

Research integrity: how can we support and protect early-career researchers in cases of scientific misconduct?

INTRODUCTION

During this time of crisis, when policymakers and citizens are listening closely to the advice of scientists, trust in the integrity of research and scientific evidence has never been more important. Policymakers and the public must have confidence that scientists have acted with honesty, and have adhered to principles of rigour, transparency and openness in conducting their research. But what happens when an early-career researcher observes a more senior colleague apparently engaging in possible malpractice? What processes are in place to address potential problems and protect those involved?

Our panel of experts explored these issues at an international webinar, hosted by Academia Europaea Cardiff on 22nd March 2021. The backdrop to the discussion was a paper by four of the panellists, outlining one possible mechanism for investigating reported cases of possible misconduct. Visit the Academia Europaea Cardiff Knowledge Hub YouTube channel to view the [recording](#).

Key themes

Scientific misconduct presents a social dilemma that impacts on both individuals and society. In some subject areas, there is a reported reproducibility crisis which, if not addressed, could lead to corruption of the scientific record and a loss of trust in science. If inadequate work is published in a journal that is highly read and cited, it should, in principle, be called out. Some fraud is deliberate. Other cases arise from poor research design or falsification, reanalysing data until expected or desired results appear. An early-career researcher who observes this can find themselves in a research culture where such questionable practices have become normalised. They may reflect pressures within the system to maximise grant income, publish results quickly, and generate attention.

It is a complex, multifaceted problem.

Power imbalances within institutions may put early-career researchers in a vulnerable position, when it comes to reporting cases of apparent scientific misconduct. Having limited personal power, they may fear damage to their careers if they raise concerns regarding the actions of senior investigators. As a result, early-career researchers need the protection of collective and coordinated action, supported by a secure reporting procedure.

That procedure should prioritise the wellbeing of the early-career researcher, while protecting senior faculty in cases where there is a reasonable error or honest mistake.

One approach is to appoint a scientific integrity official, with the appropriate level of experience, skill and knowledge to manage the investigative process. If an early-career researcher wanted to bring a complaint, the official would act as a point of contact, guiding and informing him or her throughout the course of the investigation. The official should be seen to be fully independent and not subject to institutional power structures. Confidentiality and trust are essential on all sides. That official should offer early-career researchers with related complaints to engage in joint action.

At a policy level, tackling the issue may require wider reforms, considering academic performance, rewards and incentives. These could include revising the criteria by which to assess researchers, moving beyond citation counts and grant income. Alternative or additional criteria could include community engagement, excellent teaching, policy work and management responsibilities.

International organisations can work together on revising codes of conduct and establishing positive evaluation and reward systems. Education and training on codes of conduct and good research design are vital.

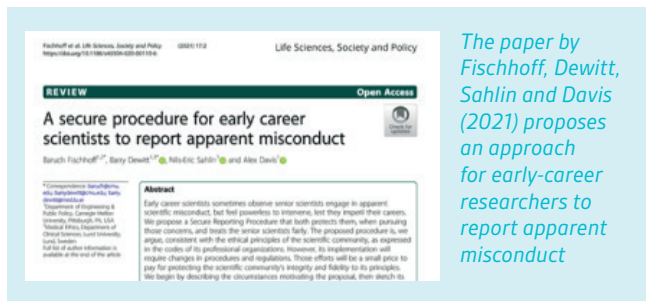
Bottom-up initiatives and campaigns, such as the open science movement, are a positive step forward, as they encourage openness and transparency in the way science is done. Academic journals also have a role to play, by publishing results based on sound science, regardless of the research outcome. The interpretation of the results may vary, but sound data should always be reproducible.

Above all, science is as strong as the people involved in it and the onus is on mutual support within a positive research culture.



BACKGROUND

Baruch Fischhoff, Barry Dewitt, Nils-Eric Sahlin and Alex Davis have published a paper entitled 'A secure procedure for early career scientists to report apparent misconduct'. This formed the backdrop to the discussion. Gemma Modinos and Moniek Tromp, representing the Young Academy of Europe, responded to the paper.



RESOURCES

ALLEA. (2017). *The European code of conduct for research integrity*. allea.org/code-of-conduct/

ARRIVE guidelines 2.0. (2020). arriveguidelines.org/

Desmond, H., & Dierickx, K. (2021). Research integrity codes of conduct in Europe: Understanding the divergences. *Bioethics*. doi.org/10.1111/bioe.12851

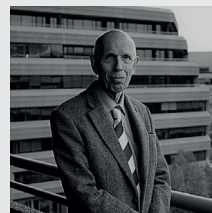
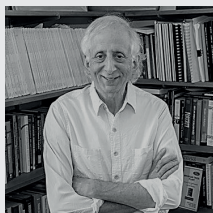
Fischhoff, B., Dewitt, B., Sahlin, N. E., & Davis, A. (2021). A secure procedure for early career scientists to report apparent misconduct. *Life Sciences, Society and Policy*, 17(1), 1-5. doi.org/10.1186/s40504-020-00110-6

Retraction Watch. retractionwatch.com/

SAPEA. (2019). *Making sense of science for policy under conditions of complexity and uncertainty*.

Berlin: SAPEA. doi.org/10.26356/MASOS

PANELLISTS



- Professor Baruch Fischhoff, Howard Heinz University Professor, Institute for Politics and Strategy, and Department of Engineering & Public Policy, Carnegie Mellon University
- Professor Nils-Eric Sahlin MAE, Professor of Medical Ethics, Lund University, Member of the SAPEA Working Group on *Making Sense of Science for Policy* and Member of the European Group on Ethics in Science and New Technologies (EGE)
- Dr Gemma Modinos FYAE, Sir Henry Dale Fellow, Kings College London, Chair of the Young Academy of Europe
- Professor Moniek Tromp FYAE, Professor of Materials Chemistry, University of Groningen, Vice-Chair of the Young Academy of Europe
- Dr Barry Dewitt, Postdoctoral research scientist, Department of Engineering & Public Policy, Carnegie Mellon University
- Professor Ole Petersen, Vice-President for Academia Europaea, Chair

This event was a partnership between: Academia Europaea, the Young Academy of Europe, SAPEA and the European Group on Ethics.

The information and opinions expressed in this briefing document do not represent the views and opinions of Academia Europaea and its board of trustees. This document is a summary of ideas discussed at the webinar.

