

1 Respect Free Thinking

In project-based research, where specific goals are set, researchers may become mere laborers working toward those objectives. This can lead to a lack of ownership over their findings. The essence of research lies in discovery and originality. It is important to respect researchers' ideas and ensure that the potential for progress within research topics is not stifled.

3 Keep Detailed Experimental Records

Reproducibility in research operates on three levels: individual researchers, research groups, and the broader research community. Ensuring reproducibility is crucial for generating universally valid knowledge, and detailed experimental records are fundamental to this process. Accurate and thorough documentation also serves as protection for researchers in cases of misconduct allegations.

5 Be Wary of Favorable Results

When results align perfectly with expectations or resolve long-standing questions, researchers may unintentionally become less critical in their verification. It is essential to adopt a skeptical approach and thoroughly examine such results from multiple perspectives.

6 Establish Networks Beyond the Laboratory

To prevent laboratories from becoming isolated environments, actively engage with research networks both within and outside your institution. Understanding whether the rules and practices of your own lab align with or differ from those of others is important.

2 Engage in Discussions on Equal Terms

While experience-based knowledge is valuable in research, fresh perspectives and simple questions often lead to new developments. When engaging in discussions, ensure that academic position or seniority does not hinder open debate on research matters.

4 Value Unexpected Results

Unexpected findings may present opportunities for new research directions. Sticking too rigidly to the original hypothesis can hinder progress.

Guidelines for Research Activities

Laboratory Edition



Creating a Healthy Research Environment

- Establishment of the Guidelines for the Common Understanding of Research Integrity in Life Science -



Researchers pursue their work with their own motivations.

Type I
Immersed Researcher

Type II
Ambitious Researcher

Type III
Complacent Researcher

Type IV
Craftsman Researcher

What's your type?
More details inside ▶

Some are driven by curiosity—

the desire to uncover knowledge unknown to anyone else—while others seek to develop treatments for incurable diseases or find solutions to global warming.

To continue their research, they must secure competitive funding and academic positions. However, the current research environment sometimes fails to fully satisfy researchers' motivations.

We have examined the environment surrounding researchers in the life sciences and identified obstacles that hinder their motivation.

Based on our findings, we have developed guidelines (a code of conduct) intended for use in university laboratories and research teams.

We encourage research leaders and team members to review these guidelines when welcoming new members, at the start of a new academic year, or during key events, in order to collaborate in creating a better research environment.

Note: This pamphlet was created based on the findings of the project "Establishment of the Guidelines for the Common Understanding of Research Integrity in Life Science" within the "Science for Innovation Policy" program of the Research Institute of Science and Technology for Society (RISTEX), Japan Science and Technology Agency (JST).

For more information, please visit the following website:

<https://research-integrity.web-ac.jp/> ▶



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Individual & Group Interviews with Researchers

Why Isn't Your Motivation Fulfilled?

Voices from the Field

Current Research Environment

VS.

Individual Researchers' Motivation

Are Only Experiments and Papers Research Activities?

Research activities encompass a variety of tasks, including maintaining and updating databases and creating genetically modified animals. However, evaluations often focus solely on published papers. Many supervisors still prioritize publications in high-impact journals.

An Environment that Stifles Researchers' Creative Freedom

In project-based research, where goals are clearly defined, intriguing discoveries made during the research process may be disregarded. Additionally, pursuing findings that do not align with a supervisor's interests can be difficult.

Superficial and Rushed Research

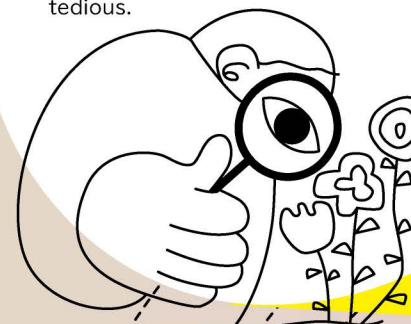
Even when experimenters wish to validate results through different approaches, they are sometimes told, "If a reviewer points it out, we can conduct additional experiments then." This can lead to publishing findings without sufficient verification, increasing the risk that the proposed hypothesis may be incorrect.

Researchers find it hard to express their opinions freely

In research groups with strong hierarchical structures or when leaders are overly attached to their hypotheses, expressing different interpretations or opinions can be challenging. Researchers may also be forced to conduct experiments they do not fully understand without adequate explanations.

Immersed Researcher

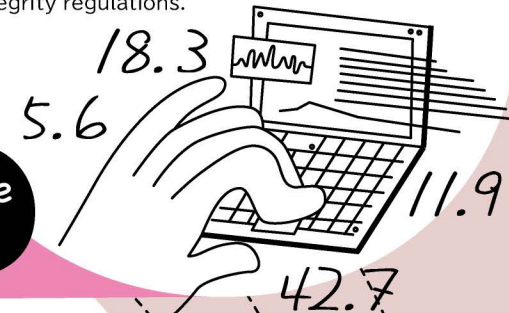
Passionate about experiments and investigations, they derive satisfaction from discovering new knowledge. However, they may lack interest in anything beyond their research and sometimes find writing papers tedious.



Type I

Ambitious Researcher

Highly motivated to secure competitive research funding and achieve career advancement. They aim to publish in high-impact journals and value research group management. They are well-versed in research integrity regulations.



Type II

What Type of Researcher Are You?

We conducted an online survey among life science researchers, analyzing responses in three categories:

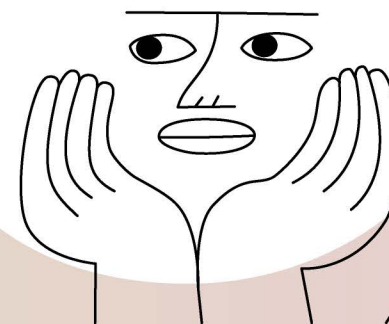
- ① Positive aspects of research activities
- ② Opinions on research skill outsourcing
- ③ Tolerance for collaborators' behaviors

From this analysis, we classified researchers into four types (see diagram). Which type best describes you or your colleagues? Understanding the strengths and weaknesses of each type can help improve collaboration.

Complacent Researcher

Type III

Generally satisfied with their current research environment, they are not particularly driven by strong personal research ambitions. They usually follow the policies of their research group.



Type IV

Craftsman Researcher

Strives to produce results that could be included in textbooks, with a strong focus on reproducibility. They do not prioritize the prestige of journals but prefer to validate exciting results thoroughly before publishing.



Collaborative research

is often where different researcher personalities intersect.

Recognizing one's own research tendencies can lead to more effective collaboration. Working with researchers of different types can also help broaden one's experience.