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Research that matters.

Research misconduct in Australia

Part 2: Recommendations for creating a world-leading research integrity watchdog with teeth

Australia needs a research integrity watchdog, but what would a best-practice regulatory body look like? Using world-leading examples from five nations, this report makes nine recommendations for the design of an independent research integrity watchdog that would enable Australia to effectively tackle research misconduct.

Discussion paper

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November 2023

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ISSN: 1836-9014

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Summary

Of the 20 countries that produce the most research in the world, Australia is one of the few that doesn't have an independent body to oversee the ethical conduct of research. Instead, Australia relies on a self-regulation model that allows research institutions to receive, assess and investigate complaints of research misconduct without independent oversight. As demonstrated in Part 1 of this report, 'The case for a research integrity watchdog in Australia', this approach is not only ineffective, but can also incentivise research institutions to hide cases of research misconduct. An independent research integrity body will ensure public confidence and international trust in the Australian research sector.

The Australian Academy of Science's proposal for a "national oversight body", potentially named Research Integrity Australia (RIA), stems from these concerns. But will the proposed model be enough to stop research misconduct?

This report offers nine recommendations to create a world-leading research integrity watchdog for Australia. These suggestions are based on an analysis of five prominent research integrity watchdogs from overseas. We took the best ideas and practices from these international watchdogs to inform a proposed design for an Australian body. These recommendations build on the existing strengths of Australia's current framework, combined with international best practice, to design a world-leading watchdog in which Australians can place real trust.

The recommendations of this report are:

1. Establish a clear and enforceable definition of 'research misconduct'.
2. Establish a free-standing, government funded research integrity watchdog with investigatory powers.
3. Research institutions should be bound by the findings of the independent watchdog.
4. Establish a network of local research integrity officers based in research institutions but accountable to the watchdog.
5. Complainants should be able to directly report suspected misconduct to the independent watchdog.
6. The independent watchdog should provide educational resources and mandatory training about research integrity.
7. All reports of research misconduct should be made publicly available.
8. Reintroduce a proper appeal process.
9. Create whistleblower protections.

An extensive comparative analysis of overseas watchdogs from the USA, Denmark, the Netherlands, Germany and Sweden that formed the rationale for these suggestions is included in the appendices to this report.

Introduction

The UK, USA, Japan, China, Canada and 23 European nations have research integrity watchdogs to handle allegations of research misconduct.[1] Australia has no such body. Instead, Australia's self-regulated research sector relies on the discretion of research institutions, including universities, to initiate investigations into allegations of research misconduct.[2]

Research misconduct has the potential to compromise the reputations and prospects for funding of both individual researchers and the institutions they work at. This means that research institutions can be reluctant to investigate. It is therefore necessary to create an independent body that has the power to conduct investigations into allegations of research misconduct.

Australia currently relies on the Australian Code for the Responsible Conduct of Research 2018 (hereafter referred to as the Code) to guide the management and investigation of unethical research practices.[2] The Code is a set of principles and responsibilities research institutions must comply with to receive government-funded research grants. However, under the Code, research institutions have the option to conduct internal investigations without the obligation to publicly disclose the findings. It is entirely optional to use the term 'research misconduct' to indicate a significant breach of the Code. Appeals can be made through the Australian Research Integrity Committee (ARIC), the peak body responsible for reviewing institutional processes used to manage and investigate breaches of the Code. However, appeals are rare because they can only be made on procedural grounds.

The lack of oversight and the inconsistent approach with which research integrity issues are handled in Australia has had far-reaching and serious consequences, including misappropriation of taxpayer-funded research grants, the stifling of scientific progress and, in the case of medical research, risks to patient health. Examples of controversies surrounding research integrity matters are explored in Part 1 of this report, 'The case for a research integrity watchdog in Australia'.[3]

[1] Alexander (2021) 'Macquarie University considers investigating suspected research fraud', *The Sydney Morning Herald,* https://www.smh.com.au/national/macquarie-university-considers-investigating-suspected-research-fraud-20211214-p59hfr.html

[2] National Health and Medical Research Council (2018) *Australian Code for the Responsible Conduct of Research 2018*, https://www.nhmrc.gov.au/about-us/publications/australian-code-responsible-conduct-research-2018

[3] Scicluna & Denniss (2023) *Research misconduct in Australia Part 1: The case for an independent research integrity watchdog*, https://australiainstitute.org.au/report/research-misconduct-in-australia-part-1-the-case-for-an-independent-research-integrity-watchdog

Without a substantial independent national regulator that has genuine power, the integrity of Australian research will always be open to question. A robust, transparent, and accountable watchdog would be an institution in which both the public and academic communities could genuinely place their confidence.

These problems are behind the Australian Academy of Science's current plan to establish a "national oversight body" proposed to be named 'Research Integrity Australia (RIA)'. In a seminar given to staff at the Walter and Eliza Hall Institute of Medical Research (WEHI), former Chief Scientist of Australia Professor Ian Chubb announced some elements of the working plans for RIA.[4] He suggested that RIA could take on the current functions and role of the Australian Research Integrity Committee (ARIC), "but with teeth". He said RIA would "provide oversight and assurance about the management of allegations of research misconduct." The Australian Academy of Science has not published specific details about what the budget for their proposed RIA body would be, but an estimated range of $5-8 million has been cited.[4] This would be just 0.04% to 0.07% of the current annual research budget of $12.1 billion.[5]

Establishing a watchdog with adequate authority to address research misconduct will be instrumental in repairing Australia's broken system for handling allegations of research misconduct. But is the model proposed by the Australian Academy of Sciences enough to ensure research conducted in Australia is above board? What would a regulatory body that adopted the very best principles from around the world look like?

This report provides a guide to answering these questions. It presents a comparative analysis of five prominent research integrity bodies from other countries: the USA, Denmark, the Netherlands, Germany and Sweden. The budgets, remits, authority and caseloads of these bodies are compared to show what is needed for Australia to have a research integrity body that is stronger, better funded, and more effective than either the existing framework or the proposed RIA. It makes nine recommendations for the design of an Australian research integrity watchdog that would put it among the best in the world. Establishing a proposed research integrity watchdog that meets international standards, efficiently utilises taxpayer dollars and effectively manages cases of research misconduct will ensure public trust and confidence in Australian research.

[4] Chubb (2023) *Understanding the research integrity environment'*, WEHI seminar, https://www.youtube.com/watch?v=J1Ak20A_vgw

[5] Department of Industry Science and Resources (2023) *Science, research and innovation (SRI) budget tables 2022–23*, https://www.industry.gov.au/publications/science-research-and-innovation-sri-budget-tables-2022-23

Nine recommendations for an international best-practice research integrity watchdog

Recommendation 1: Establish a clear and enforceable definition of 'research misconduct'

A clear and non-optional definition of 'research misconduct' should be introduced.

Based on definitions in place in Denmark, Sweden and the USA, research misconduct should be defined as:

> Fabrication, falsification or plagiarism (FFP) that is committed intentionally, or through gross negligence or recklessness when planning, conducting or reporting research.

To align with leading countries, a definition of 'questionable research practices' should also be introduced. This would clearly delineate between minor shortcomings that the research institution should resolve, and instances of research misconduct that should be handled by the watchdog. This proposed definition of questionable research practices' draws on the definition used in Denmark:

> "Violation of generally accepted standards for responsible research conduct." This should include, but not be limited to the principles and responsibilities in the existing Code.[6]

It is essential that any definition, like any other law or regulation, be universally applicable and determined based on objective fact (and not the whims of an institution with a vested interest in its application).

