

way. “We see the Hub as a source for questions about Open Science,” notes Bernabe. “Our ambition is for this to be sustained and built on over the long term.”

## Navigating the complexity of open science

One key project resource is the [General Guidelines on Responsible Open Science](#). “This is the first-ever guidance document in Europe on responsible Open Science,” adds Bernabe. The paper focuses on key issues such as the research environment and infrastructure, the protection of participants, ecosystems and cultural heritage, as well as the need for open and reproducible research practices.

Field-specific guidelines on responsible open science were also published in March 2024. The [Discipline-related Guidelines on Responsible Open Science](#) are designed to help researchers navigate the complexity of open science, covering issues such as auditability, responsibility and the protection of personal data.

The ROSiE project also developed training materials to help students, researchers and citizen scientists acquire the skills required for practising responsible open science. Materials were developed for the humanities, health and life sciences, natural sciences and social sciences.

## Sustainable Hub, living guidelines

The project, which was completed in February 2024, is now ensuring that the Knowledge Hub is sustainable, and will thrive into the future. The training materials will be made available at the [Embassy of Good Science](#), a community-driven initiative to promote ethics and integrity in research.

Bernabe sees the ROSiE project as a starting point for establishing benchmarks in open science discussions about ethics. “Our hope is that the guidelines become a living document, and will be revised in a few years,” she says.



*Our hope is that the guidelines become a living document.*

---

### PROJECT

**ROSiE – Responsible Open Science in Europe**

---

### COORDINATED BY

University of Oslo in Norway

---

### FUNDED UNDER

Horizon 2020-Science with and for Society

---

### CORDIS FACTSHEET

[cordis.europa.eu/project/id/101006430](https://cordis.europa.eu/project/id/101006430)

---

### PROJECT WEBSITE

[rosie-project.eu](https://rosie-project.eu)



# Promoting responsible research practices at the institution level

A new Toolbox from the EU-funded SOPs4RI project offers research performing and research funding organisations a wealth of procedures and guidelines to support responsible research practices.

Research integrity is at the heart of reliable and trustworthy science. The good news is that serious violations of good research practices, such as falsification, fabrication and plagiarism, are relatively rare. Some studies have estimated that 1–2 % of scientists are engaged in such practices. Unfortunately, when they do happen, they tend to get considerable attention by the media.

More concerning is the frequency of questionable research practices, including bad research design, methodology and analyses. And there's also the issue of waste, with [one influential paper](#) estimating that 85 % of all clinical research funding is wasted.

"Intended and unintended breaches of integrity and good research practice reduce the quality of the research produced

and the trustworthiness of the results," explains Mads P. Sørensen, a professor at [Aarhus University](#) in Denmark. "If scientific institutions and practices are perceived to be faltering, public trust in science may be jeopardised."

According to Sørensen, research performing organisations (RPOs) and research funding organisations (RFOs) play a key role in promoting responsible research practices. "These organisations play a decisive role in empowering and enabling researchers to act responsibly in their research practices and in



*Intended and unintended breaches of integrity and good research practice reduce the quality of the research produced and the trustworthiness of the results.*



© David Perkins

detecting and handling breaches of the principles of research integrity,” he says.

But cultivating a responsible research culture and responsible research practices requires that RPOs and RFOs have appropriate policies, procedures and structures in place – which is where the EU-funded [SOPs4RI](#) project comes in.

“SOPs4RI created a collection of easy-to-use standard operating procedures and guidelines that RPOs and RFOs can use to develop their own research integrity promotion plans,” adds Sørensen, who served as the project coordinator.

## Addressing research integrity

These procedures and guidelines are provided via the [SOPs4RI Toolbox](#), an open, free and practice-oriented platform designed to support responsible research. “The idea behind the Toolbox is that institutions can use it to create their own research integrity policies and plans,” explains Sørensen.

To start, the project defined the research integrity topics that should be addressed within the research integrity promotion plans. To ensure the Toolbox met actual RPO and RFO needs, it is built on a comprehensive research and development process – a process that included scoping reviews, a Delphi survey, cross-national focus group interviews, co-creation workshops, a multinational survey and pilot testing at 15 institutions.

The outcome of this work is a comprehensive Toolbox that today contains 131 guidelines addressing all research integrity topics and subtopics, including existing high-quality guidelines as well as new guidelines developed within the SOPs4RI project.

The SOPs4RI Toolbox is already being used by several European and international institutions. It is also referenced in the EU’s [Horizon Europe framework programme](#), as well as in the new version of the [ALLEA European Code of Conduct for Research Integrity](#).

In addition to the Toolbox, the project published a number of high-quality academic papers, including in [‘Nature’](#).

## Promotion plans

Sørensen says he is confident that more institutions will leverage the Toolbox, using its guidelines as inspiration for creating their own research integrity promotion plans.

“If we really want to do something about research misconduct, questionable research practices and research waste, we can’t only focus on individual researchers – we have to look at the science system, our research culture and what institutions can do,” he concludes. “Our Toolbox and guidelines cover the institutional level.

---

### PROJECT

**SOPs4RI – Standard Operating Procedures for Research Integrity**

---

### COORDINATED BY

Aarhus University in Denmark

---

### FUNDED UNDER

Horizon 2020-Science with and for Society

---

### CORDIS FACTSHEET

[cordis.europa.eu/project/id/824481](https://cordis.europa.eu/project/id/824481)

---

### PROJECT WEBSITE

[sops4ri.eu](https://sops4ri.eu)

