

Post-publication corrections in preclinical cancer research- the view from the trenches

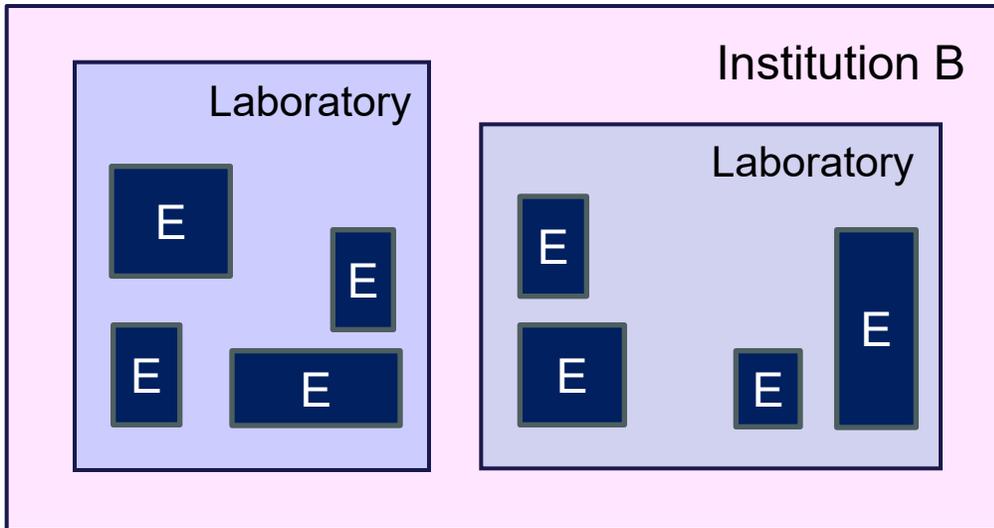
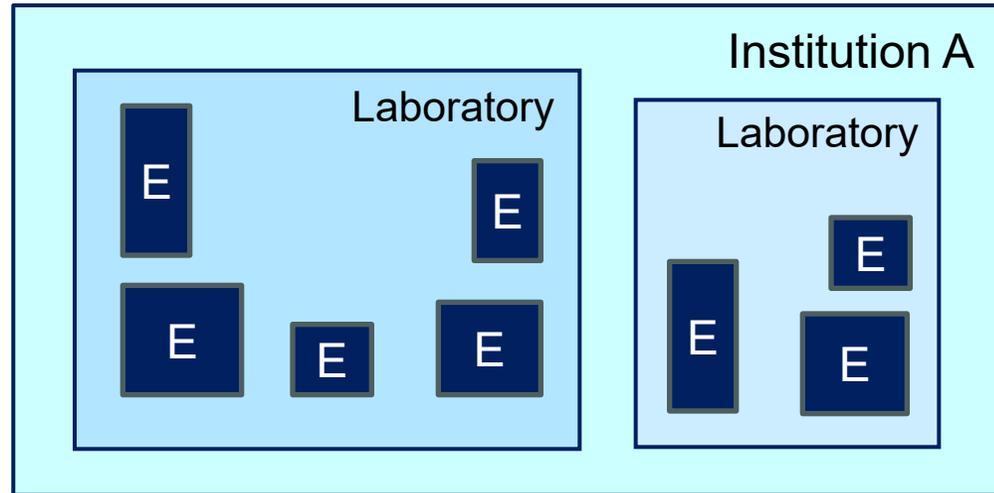
Jennifer Byrne PhD

Director of Biobanking- NSW Health, NSW Health Pathology
Professor of Molecular Oncology, Faculty of Medicine and Health,
The University of Sydney, Australia