A guide that accompanies the Code includes the following recommended definition of research misconduct: "… a serious breach of the Code which is also intentional or reckless or negligent".[7] It states that use of the term is optional: "To acknowledge the egregious nature of some serious (major) breaches, institutions **may decide** to refer to those breaches of the

[6] *Act on Research Misconduct etc.* (2017) (Denmark),https://ufm.dk/en/legislation/prevailing-laws-and-regulations/research-and-innovation/scientific-dishonesty

[7] National Health and Medical Research Council (NHMRC), Australian Research Council (ARC) and Universities Australia (UA) (2018) *Guide to managing and investigating potential breaches of the Australian Code for the Responsible Conduct of Research, 2018* p 6, https://www.nhmrc.gov.au/file/14385/download?token=k5VPLebS

Code as 'research misconduct'."[8] This means that if a researcher seriously breaches the Code, their institution can choose to avoid classifying the breach as research misconduct, and instead use more ambiguous or softer language such as 'academic misconduct' to categorise the behaviour. This approach can downplay the severity of the actions and potentially serve to safeguard the institution's reputation and its staff.

The guide to the Code also emphasises that breaches can occur on a spectrum, and that while a major breach typically requires an investigation, a minor breach "may be addressed at the preliminary stage". Preliminary investigations are typically carried out by an internal senior staff member, which can introduce bias to the investigation. The guide also contains a non-exhaustive list of examples of breaches, which includes (but is not limited to): not meeting research standards; fabrication, falsification, misrepresentation; plagiarism; research data management; supervision; authorship; conflicts of interest; and peer review. The severity of each is not explicitly outlined and is instead determined at the discretion of research institutions, leading to potential variations in how they may address matters of research integrity.

Establishing a clear definition of research misconduct that includes FFP would ensure clarity and reduce ambiguity around what qualifies as a 'serious breach' of the Code while still accounting for the intent and extent of the misconduct. Additionally, it would better align with international standards and limit the flexibility given under the current Code, which affords individual research institutions the right to exercise their discretion in determining whether to use the term 'research misconduct'. These revisions would ensure a more uniform approach to addressing and resolving cases of misconduct across Australian research institutions.

The draft plans for RIA would include a new definition of 'serious misconduct' (not 'research misconduct') that would include four unethical research behaviours including fraud, plagiarism, a 'flagrant' breach of the Code, and another that Professor Chubb was unable to recall.[9] He did not go into further detail about what would constitute a flagrant breach or whether this would be a compulsory definition. An unequivocal definition of research misconduct is essential to stop research institutions from manipulating and trivialising Code violations for the sole purpose of protecting their vested interests.

[8] NHMRC (2018) *Australian Code for the Responsible Conduct of Research 2018*, https://www.nhmrc.gov.au/about-us/publications/australian-code-responsible-conduct-research-2018

[9] Chubb (2023) *Understanding the research integrity environment*.

Recommendation 2: Establish a free-standing, government-funded research integrity watchdog with investigatory powers

A national Australian research integrity watchdog should be government-funded, independent, and have authority to investigate cases of research misconduct.

This centralised investigatory body should deal with allegations of research misconduct only. Instances of questionable research practice should be handled through existing institutional procedures. Its remit should cover all publicly-funded research performed at any research institution – including universities and public agencies – and span the tertiary, business, and philanthropic sectors.

Establishing a free-standing, government-funded national research integrity watchdog would bring Australia into line with international best practice. While investigations in USA, Germany and the Netherlands are carried out by the responsible institution, they are obligated to report back to independent watchdogs during the investigation, and once it has concluded.[10,11,12] These watchdogs typically provide assistance during the investigation and ensure that it complies with procedural guidelines. The process is stricter in Sweden and Denmark where investigations are completely independent and carried out by impartial board members.[13,14] Board members are working academics from different disciplinary backgrounds and are replaced every four to six years. Additionally, these Scandinavian watchdogs have the authority to request investigations if they have reasonable grounds to suspect research misconduct, though this ability is reserved for exceptional circumstances. The remit of each watchdog examined in this report varies.

In his seminar, Professor Chubb stated that the RIA working group "did not want to establish a free-standing investigative body", and that "Australia needs to chart a course between self-regulation and an investigatory body, neither a dove nor a hawk."[15]

Investigations into research misconduct should be carried out by a small, specialised team of trained research integrity investigators. These investigators would form an inquiry panel when an investigation into research misconduct is required. They should be external to the institution involved in the allegation, should not have any real or perceived conflicts of interest, and be able to seek the input of additional experts if specialised knowledge is required. Inquiry panels would be hosted and financially supported by the institution in

[10] United States, Office of Research Integrity (2016) *Frequently asked questions*, https://ori.hhs.gov/frequently-asked-questions

[11] German Research Ombudsman (2023) *FAQ – Frequently asked questions*, https://ombudsman-fuer-die-wissenschaft.de/4174/faq-frequently-asked-questions/?lang=en

[12] ENRIO (2019) *Country report Netherlands*, http://www.enrio.eu/country-reports/netherlands/

[13] Danish National Research Foundation (2021) *Worth knowing: research integrity from a Danish perspective*, https://dg.dk/en/research-integrity/

[14] Sweden, Npof (2023) *About us*, https://npof.se/en/about-us/

[15] Chubb (2023) *Understanding the research integrity environment*.

question, and should be given access to all evidence, people and facilities required to complete their inquiry. Like the Swedish and Danish bodies, Australia's research integrity watchdog should have the power to initiate an investigation if a well-founded suspicion of research misconduct comes to its knowledge through means other than a direct submission of a complaint. But, also like the Swedish and Danish watchdogs, this power should be reserved for exceptional circumstances.

Such an approach would be vastly different from the current self-regulation model (as regulated by the Code), in which research institutions are responsible for handling allegations of research misconduct and breaches of the Code. The guide that accompanies the Code outlines a **recommended** approach for managing and investigating a potential breach of the Code (refer to Appendix 1 for further information).[16] This creates the potential for bias and conflicts of interest (including the perception of bias or a conflict of interest), as institutional representatives hold significant power over investigations, including the terms of reference, whether the institution chooses to recognise serious breaches of the Code as research misconduct, and whether the institution acts on the recommendations of the inquiry panel. The current framework also allows institutions to host internal investigations into their own staff. Institutions may choose to commission an external investigation, but there is no obligation for them to do so. It is entirely consistent with the Code that a single person from the same research institution could conduct an investigation into a colleague. In the absence of the kind of independent national regulator this paper calls for, there will always be the potential for discrepancies in how institutions manage research misconduct cases, even when institutional investigation procedures are approved by ARIC. A nationally consistent approach is necessary, and this could be achieved by establishing a free-standing, government-funded research integrity watchdog.

In contrast, the body being proposed by the Australian Academy of Science (AAS) – RIA – would merely oversee investigations undertaken by research institutions. The most significant measure that RIA would take to ensure the independence of an investigation would be approving the inquiry panellists and establishing the terms of reference. Under the AAS's plan, RIA would not have the authority to initiate investigations, except in instances of problems with institutional culture that are inconsistent with the Code. Plans for RIA place marked emphasis on developing a 'complaint triage' process that accounts for different tiers of misconduct. RIA would only pursue "serious misconduct", with minor or less serious breaches to be dealt with internally through institutional policies.[17] Research institutions would have to comply with RIA policies as a condition of receiving grants. But RIA would require the institution's permission to investigate complaints about "total research

[16] NHMRC, ARC and UA *Guide to managing and investigating potential breaches of the Australian Code for the Responsible Conduct of Research, 2018*.

[17] Chubb (2023) *Understanding the research integrity environment*.

culture".[16] It is also unclear if institutions would be obligated to implement the recommendations that arise from an investigation. Australia can do better.

Recommendation 3: Research institutions should be bound by the findings of the independent watchdog

The findings of the Australian research integrity watchdog should be binding, and research institutions should be obligated to act on its decisions.

Given that the investigatory panels would be made up of trained investigators with an understanding of legal compliance, their findings should be binding. The watchdog should also be granted the authority to impose the "precautionary and consequential actions" currently adopted by the Australian Research Council (ARC) and National Health and Medical Research Council (NHMRC). These precautionary and consequential actions may be used when these funding agencies are advised that an allegation has been referred for investigation, or in response to a finding of serious misconduct.[18,19]

Precautionary actions that may be taken by the ARC/NHMRC include:

- requiring institutions to suspend projects funded by the ARC/NHMRC while an investigation or appeal process is underway
- placing conditions on grants that address or mitigate any potential or proven risks
- suspending or ceasing the progression of ARC/NHMRC grant applications
- temporary suspension of grant payments
- withholding of one or more grant recommendations to the Minister
- limiting, preventing, and/or suspending the participation of individuals in ARC/NHMRC assessment, peer review and committee activities.

