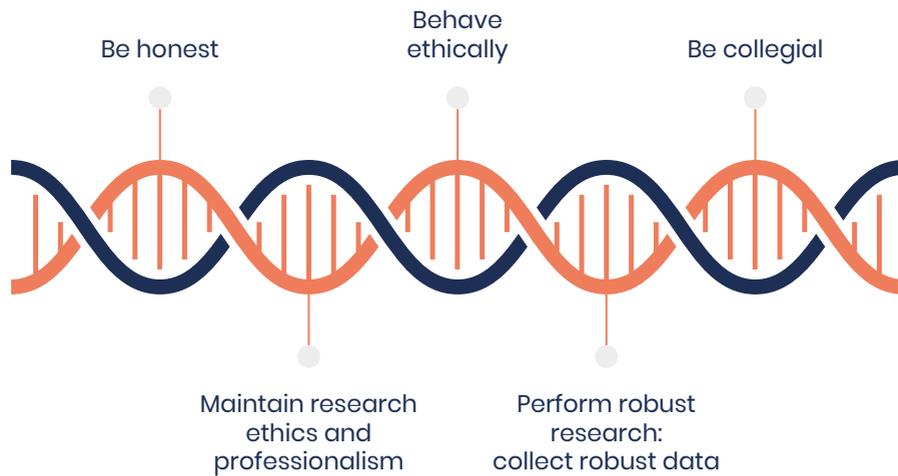
If you are any other researcher:

- Manage and disclose your conflicts of interest so they do not introduce any suggestion of bias in your work. Learning and applying good research integrity practices can minimize bad research and impacts, ensuring trust in and appropriate public recognition of your work and results.
- Know [how to dispose of experimental materials when finished](#). In this sense, you are accountable for research and lab safety and adverse event reporting in your work. You are accountable for mitigating risk and fostering safety and welfare in other participants.
- **Reflect on the ethical sensitivity of your research:** this means considering whether the technologies under development could have a dual use; the context of the use of the technology; and whether research outputs will be accessible to vulnerable social groups.

As an author:

- Do not be bullied into giving honorary authorship to please others that have not made any substantial contribution to the research.
- Do not accept honorary authorship as a valid way to build your CV.
- Have the moral courage to respect the gold standard of authorship (the ICJME requirements, applied across all domains of research).

Make it part of your DNA!



In the lab, have you checked if...

- All the expired reagents and materials have been discarded?
- Lab notebooks are reviewed and signed?
- All team members know how to use back-up emergency power?
- Trainings are up-to-date?
- Loan agreements are on file for all loaned equipment?
- There is clear access to exits, eyewash stations, fire extinguishers, and other emergency equipment?

Source: Luxembourg Agency for Research Integrity (LARI)



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Images: iStock by Getty Images

This **Accountability of Researchers** overview is part of the **Ethical Researcher** series developed in the framework of the **Path2Integrity** project, a European Union Horizon 2020 research and innovative programme that raises awareness about research integrity, while educating on how to argue in favour of responsible research and reliable research results. The main goal is to explain how important it is for researchers and society to sustain a culture of research integrity.

**Please, also
check the
following
overviews on:**

- Mentorship
- Publication
- Research Environment
- Transparency versus protection of data and results

Research Integrity

Is the **quality safeguard** of science and technology, the social sciences, and the humanities.

Protects the **reputation** and careers of researchers and research organizations.

Contributes to **social progress, trust and accountability** in science and technology, the social sciences, and the humanities.

Avoids negative **social impacts** and wasted resources, time, and efforts.

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