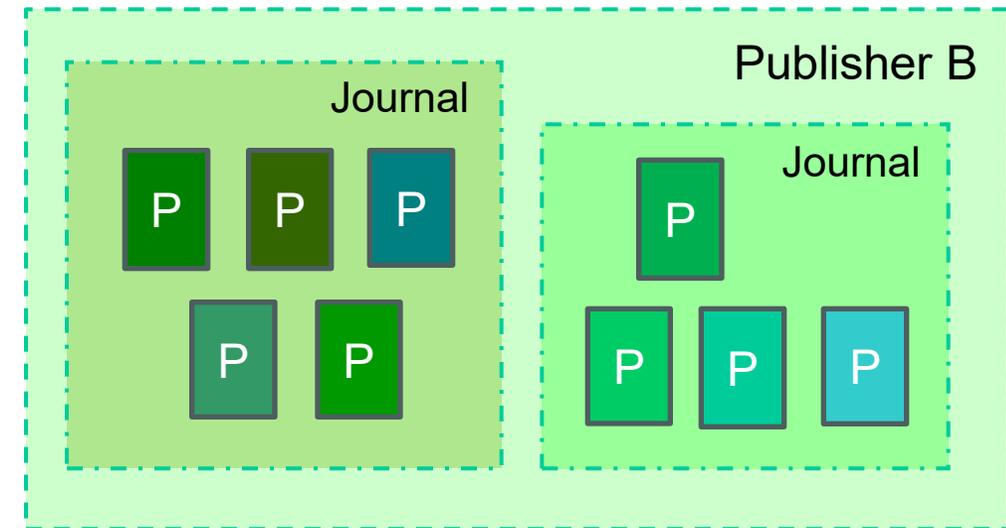
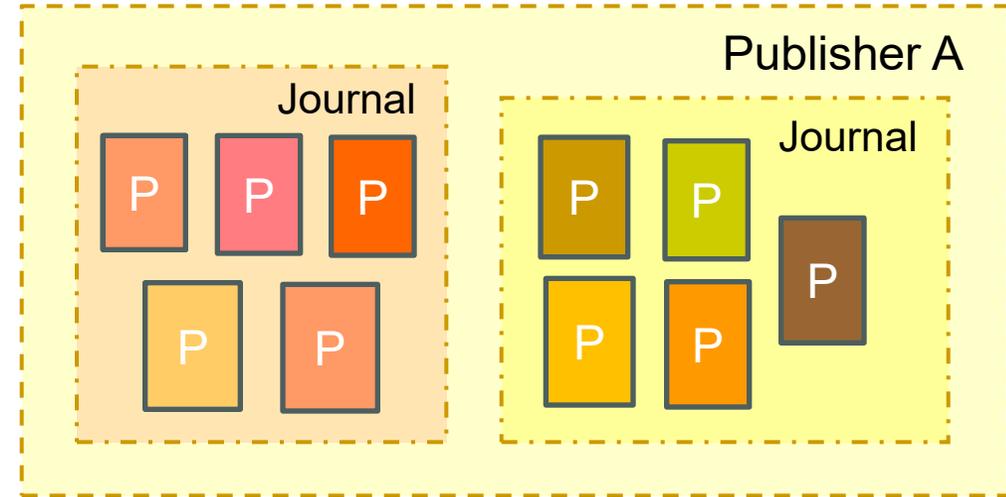
jennifer.byrne@health.nsw.gov.au [@jabyrnesci.bsky.social](https://bsky.app/profile/jabyrnesci.bsky.social)

Where do researchers work?

Research laboratories



Research literature





LABORATORY SAFETY

 **Lab coats must be worn**

 **No open-toe footwear
in this area**

 **No eating or drinking
in this area**

 **Danger
Hazardous substances**

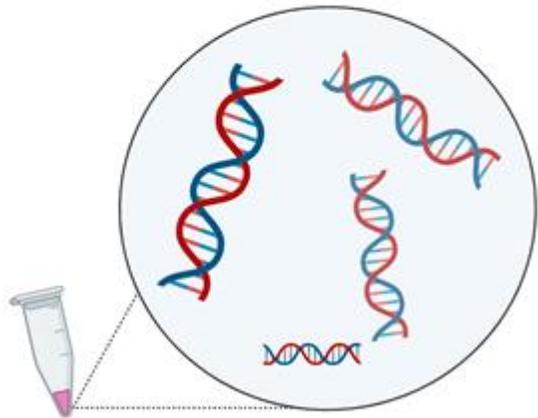
A white rectangular panel with a black border. At the top is a green horizontal bar with the text "LABORATORY SAFETY" in white, bold, sans-serif capital letters. Below this are four rows, each with an icon on the left and text on the right. The first row has a white lab coat icon in a blue circle, followed by the text "Lab coats must be worn" in white, bold, sans-serif font on a blue background. The second row has a red circle with a diagonal slash over a white icon of an open-toe shoe, followed by the text "No open-toe footwear in this area" in white, bold, sans-serif font on a red background. The third row has a red circle with a diagonal slash over a white icon of a hand holding a cup and a plate, followed by the text "No eating or drinking in this area" in white, bold, sans-serif font on a red background. The fourth row has a yellow triangle with a black border and a black exclamation mark, followed by the text "Danger Hazardous substances" in black, bold, sans-serif font on a yellow background.