The ARC/NHMRC also list the following 'consequential actions':

- terminating and/or recovering any or all ARC/NHMRC funding relating to a funding or grant agreement
- ceasing the progression of ARC/NHMRC grant applications
- deciding not to recommend funding of a researcher's application(s) to the Minister

[18] ARC (2021) *Research Integrity Policy*, https://www.arc.gov.au/about-arc/program-policies/research-integrity/research-integrity-policy

[19] NHMRC (2019) *Research Integrity andMisconduct Policy*, https://www.nhmrc.gov.au/about-us/resources/nhmrc-research-integrity-and-misconduct-policy

- placing conditions on the consideration of any future grant applications
- lacing conditions on ARC/NHMRC grants that address or mitigate any identified risks
- ceasing the involvement of individuals, and preventing their future involvement, in ARC/NHMRC peer review, assessment and committee activities.

The Code currently recommends that the decision to act on the findings of an investigatory panel is the responsibility of the institution's Responsible Executive Officer (REO, see Appendix 1).[20] The REO is typically an institution's Director or CEO, or a university's Vice-Chancellor or Deputy Vice-Chancellor. In theory, if the REO does not agree with the outcome of an investigation, they have the authority to disregard the investigation's findings and decide the institution's response. This places the responsibility of this significant decision solely on one individual and undermines the entire purpose of what should be an independent investigation. There is no intention for RIA to function as an investigatory body, so it would not help solve this problem.

Compare this to Denmark, where the findings of research integrity panels are binding.[21] Without the requirement for research institutions to act on the ruling of an investigation panel, the effectiveness of the entire investigation process is compromised. By making findings binding, research institutions would be obligated to act. This prevents research institutions from disregarding or manipulating findings, which would ensure accountability and trust in the investigation process by both the public and academic communities.

Recommendation 4: Establish a network of research integrity officers based in research institutions but accountable to the independent watchdog

A network of local research integrity officers (RIOs) should be established to complement and assist the independent research integrity watchdog.

RIOs would be based within the research institution where they are employed and would work for the independent watchdog on a voluntary basis alongside their academic duties. They would serve as the primary point of contact within their institution for inquiries related to research integrity. Multiple RIOs would be assigned to each research institution to avoid conflicts of interest. In instances where non-remedial research misconduct is suspected, RIOs would collaborate with the watchdog's investigation team. RIOs would assist with the preparation of any necessary investigation by helping to secure evidence, gather relevant

[20] NHMRC, ARC and UA (2018) *Guide to managing and investigating potential breaches of the Australian Code for the Responsible Conduct of Research, 2018.*,

[21] ENRIO (2019) *Country report Denmark*, http://www.enrio.eu/country-reports/denmark/

personnel, and by undertaking any other actions that are appropriate for an internal employee to perform.

The role of these recommended RIOs would not be to conduct investigations or provide input into the decisions of the investigation panel (which, to reiterate Recommendation 2, would be independent of the institution involved in an investigation). Instead, they would have an advisory function and would provide solution-oriented conflict resolution, mediation and guidance. They would work with researchers to proactively prevent research misconduct. Both research integrity inquiries misconduct complaints would be made to these RIOs, who would be required to report any substantiated allegations to the watchdog. The watchdog would provide training to the RIOs through online modules, workshops and seminars. Currently, RIOs (which are called by various names in different institutions) operate within the existing framework. However, these RIOs are appointed by their respective institutions and are solely accountable to their institutions, not to a centralised body.

Embedding RIOs within research institutions would reflect the world-leading practices of the German Research Ombudsman.[22] The German Ombudsman utilises a vast network of over 900 local ombudspersons to handle local enquires about research integrity matters, offering support and mediation.[23] The Ombudsman incorporates a triage mechanism where queries can be resolved before they escalate to formal investigations.

Having RIOs that serve a triage function would help ensure that the independent watchdog is able to manage caseloads. This would help avoid what happened to the Swedish National Board for Assessment of Research Misconduct (Npof), which was inundated with reports of misconduct upon its establishment in 2020.[24] By ensuring that the watchdog only receives complaints of research misconduct, RIOs would be responsible for handling research integrity queries and resolving allegations of questionable research practices. As friendly faces with local, institutional knowledge, RIOs would be available to provide informed, accessible support in cases of remedial issues. Focusing on mitigation rather than punitive actions would encourage reporting and help foster a more approachable environment focused on education. It would also help ensure that cases of misconducted are not underreported, which has been a prominent issue for America's Office of Research Integrity (ORI).[25] In 2022, ORI received 269 complaints of research misconduct.[26] In comparison, the

[22] German Research Ombudsman (2023) *FAQ – Frequently asked questions*, https://ombudsman-fuer-die-wissenschaft.de/4174/faq-frequently-asked-questions/?lang=en

[23] German Research Ombudsman (2023) *List of Ombudspersons*, https://ombudsman-fuer-die-wissenschaft.de/list-of-ombudspersonen/?lang=en

[24] Else (2021) *Swedish research misconduct agency swamped with cases in first year*, https://www.nature.com/articles/d41586-021-02451-4

[25] Titus, Wells, and Rhoades (2008) *Repairing research integrity*, https://www.nature.com/articles/453980a

[26] United States, Office of Research Integrity (2022) *Annual report FY 2022*, https://ori.hhs.gov/sites/default/files/2023-02/FY22%20ORI%20Annual%20Report_FINAL_1.pdf

German Research Ombudsman (which provides advice to a comparatively small number of research institutions) received 206 queries about research integrity, outshining complaints submitted to its European counterparts by a large margin (the Netherlands received 29 complaints and Sweden received 40 complaints).[27,28,29] This marked difference in reporting rates suggests that the German Research Ombudsman effectively promotes its existence and encourages query submissions without causing fear of punitive action.

Under the current plans, RIA would not play a role in resolving disputes or act as a mediator. While the plans for RIA include a triage mechanism, it is still unclear whether RIA would oversee the triaging of complaints, or if this would be the responsibility of research institutions.

Recommendation 5: Complainants should be able to directly report suspected misconduct to the independent watchdog

The independent research integrity watchdog should be able to receive reports of suspected research misconduct directly from complainants.

Alongside the option to report suspicions of research misconduct to local RIOs, the watchdog should have the capability to receive allegations directly. Researchers, institute and university staff, members of the public, and anyone with reasonable knowledge of any alleged research misconduct should be able to report allegations of research misconduct, anonymously if desired.

Under the current system, options for reporting research misconduct are limited. Allegations may be raised internally with institutionally-affiliated integrity officers (for more information see Appendix 1).[30] Unlike the RIOs proposed above, these officers are not accountable to a centralised body. It is the responsibility of these officers to make a judgement about whether the complaint meets the criteria for an investigation. Should the officer choose to escalate the complaint, the handling of the matter is subject to the discretion of a small group of individuals within the institution. There is a concern that these individuals might face pressure or feel obligated to deliver a favourable outcome to preserve positive relationships with their employer and colleagues. This lack of oversight means that an allegation may not be pursued further if it is not escalated by the officer, and this can leave the complainant with no additional avenues for redress if they believe the allegations do have merit. As past events have shown, this can leave individuals with no

[27] German Research Foundation (DFG) (2022) *Annual report 2022*, https://www.dfg.de/en/dfg_profile/about_the_dfg/annual_report/index.html

[28] Netherlands, LOWI (2023) *Advisory opinions*, https://lowi.nl/en/opinions/

[29] Npof (n.d.) *Publications*, https://npof.se/en/about-us/publications/

[30] NHMRC, ARC and UA *Guide to managing and investigating potential breaches of the Australian Code for the Responsible Conduct of Research, 2018*.

recourse but to blow the whistle publicly.[31] If complaints could be made directly to the watchdog, fewer people would have to turn to the press.