Approaches to flag faulty or broken publications

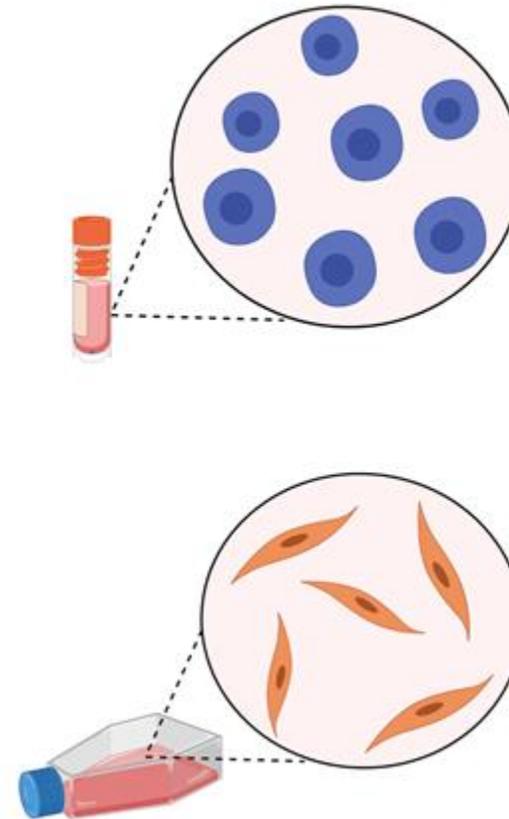
Approach	Easy/ quick?	Publication repaired?	Potential limitations
Discuss publication with colleagues	Yes	No	<ul style="list-style-type: none"> Typically limited to small groups
Contact authors	Yes	No	<ul style="list-style-type: none"> Authors may not respond to reader queries Author contact details can change over time
Post PubPeer notification	Yes	No	<ul style="list-style-type: none"> Requires awareness/ use of PubPeer
Comment directly on publication/ preprint	Yes	No	<ul style="list-style-type: none"> Requires awareness of comment functions offered by individual journals/ preprint servers
“Bug bounty”/ error detection initiatives	Yes	No	<ul style="list-style-type: none"> Requires awareness of error detection initiatives
Describe publication to journal and/or publisher	Yes/ No	Yes/ No	<ul style="list-style-type: none"> Some journals do not list contact details for enquiries Publications can be repaired if journals and publishers take action
Publish letter to editor or commentary	No	No	<ul style="list-style-type: none"> Letters to editor/ commentaries may not be linked with queried publications

Our team's experience with seeking post-publication corrections

Nucleotide sequence reagents



Cell lines



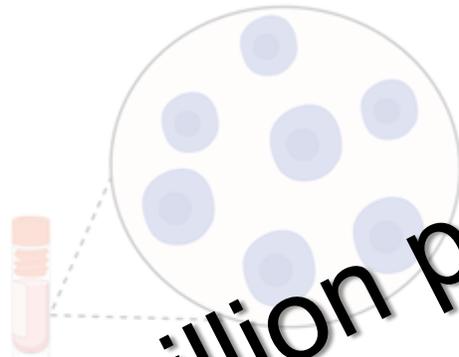
<https://www.coriell.org/1/NIGMS/Additional-Resources/Available-Products>