It is unclear whether RIA would be enabled to receive complaints that have not first gone through institutional reporting processes. However, in his seminar, Professor Chubb stated that RIA could potentially "be a place where whistleblowers could go … but it would go through some sort of triage …"[32]

In contrast, the German Research Ombudsman, the American Office for Research Integrity (ORI) and the Swedish Npof are all equipped to receive complaints of research misconduct directly, either in-person, by phone, or online.[33,34,35] In Sweden, reporting to internal representatives is strictly banned (see Appendix 6).

Researchers in Australia need more options to report concerns about research misconduct. By offering both local and central reporting options, individuals would have the flexibility to choose the most suitable avenue for reporting research integrity concerns. If Australia is to meet international best practice, researchers much have an option to go above their institution, especially if they feel their complaint has not been treated fairly. This would also provide an independent channel for researchers who might feel uncomfortable reporting to internal RIO colleagues. Providing multiple options to suit different needs would give a complaint the best chance of being heard and prevent complaints from being prematurely dismissed at an institutional level.

Recommendation 6: The independent watchdog should provide educational resources and mandatory training about research integrity

The watchdog should host discussion hubs, provide educational resources, and require researchers to complete mandatory annual training.

All researchers – beginning at the Honours degree level – should be required to complete standardised research integrity training through modules provided by the independent watchdog. Modules should be available through an online portal accessed via the watchdog's website. Completion records of these modules should be linked with profiles of

[31] Scicluna & Denniss (2023) *Research misconduct in Australia Part 1: The case for an independent research integrity watchdog*

[32] Chubb (2023) *Understanding the research integrity environment*.

[33] German Research Ombudsman (2023) *Contact*, https://ombudsman-fuer-die-wissenschaft.de/contact/?lang=en

[34] United States, Office of Research Integrity (2023) *Rapid response for technical assistance*, https://ori.hhs.gov/rapid-response-technical-assistance

[35] Npof (n.d.) *Submission of suspected misconduct case*, https://npof.se/en/report/overlamning-vid-oredlighet-en/

individual researchers held on the NHMRC grants portal 'Sapphire' and the ARC's Research Management System (RMS) so that they can be taken into account when assessing grant applications. If the user has not completed the training, they should not be eligible to submit a grant application. To assist with specific queries about research integrity that fall outside the scope of the training modules, RIOs should be available to offer guidance, and discussion hubs should be hosted by the watchdog to facilitate discussions. These should be moderated by a small team of trained staff to answer commonly held questions and address issues that most commonly affect Australian researchers. The independent watchdog's website should include resources such as a database of all local research integrity officers, training modules, FAQ pages, research integrity guidelines, a reporting portal, and publications by the watchdog, including case summaries, research misconduct statistics and annual reports.

Under the current Australian framework, research integrity training is not mandatory. While some Honours programs do include research integrity training, this can be the last time a researcher receives formal research integrity training during their academic career.[36] While some institutions offer online training modules for their employees on a voluntary basis, they are not formally obligated to provide this service, and there is no external entity holding them accountable for the continued maintenance of these training programs. A 2022 national survey by the Australian Academy of Science found that 73% of Australian researchers agree that research integrity training should be mandatory.[37]

The German Research Ombudsman provides the kind of discussion hubs that this recommendation is based on. These hubs are curated by a team of three experienced former researchers, and were specifically developed to address the three most common queries submitted to the Ombudsman: authorship conflicts, plagiarism and dealing with research data.[38] Its website provides extensive educational resources including a database of local research ombudspersons, a comprehensive FAQ page, and a timetable of upcoming workshops, symposiums and training opportunities.[39] Similarly, the USA's ORI website offers

[36] Informal, incidental training may take place when researchers complete human or animal research ethics applications, but this paperwork only pertains to research on human or animal subjects. Consequently, researchers whose work does not involve humans or animals will not be exposed to the information contained within these applications. More importantly, the efficacy of these measures is uncertain, as evidenced by the ongoing cases of research misconduct that continue to persist despite these efforts. The responsibility of providing and updating research integrity training for researchers who are not Honours students lies with their research institution.

[37] Nature Research, Australian Academy of Science, and Goodey (2022) *Research integrity – a survey looking at needs and provision of training in Australian institutions*, https://www.science.org.au/supporting-science/science-policy-and-analysis/reports-and-publications/research-integrity-australian-institutions

[38] German Research Ombudsman (2023) *Contact discussion hubs*, https://ombudsman-fuer-die-wissenschaft.de/discussion-hubs/kontakt/?lang=en

[39] German Research Ombudsman (2023) *The German Research Ombudsman*, https://ombudsman-fuer-die-wissenschaft.de/?lang=en

plenty of valuable information.[40] This includes an archive of investigation outcomes, a detailed FAQ section, interactive and educational videos, books, advice for handling research misconduct, and much more. The Swedish Npof's website contains a live, interactive page with statistics on investigation reporting and outcomes, including the number of complaints received and rejected, the types of misconduct investigated, and the number of convictions per year.[41] It also has a prominent section titled "Report", which includes detailed instructions on how to make a complaint and a complaint submission form.[42] In contrast, researchers in Australia have to proactively seek information on the Code.

It is unclear what, if any, educational function RIA would serve.

Recommendation 7: All reports of research misconduct should be made publicly available

A summary of all research misconduct investigations should be publicly published on the independent watchdog's website. The responsible researcher and institution at which the research misconduct took place should be identified.

The Australian Code does not require research institutions to publicly or privately disclose information about investigations into research misconduct. On the contrary, research institutions are required to uphold confidentiality as outlined in the Code's guidelines, which specify that "investigations must be … confidential." Institutions are merely given the choice to "consider whether a public statement is appropriate to communicate the outcome of an investigation."[43] This lack of transparency is one symptom of the problems associated with Australia's self-regulation model. Researchers and institutions are not held responsible, and this makes it challenging to identify where to allocate resources to effectively address problems. The existing system also allows research institutions to keep allegations of research misconduct confidential so that they can protect their reputations. As a result, it is difficult to collect accurate national data on the nature and extent of research misconduct in Australia, which means that decision makers do not have a solid evidentiary basis about the scope and impact of the problem.

In contrast, all overseas research integrity watchdogs analysed in this paper publicly report research misconduct investigations. The USA stands out as one of the most transparent of these bodies, as it publicly identifies all the names of institutions and individuals involved in

[40] United States, Office of Research Integrity (n.d.) *ORI - The Office of Research Integrity*, https://ori.hhs.gov/

[41] Npof (n.d.) *Statistics*, https://npof.se/en/statistics/

[42] Npof (n.d.) *Submission of suspected misconduct case*.

[43] NHMRC, ARC and UA *Guide to managing and investigating potential breaches of the Australian Code for the Responsible Conduct of Research, 2018*.

research misconduct investigations.[44] However, only decisions related to research misconduct are published, and cases involving less serious infractions are not. On the other hand, countries like the Netherlands, Sweden, and Denmark publish all decisions of research misconduct investigations, regardless of whether the researchers were found guilty or not (although details of individuals and/or institutions are anonymised or redacted).[45,46,47] In Germany, only anonymised decisions related to research misconduct findings are published in press releases.[48]

RIA appears to have opted for a model where, rather than publishing details publicly, data related to investigations would be collected, aggregated and held internally. Findings of serious misconduct would be reported to the responsible minister shortly after the conclusion of the investigation, while minor breaches would be reported annually. Professor Chubb outlined concerns regarding 'reputational risks' where "you wouldn't want to put organisations into a position where their reputation was at risk because a couple of people made a mistake." Professor Chubb said that aggregated data would "be useful because what you're trying to do is to say we're on top of this and we have a mechanism to handle it", and "I don't know what you would achieve by saying in year one, this university had a problem, in year two, that division …"[49] Public identification of the institutes and individuals responsible for research misconduct would be a powerful deterrent and send a clear message that research misconduct will no longer be tolerated.

Incentives for institutions to comply with the Code are also lacking in the proposed RIA model as they are not held accountable through the publication of their names. This approach does not offer a substantial improvement over the current framework aside from the data collection aspect.

Recommendation 8: Reintroduce a proper appeal process

An avenue to appeal research misconduct investigation findings should be introduced.

The subject of a research integrity investigation should have the right to appeal the findings of an inquiry panel. There should also be a pathway for witnesses to appeal the findings, especially if new evidence comes to light. The 2007 version of the Code included appeals provisions, stating that "there should also be an avenue for the findings to be appealed",

[44] United States, Office of Research Integrity (2016) *Frequently asked questions*.

[45] LOWI (2023) *Advisory opinions*.

[46] Npof (n.d.) *All the Board's decisions on research misconduct*, https://npof.se/en/decisions/

[47] Danish Board on Research Misconduct (2023) *Afgørelser (Decisions)*, https://ufm.dk/forskning-og-innovation/rad-og-udvalg/Naevnet-for-Videnskabelig-Uredelighedelighed/afgorelser

[48] Kretzschmar (2020) *Pressemitteilungen der DFG zu Fällen wissenschaftlichen Fehlverhaltens der letzten zehn Jahre*, https://wissenschaftliche-integritaet.de/pressemitteilungen-wiss-fehlverhaltens/ Use English translation available on website

[49] Chubb (2023) *Understanding the research integrity environment*.

and that "the person subject to the inquiry may have an entitlement to appeal to a higher authority, most usually the courts."[50] This provision should be extended to witnesses and reintroduced to the Code or anything that might replace it.

Under Australia's existing self-regulation model, appealing the outcome of an investigation is near impossible. Requests for a review of an investigation can only be submitted to ARIC – the committee that reviews institutional processes used to manage and investigate breaches of the Code. Appeals to ARIC can only be made on the grounds of challenging the investigation process itself (procedural fairness), regardless of whether new information or evidence comes to light.[51] However, without the public disclosure of inquiry findings, challenging a decision would be difficult no matter the grounds. For a detailed explanation on the appeals process currently adopted in Australia, see our previous report 'The case for a research integrity watchdog in Australia'.[52]

In contrast, both the USA and Sweden allow the findings of investigations to be appealed. In the USA, a researcher found to have committed research misconduct is entitled to contest the findings by requesting an administrative hearing before an administrative law judge.[53] Sweden's Npof adopts a similar approach where individuals found guilty of research misconduct may appeal the decision in the administrative courts.[54] Denmark takes the strictest approach of the watchdogs examined in this paper. Its findings are binding and cannot be appealed.[55]

Whether an appeals process would be included in the RIA framework has not been made clear.

Recommendation 9: Create whistleblower protections

Whistleblowers who make complaints to the research integrity watchdog should be protected.

The whistleblower protections in the 2007 version of the Code stated that "a person who makes an allegation must also be treated fairly and according to any legislative provisions for whistleblowers during and following investigation of the allegations."[48] But this provision

[50] NHMRC (2007) *Australian Code for the Responsible Conduct of Research, 2007*, https://www.nhmrc.gov.au/about-us/publications/australian-code-responsible-conduct-research-2007

[51] NHMRC,ARC and UA *Guide to managing and investigating potential breaches of the Australian Code for the Responsible Conduct of Research, 2018*.

[52] Scicluna & Denniss (2023) *Research misconduct in Australia Part 1: The case for an independent research integrity watchdog*

[53] United States, Office of Research Integrity (2016b) *Frequently asked questions*.

[54] Npof (n.d.) *Decisions, penalties and appeals*, https://npof.se/en/research-misconduct/decisions-penalties-and-appeals/

[55] ENRIO (2019) *Country report Denmark.*

is notably missing from the 2018 version of the Code and its accompanying guide, leaving whistleblowers without adequate protection. Flaws in Australia's whistleblower protections mean that opting to blow the whistle carries significant risks to the complainant. Whilsteblowers who make complaints to the proposed independent research integrity watchdog must be protected.

Defamation, career instability, personal safety risks, and the potential for workplace retaliation are all valid concerns that whistleblowers must consider. The current framework lacks substantial accountability, with no external avenues for whistleblowers to pursue if their allegations are not taken seriously by their institution. Consequently, cases of research misconduct often come to light only after whistleblowers turn to the media as a last resort. This exacerbates public distrust and suspicion of Australian researchers, giving the public less reason to place their confidence in the sector.

Both the USA and the Netherlands have specific provisions for protecting those who blow the whistle on research misconduct.[56,57] Both watchdogs ensure the identity of whistleblowers remains confidential and that they are protected from retaliation. While the relevant Swedish regulation does not contain explicit protections for whistleblowers, individuals are covered by the general whistleblower protections offered under Swedish law.[58,59]

Whistleblowers have an essential role in calling out and identifying research misconduct. The effectiveness of any watchdog hinges on the ability of whistleblowers to be heard and to be protected. Establishing an external channel for whistleblowers to report their allegations would help alleviate fears of repercussions and encourage them to come forward with information in the public interest. This would also prevent whistleblowers from being forced to go to the media with their concerns, which would ultimately reflect better on the sector, promoting public trust in Australian research rather than challenging it.

The proposed RIA would not actively seek whistleblowers but would have the capacity to receive direct complaints. RIA will incorporate whistleblower protections. This aligns with our recommendation to adopt whistleblower protections.

[56] United States, Office of Research Integrity (2016b) *Frequently Asked Questions*.

[57] KNAW and others (2018) *Netherlands code of conduct for research integrity*, https://easy.dans.knaw.nl/ui/datasets/id/easy-dataset:110600

[58] Npof (n.d.) *FAQ*, https://npof.se/en/vanliga-fragor-eng/

[59] *Act on the Protection of Persons Reporting Irregularities* (2012:890) (Sweden),https://www.government.se/government-policy/labour-law-and-work-environment/2021890-act-on-the-protection-of-persons-reporting-irregularities-2021890/

Conclusion

The research integrity watchdogs examined in this report operate under diverse frameworks, each with their own strengths and weaknesses, and all of which offer valuable insights for the design of Australia's own watchdog.

While the Australian Academy of Science's (AAS) plans for RIA are not yet available to the public, its active efforts to develop a research integrity body for Australia is a promising step in the right direction. Australia now has an opportunity to develop a world-leading model that incorporates the best practices from the many research integrity frameworks discussed in this report. However, concerns remain regarding the self-regulation of research institutions in the Academy's current plans for RIA.

Will establishing RIA as an oversight body instead of as an investigatory body be sufficient to address research misconduct? Given the retraction of more than 500 Australian research papers over the last two decades and the relatively modest improvements offered in the RIA proposal to improve the current system, we remain unconvinced. Part 1 of this report – 'The case for an independent research integrity watchdog' – details the flaws of Australia's current system.[60] Australia needs to significantly improve the current framework to effectively deal with research misconduct. There is no use in creating a toothless body that lacks real authority. A watchdog must be independent and have the authority to carry out investigations itself, without the influence of the institutions it may investigate.

RIA's plan to classify a serious breach of the Code as 'serious misconduct' is symptomatic of Australia's long-standing hesitancy to adopt a concrete definition of 'research misconduct'. The term 'serious misconduct' is not as good as the majority of overseas bodies. While the establishment of RIA would at least introduce the term 'misconduct,' the definition the body would take does not meet the international gold standard because it leaves room for varying interpretations of "a flagrant breach of the Code". Furthermore, it is unclear whether the use of the term 'serious misconduct' would be optional. To address these issues, a comprehensive definition of research misconduct that encompasses fabrication, falsification and plagiarism should be implemented. This would ensure that research institutions can no longer downplay the significance of severe unethical conduct by their researchers, and position Australia in harmony with leading regulatory bodies abroad.

The RIA proposed by the Academy does not plan to publish the findings of its investigations. This would not meet international transparency standards and would mean the body would lack a major device to incentivise researchers and institutions to actively enforce the Code.

[60] Scicluna & Denniss (2023) *Research misconduct in Australia Part 1: The case for an independent research integrity watchdog*

To protect the public and allow the effective targeting of resources, it is essential that all investigations into research misconduct be published and made publicly available. The timely and transparent reporting of investigations would also help foster confidence and trust in the independent watchdog.