Nucleotide sequence reagents

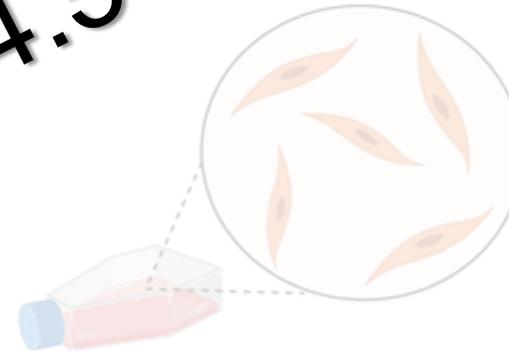


3 Nobel prizes
>5 million papers

Cell lines



>4.5 million papers



Nucleotide sequence reagent identity errors

	Claimed status	Verified status	Consequences
Claimed targeting yet wrong target	5'- gene X -3'	5'- gene Y -3'	Irrelevant and/or impossible data
Claimed non-targeting yet targeting	5'- no target -3'	5'- gene X -3'	Use of invalid negative control
Claimed targeting yet non-targeting	5'- gene Y -3'	5'- no target -3'	Impossible data

Scientometrics

<https://doi.org/10.1007/s11192-021-03871-9>



The thin ret(raction) line: biomedical journal responses to incorrect non-targeting nucleotide sequence reagents in human gene knockdown publications

Jennifer A. Byrne^{1,2}  · Yasunori Park²  · Rachael A. West^{2,3}  ·
Amanda Capes-Davis^{2,4}  · Bertrand Favier⁵  · Guillaume Cabanac⁶  ·
Cyril Labbé⁷ 

Problematic journal responses

Different responses
to the same error
(including by same
journals)

Temporally slow
responses

Responses that did
not refer to the
reported error

One journal that
chose to take no
action

Published Online: 12 January, 2022 | Supp Info: <http://doi.org/10.26508/lsa.202101203>