By establishing a comprehensive independent regulatory body, Australia would be able to systematically collect national data on research misconduct. For the first time, it would be able to understand the scope of the issue. This would offer Australia a platform to showcase the commendable efforts made by individuals and its institutions to uphold the responsibilities and principles outlined in the Code for the responsible conduct of research. The collection of national data would not only enhance accountability but also celebrate Australia's commitment to research integrity.

Appendices

APPENDIX 1: AUSTRALIA – VOLUNTARY SELF-REGULATION UNDER THE AUSTRALIAN CODE FOR THE RESPONSIBLE CONDUCT OF RESEARCH 2018

In Australia, government-funded research supported by the Australian Research Council (ARC) and the National Health and Medical Research Council (NHMRC) must adhere to the Australian Code for the Responsible Conduct of Research 2018 (the Code).[61] The Code outlines a set of principles and responsibilities that characterise good research practice and ethics. However, it lacks a compulsory definition of research misconduct and, thus far, neither the NHMRC nor the ARC appear to have taken consequential action to enforce the Code for any of the research misconduct cases discussed in Part 1 of this series, regardless of this being within their authority.[62,63] We contacted these granting bodies to confirm whether consequential actions had been taken against individuals or institutions in the past. The NHMRC has a policy that it does not release this information, and the ARC stated that they do not comment on, or disclose, the details of individual cases.

Institutions may establish their own process for investigating research misconduct, but they must be approved by the Australian Research Integrity Committee (ARIC). As a guide, ARIC follows the process for investigation outlined in the Code. If a researcher wants to make a complaint about research misconduct, they are advised to report their allegations to an institutionally-appointed Designated Officer (DO). DOs typically hold senior positions within an institution (for example, department heads or Deputy Vice-Chancellors) and they have the power to evaluate the validity of the complaint. If they decide the complaint has merit, they will refer it to another senior staff member, known as an Assessment Officer (AO) who will collect evidence and conduct a preliminary assessment. The AO will provide written feedback to the DO who holds the authority to initiate a full investigation.

The DO holds significant power over the investigation. It is their responsibility to determine the terms of reference of an investigation and the composition of the inquiry panel, including the number of panellists and if they are internal or external to the institute. It is conceivable that the inquiry panel could consist of a single individual from within the same research institution. The inquiry panel assesses the evidence, reaches a conclusion about whether a breach has occurred and provides written recommendations to the DO. These

[61] NHMRC (2018) *Australian Code for the Responsible Conduct of Research 2018*.,

[62] NHMRC (2019) *NHMRC precautionary and consequential actions*, NHMRC Research Integrity Fact Sheet Three, https://www.nhmrc.gov.au/file/14304/download?token=FtCZe9ld

[63] ARC (2021) *Research Integrity Policy*.

recommendations are then presented to the Responsible Executive Officer (REO), who is typically an institution's Director or Chief Executive Officer, or a university's Vice-Chancellor or Deputy Vice-Chancellor. The REO holds final responsibility for the investigation. In cases where the REO agrees that a serious breach has occurred, they will decide the institute's response based on the principles in the Code. But, as the inquiry panel's findings are non-binding, the REO is not obliged to take any action based on the panel's advice.

APPENDIX 2: USA – THE OFFICE OF RESEARCH INTEGRITY

First established under a different name in 1989, the Office of Research Integrity (ORI) is an independent government agency that sits within the US Department of Health and Human Services (HHS).[64] ORI is not an investigatory body, but it oversees and assists with the investigations of research misconduct conducted by individual institutions. ORI's oversight is limited to publicly-funded health and medical research. According to the law (Code of Federal Regulations, 42 C.F.R. Part 93), research misconduct is defined as:

> "… fabrication, falsification or plagiarism in proposing, performing or reviewing research, or in reporting research results."[65]

Institutions that receive HHS funding are required to demonstrate to ORI that they have sufficient policies and procedures in place to effectively investigate cases of research misconduct. ORI has three divisions: the Office of the Director, the Division of Investigative Oversight and the Division of Education and Integrity. It has 26 paid employees.[66]

Federal law requires institutions to assign designated Research Integrity Officers (RIOs) to institutions that receive HHS funding.[61] Allegations of research misconduct are typically raised with RIOs, but may also be taken directly to ORI.[60] ORI does not have the capacity to request investigations on its own initiative. When ORI receives a direct complaint of research misconduct, it assigns the case to the institution at which the alleged misconduct took place. The RIO conducts a preliminary investigation and decides whether a complaint meets the criteria for an investigation. If so, the RIO must inform ORI and assemble an investigation panel. The investigation panel must be comprised of at least three people with relevant expertise in the field, and with no conflicts of interest.[61] Panel members may be internal to the institution. ORI's Division of Investigative Oversight assists with the investigation process to ensure the institution complies with the regulations. Once the panel reaches a verdict, the Division of Investigative Oversight uses the panel's findings to make

[64] United States, Office of Research Integrity (2016a) *Frequently asked questions*. s

[65] United States, Department of Health and Human Services (2023) *Public Health Service Policies on Research Misconduct* (42 CFR Part 93)), https://www.ecfr.gov/current/title-42/chapter-I/subchapter-H/part-93

[66] United States, Office of Research Integrity (n.d.) *ORI staff*, https://ori.hhs.gov/ori-staff

an independent decision on whether research misconduct has occurred. ORI will then develop recommendations, but ORI alone does not have the power to enact them. ORI must propose their recommendations to HHS, which has the power to impose administrative actions that can include correcting the research record, terminating public funding of the research, recovering funds involved in the research misconduct, and suspension or debarment of a researcher. When a finding of research misconduct is made, the details of the institution and individuals involved are published to the Federal Register, the National Institute of Health (NIH) Guide to Grants and Contracts, and the ORI website.

At USD 11,986,000 (approximately AUD 17,600,000) in 2023, ORI's budget is the largest of all the research integrity watchdogs discussed in this report.[67] In 2022, ORI received 269 allegations of misconduct, completed 78 investigations, and found nine instances of research misconduct.[68]

APPENDIX 3: DENMARK – THE DANISH BOARD ON RESEARCH MISCONDUCT

Established under a different name in 1992, the Danish Board on Research Misconduct (Nævnet for Videnskabelig Uredelighed, NVU) is an independent government agency that deals with research misconduct cases in Denmark.[69] NVU is an investigatory body, and its jurisdiction covers all publicly-funded research and research performed at public institutions.[70] NVU may also handle privately-funded research and private research organisations with their consent. Its authority is governed by Danish law, which distinguishes between scientific misconduct and questionable research practice. Danish law recognises research misconduct as:

> "… fabrication, falsification, and plagiarism (FFP) committed intentionally or with gross negligence when planning, performing, or reporting research."

Questionable research practices encompass "violation of generally accepted standards for responsible research practices." Cases of questionable research practice are handled by the research institution, while the law expressly forbids the internal investigation of allegations of research misconduct, which **must** be handled by the NVU.[71] The NVU Board is comprised of a High Court judge and eight to ten working academics who represent broad experience

[67] United States, Department of Health and Human Services (2023) *Fiscal year 2024, justification of estimates for Appropriations committees*, https://www.hhs.gov/sites/default/files/fy-2024-gdm-cj.pdf

[68] United States, Office of Research Integrity (2022) *Annual report FY 2022*.

[69] Kania (2023) *The Danish Board on Research Misconduct*, https://ufm.dk/en/research-and-innovation/councils-and-commissions/The-Danish-Board-on-Research-Misconduct

[70] *Act on Research Misconduct etc.* (2017) (Denmark).

[71] Danish National Research Foundation (2021) *Worth knowing: research integrity from a Danish perspective*, https://dg.dk/en/research-integrity/

within different academic disciplines. Additional experts may be sought to assist with an investigation. Board members are appointed by the Danish Minister for Higher Education and Science following an open call and consultation with the Independent Research Fund Denmark.