Downloaded from life-science-alliance.org on 13 January, 2022

Research Article

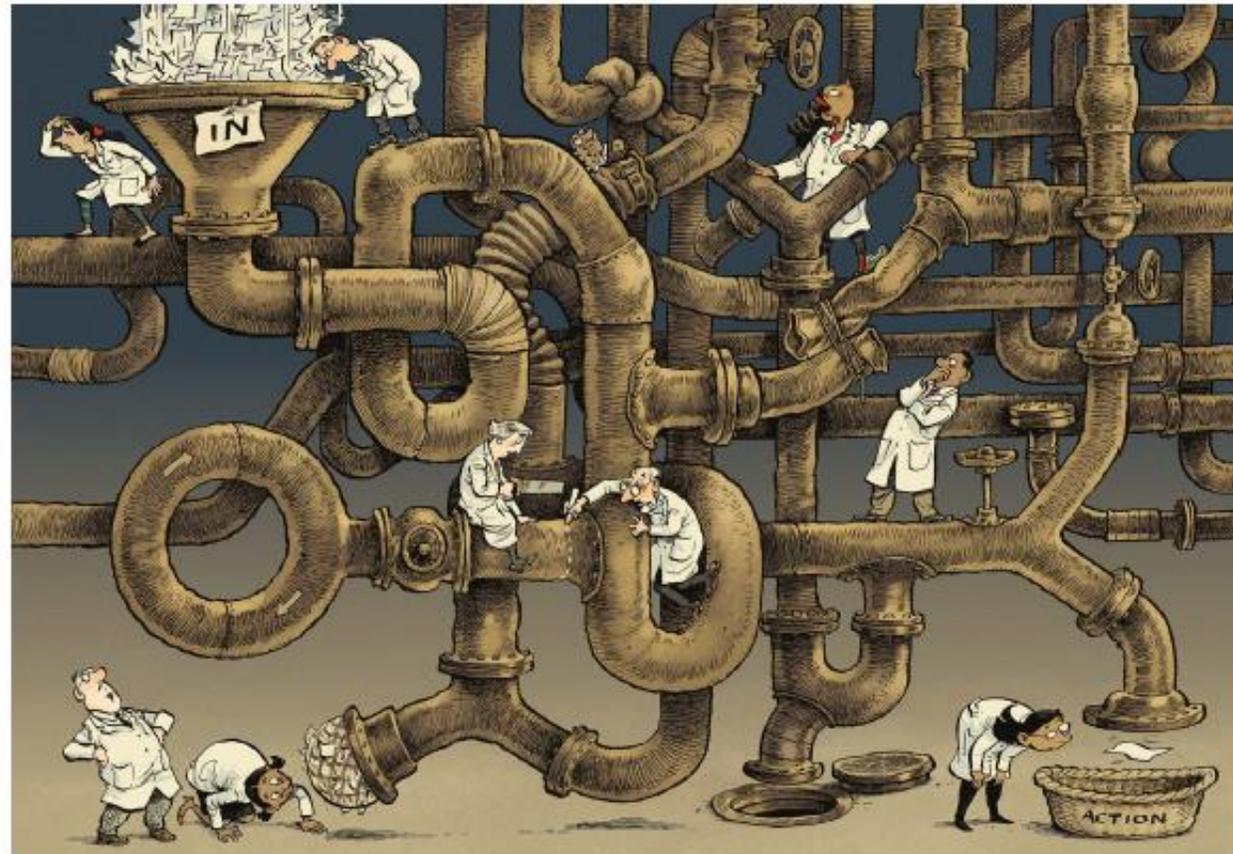


Identification of human gene research articles with wrongly identified nucleotide sequences

Yasunori Park¹ , Rachael A West^{1,2} , Pranujan Pathmendra¹ , Bertrand Favier³, Thomas Stoeger^{4,5,6},
Amanda Capes-Davis^{1,7} , Guillaume Cabanac⁸, Cyril Labbé⁹, Jennifer A Byrne^{1,10} 

Setting the agenda in research

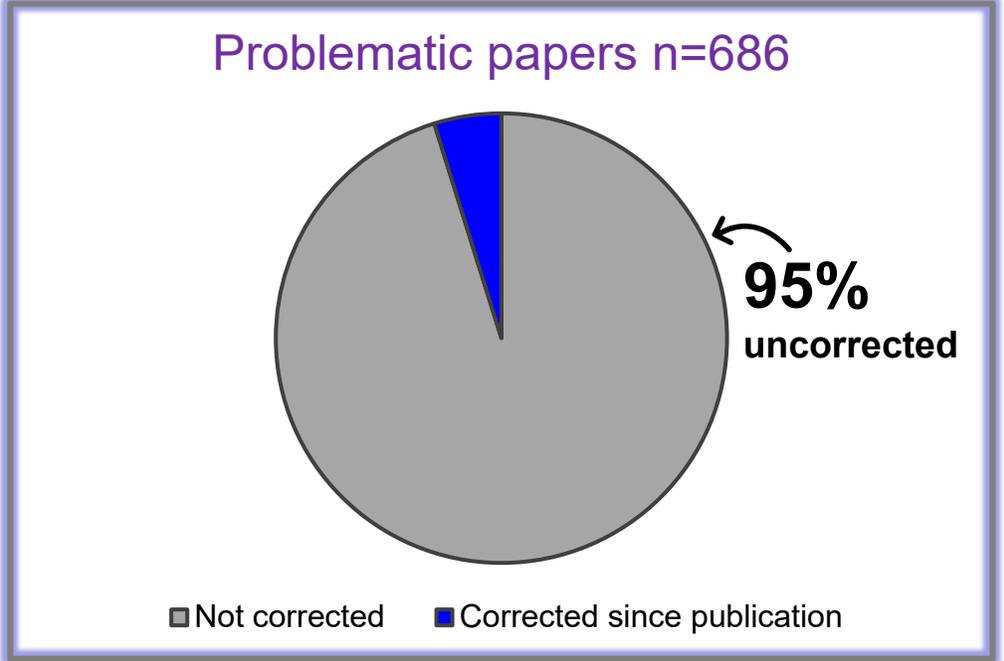
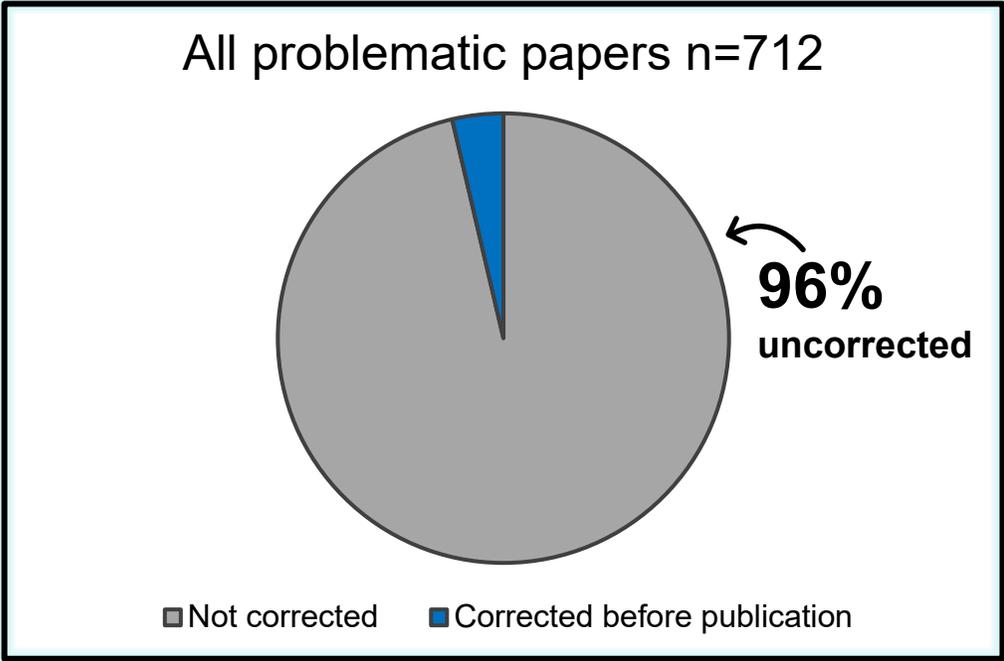
Comment