In Denmark, complaints of research misconduct are typically raised with the research institution at which the suspected research misconduct occurred.[67] The institution then assesses whether specific grounds for an investigation are met. If so, the institution must compose a report to notify NVU, which opens an investigation. The NVU has the authority to raise well-founded allegations of research misconduct on its own initiative. The NVU Board will conduct an independent investigation, assess the evidence and vote on an outcome. If the Board makes a finding of research misconduct, the committee can withdraw the scientific product. It can also make the outcome of its investigation known to any relevant party, including the affected institution, the researcher's employer, publishing editors and any relevant funding body.[72] Decisions by NVU are final, and appeals cannot be made to it or to any other administrative body. Anonymised decisions are published on the Ministry of Higher Education's website and are accessible to the public.

Funding for the NVU is provided through a grant that also covers the activities of the Danish Academic Committee and Advisory Committees (*Finance Act*, section 19.46.02.15.)[73,74] In 2022, the budget allocation for this grant amounted to DKK 2.1 million (approximately AUD 465,000), while expenses specifically associated with the Board were approximately DKK 540,000 (approximately AUD 119,400).[69] This is the smallest budget allocation of the research integrity watchdogs analysed in this report. In 2021, 30 investigations were initiated with a total of seven findings of research misconduct.[75] However, the number of allegations received by NVU in that period could not be identified.

APPENDIX 4: THE NETHERLANDS – THE NATIONAL BODY FOR SCIENTIFIC INTEGRITY

Established in 2003, the National Body for Scientific Integrity (Landelijk Orgaan Wetenschappelijke Integriteit, LOWI) is an independent, not-for-profit advisory body. It does not have an investigatory function. Rather, LOWI assesses the verdicts of institutional investigations into violations of the Netherlands Code of Conduct for Research Integrity

[72] Kania (2023) *Afgørelser*, https://ufm.dk/forskning-og-innovation/rad-og-udvalg/Naevnet-for-Videnskabelig-Uredelighedelighed/afgorelser Use English translation

[73] Personal communication withthe Secretariat for the Danish Board on Research Misconduct, 6 July 2023.

[74] Finansministeriet (2023) *Finansloven for 2023 - Tekst og anmærkninger § 19. Uddannelses- og Forskningsministeriet*, https://fm.dk/media/27172/fl23a19.pdf Use English translation

[75] Ekholm (n.d.) *Årsberetning 2021 Nævnet for Videnskabelig Uredelighed*, https://ufm.dk/publikationer/2022/filer/arsberetning-nvu-2021-220822.pdf Use English translation

2018 (the Dutch Code).[76] The definition of research misconduct in the Dutch Code closely resembles that of the Australian Code, though the Dutch definition is mandatory and not simply a recommendation. It states:

> "… in serious cases, non-compliance with one or more standards constitutes 'research misconduct'."

Another similarity with the Australian Code is that the Dutch Code evaluates non-compliance on a spectrum ranging from research misconduct (with FFP included as the primary example), to questionable research practices and minor shortcomings.[77]

Unlike the other regulators discussed in this report, LOWI is financed by membership fees rather than by government.[73] To receive LOWI's advice, public and private organisations must become members. Currently, 21 research institutions are affiliated with LOWI.[72] LOWI signatories must adhere to the Code "by virtue of self-regulation". Under the Code, institutions are required to conduct an investigation when deemed necessary by their own internal research integrity committee.[73,78] LOWI does not oversee or mediate these institution-led investigations. Instead, it provides a secondary opinion on the outcome of an institution's investigation if there are disagreements with the provisional judgement. LOWI does not have the authority to initiate investigations on its own initiative.[74] LOWI consists of six academic researchers with diverse backgrounds in the natural sciences, humanities, law, social sciences and behavioural sciences, and a Chair with a legal background. Independent expert opinions may be sought if necessary.

At Dutch research institutions, complaints are typically raised with the internal research integrity committees. A committee will assess whether there are grounds for an investigation according to the standards outlined in the Code.[74] If the grounds are met, the committee will proceed with a preliminary investigation in line with the policies of an individual institution. After completing the preliminary investigation the research integrity committee will present their findings and recommendations to the institution's board, who will make a provisional decision based on the evidence and the committee's advice.[79]

In cases where accused individuals are dissatisfied with the outcome of an investigation, they can submit a petition for a second opinion to LOWI, which will assess whether there is sufficient evidence to provide a second opinion to the organisation's board. LOWI will first complete a review of competence to determine whether the investigation met procedural standards.[74] Once this is established, LOWI may make a decision or it may call for a hearing with the parties involved. LOWI will compose a second opinion and recommend actions such as sanctions or request an additional investigation to be conducted by the institution;

[76] LOWI (2023) *About LOWI*, https://lowi.nl/en/about-lowi/
[77] KNAW and others (2018) *Netherlands code of conduct for research integrity*.
[78] ENRIO (2019) *Country report Netherlands*.
[79] LOWI (2023) *Documents – LOWI Regulations 2022*, https://lowi.nl/en/documents/

however, its opinions are non-binding and cannot be appealed.[80] Ultimately, it is up to the research institution to decide whether it will act on LOWI's advice. The Code suggests penalties that include formal reprimand, transfer, demotion or dismissal.[57] It also includes a provision that whistleblowers be protected from reprisals. LOWI publishes its opinions on its website. The names of researchers are anonymised, but the names of institutions are public.

In 2021 LOWI's budget allocation was EUR 427,600 (approximately AUD 705,000).[81] In 2022, LOWI received 29 petitions, carried out 19 proceedings, and did not find any instances of research misconduct.[82]

APPENDIX 5: GERMANY – THE GERMAN RESEARCH OMBUDSMAN

The German Research Ombudsman was established in 1999 as an independent statutory body by the German Research Foundation (DFG).[83] The Ombudsman's remit covers all public and private research that receives DFG funding. The Ombudsman does not conduct investigations into allegations of research misconduct. Instead, the responsibility for investigations lies with the institute where the allegations are raised.[84] The Ombudsman has an advisory role that is focussed on solution-oriented conflict resolution and provides support on matters related to infringements of good research practice. The Ombudsman bases its advice on the 'Guidelines for Safeguarding Good Research Practice Code of Conduct' (the German Code).[79] The German Code does not include a standardised definition of research misconduct, but states that institutions:

> "shall establish procedures for dealing with allegations of research misconduct including a definition of categories of action which seriously deviate from good scientific practice and are held to be research misconduct."

To be eligible to receive DFG funding, university and non-university research institutions must implement the German Code.[85] The German Code recognises that there are no definitive boundaries between research misconduct, questionable research practices and

[80] LOWI (2023) *Information for parties*, https://lowi.nl/en/information-for-parties/

[81] LOWI Foundation (2021) *LOWI Foundation annual report 2021*, https://lowi.nl/wp-content/uploads/2022/09/Jaarverslag_SLOWI_2021.pdf

[82] LOWI (2023) *Advisory opinions*.

[83] DFG (2022) *German Research Ombudsman*, https://www.dfg.de/en/research_funding/principles_dfg_funding/good_scientific_practice/ombudsman/index.html

[84] German Research Ombudsman (2023b) *FAQ – Frequently asked questions*, https://ombudsman-fuer-die-wissenschaft.de/4174/faq-frequently-asked-questions/?lang=en

[85] DFG (2022) *Good research practice*, https://www.dfg.de/en/research_funding/principles_dfg_funding/good_scientific_practice/index.html

sloppy work, though it suggests FFP as clear examples of severe misconduct.[86] It has a central office that can be directly approached by researchers, in addition to a network of over 900 ombudsman-affiliated, institutionally-appointed local ombudspersons.[87]

The German Research Ombudsman consists of three parts: the committee, the office, and a research team. The committee is comprised of four working academics who serve on a voluntary basis and are appointed by the DFG. The office consists of four paid employees who provide advice to enquirers, typically over the phone. The research team includes three paid employees with research experience who moderate online discussion hubs developed to address the three most common queries received by the office: authorship conflicts, plagiarism and dealing with research data. External experts can be approached if additional support is required.

Any researcher or institution can seek advice from the Ombudsman. Questions can be raised either with local ombudspersons, or to the office in person, over the phone, or online. The office then determines whether to act on the matter. If it does, the committee and office staff collaborate to gather further information, statements and, in some cases, arranges a mediation meeting to arbitrate between researchers in instances of conflict. Advice provided by the German Research Ombudsman is not legally binding, and appeals cannot be made to the office if parties disagree with the outcome of a local investigation. The advice is forwarded to the research institute in question which has the authority to impose sanctions.

The German Research Ombudsman's role is to resolve 'remedial misconduct' through proposing compromises. If the Ombudsman suspects that severe "irremediable scientific misconduct" has occurred, it notifies the DFG's Committee of Inquiry on Allegations of Scientific Misconduct.[88] This committee comprises eight members with different academic backgrounds in the humanities and sciences, and has the authority to carry out investigations and hearings.[89] If the committee determines that research misconduct has occurred it presents the results of its investigation, along with its recommendations, to the DFG's Joint Committee, which is made up of over 50 members of government.[90] Depending on the type and severity of the misconduct, the Joint Committee can rule to "prevent the perpetrator from submitting proposals to the DFG for several years, to rescind a funding

[86] ENRIO (2019) *Country Report Germany*, http://www.enrio.eu/country-reports/germany/

[87] German Research Ombudsman (2023) *List of Ombudspersons*.

[88] German Research Ombudsman (2023) *Procedural Guidelines of the Research Ombudsman*, https://ombudsman-fuer-die-wissenschaft.de/4154/procedural-principles-of-the-research-ombudsman/?lang=en

[89] DFG (2019) *Committee of Inquiry on Allegations of Scientific Misconduct*, https://www.dfg.de/en/dfg_profile/statutory_bodies/joint_committee/inquiry_misconduct/index.html

[90] DFG (2019) *Joint Committee*, https://www.dfg.de/en/dfg_profile/statutory_bodies/joint_committee/index.html

decision, or to exclude the perpetrator from participation in DFG statutory bodies."[91] Findings of research misconduct are published as media releases with names and institutions deidentified on the DFG website.[92]

In 2022, the Ombudsman received 206 inquiries, and 12 new ombudsman procedures for mediation were opened.[93] Six instances of research misconduct were found by the DFG.[94] The budget allocation for the German Research Ombudsman and the DFG's Committee of Inquiry on Allegations of Scientific Misconduct could not be determined.

APPENDIX 6: SWEDEN – THE SWEDISH NATIONAL BOARD FOR ASSESSMENT OF RESEARCH MISCONDUCT

Established in 2020, the Swedish National Board for Assessment of Research Misconduct (Nämnden för prövning av oredlighet i forskning, Npof) is a central government agency that has the authority to investigate allegations of research misconduct.[95] Npof's jurisdiction covers all publicly-funded and some privately-funded research institutions. The definition of research misconduct is integrated into Swedish law in the *Act on Responsibility for Good Research Practice and the Examination of Research Misconduct* (the Act).[96] The Swedish definition of research misconduct, which is standardised across all research institutions, is clear:

> "… a serious deviation from good research practice in the form of fabrication, falsification or plagiarism that is committed intentionally or through gross negligence when planning, conducting or reporting research."

The Act differentiates between research misconduct and other breaches of good research practice, which are defined as "deviations from good research practice that do not count as research misconduct but substantially damage, or risk damaging, the integrity of the research or the researchers, and are committed intentionally or with gross negligence in the planning, execution or reporting of research, or of artistic research and development."[97] The Npof board is appointed by the Swedish government and comprises nine working academics

[91] DFG (2022) *Misconduct Investigation Procedure*, https://www.dfg.de/en/research_funding/principles_dfg_funding/good_scientific_practice/process_detail/index.html

[92] Kretzschmar (2020) *Pressemitteilungen der DFG zu Fällen wissenschaftlichen Fehlverhaltens der letzten zehn Jahre* English translation

[93] DFG (2022) *Annual report 2022* link

[94] DFG (2023) *DFG press releases on cases of scientific misconduct over the past ten years*, https://wissenschaftliche-integritaet.de/pressemitteilungen-wiss-fehlverhaltens/

[95] Npof (n.d.) *About us*.

[96] *Act on responsibility for good research practice and examination of misconduct in research (2019:504)* (Sweden)

[97] Npof (n.d.) *What research misconduct means*, https://npof.se/en/research-misconduct/

with expertise in a range of areas, and a Chair with legal expertise. Npof also has an office that consists of paid administrative staff, and case workers with a research background who assist with investigations. While allegations of research misconduct may be made anonymously, Npof and the Act do not contain explicit protections for whistleblowers.[98] However, whistleblowers are covered by protections offered within the *Act on the Protection of Persons Reporting Irregularities* (Swedish Act (2021:890)).[99]

All complaints concerning research misconduct are reported directly to Npof, and not an institutional representative.[100] Both individuals and organisations can make submissions to Npof, but these must be accompanied by preliminary documentation containing information and evidence. Npof also has the authority to request investigations on its own initiative if a matter comes to its knowledge. Upon receipt of a submission, Npof will evaluate the preliminary evidence and determine whether the criteria for initiating an investigation are met. If so, and if the case requires specialised knowledge or an in-depth investigation, an expert may be approached. The alleged offender is invited to make a written statement in response to the complaint.[93] The committee and caseworkers will assess the evidence and reach a decision as to whether research misconduct occurred. Npof's findings are not binding, and it is the responsibility of the institution involved to act on Npof's decision.[98] Npof has an in-built appeals process where researchers found guilty of misconduct may appeal decisions in the administrative courts. All decisions are publicly disclosed on the Npof website. Although the identities of the involved individuals are redacted, institutions remain identifiable.

Npof received 40 reports of research misconduct, initiated 32 investigations, and found two cases of research misconduct in 2021.[101] In the same year, the budget allocation for Npof was SEK 8,309,000 (approximately AUD 1.2 million).[102]

[98] Npof (n.d.) *FAQ*.

[99] *Act on the Protection of Persons Reporting Irregularities* (2012:890) (Sweden)

[100] Npof (n.d.) *Reporting suspected research misconduct*, https://npof.se/en/report/

[101] Npof (n.d.) *Publications*.

[102] Npof (2021) *Annual report 2021*, https://npof.se/wp-content/uploads/2022/06/Arsredovisning-2021.pdf

APPENDIX 7: COMPARISON TABLE OF RESEARCH INTEGRITY WATCHDOGS FROM OVERSEAS

Name	The Office for Research Integrity (ORI)	The Danish Board on Research Misconduct (NVU)	The Netherlands Board on Research Integrity (LOWI)	The German Research Ombudsman	The National Board for Assessment of Research Misconduct (Npof)
Standardised definition of research misconduct	Yes	Yes	No	No	Yes
Government body	Yes	Yes	No (not-for-profit)	Yes	Yes
Direct reporting	Yes	No	No	Yes	Yes
Can request an investigation	No	Yes	No	No	Yes
Investigatory powers	No	Yes	No	No	Yes
Allegations received	269 (2022)	N/A	29 (2022)	206 (2022)	40 (2021)
Proceedings/investigations per year	78 (2022)	30 (2021)	19 (2022)	12 (2022)	25 (2021)
Research misconduct findings per year	9 (2022)	7 (2021)	0 (2022)	6 (DFG 2022)	2 (2021)
Remit	Health science, publicly funded	All public and privately funded research (private with consent)	Science, member organisations	All public and privately funded research	All public and some private
Budget	USD 11,986,000 (2023)	DKK 2,100,000 (2022)	EUR 427,600 (2021)	N/A	SEK 8,309,000 kr (2021)
Public reporting of investigation outcomes	Yes. Identified. Only decisions of research misconduct	Yes. Anonymised. All decisions	Yes. Anonymised. All decisions	Yes. Anonymised. Only decisions of research misconduct	Yes. Anonymised. All decisions
Findings are binding	No	Yes	No	No	No
Built in law	No	Yes	No	No	Yes
Whistleblower provisions	Yes	Yes	No	Yes	No
Decisions can be appealed	Yes	No	No	No	Yes