How to improve assessments of publication integrity

Andrew Grey, Alison Avenell, Andrew A. Klein, Jennifer A. Byrne, Peter Wilmschurst & Mark J. Bolland

Post-publication corrections (Park et al. 2022)

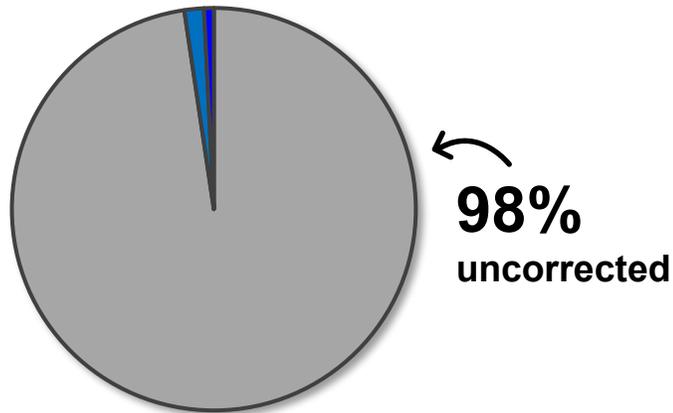


Post-publication corrections by *Gene* and *Oncology Reports*

(Park et al. 2022)



Problematic papers n=128

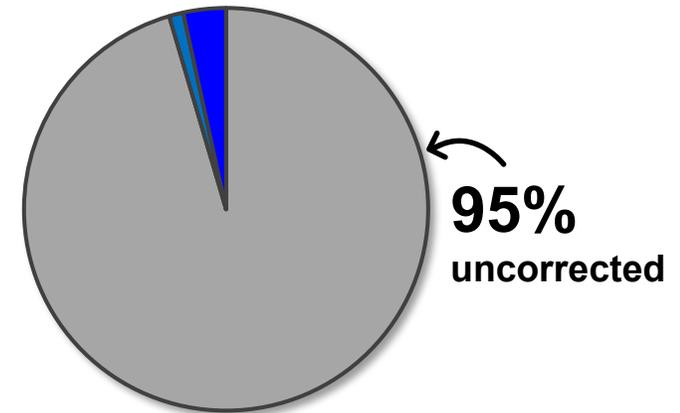


■ Not corrected ■ Corrected before publication
■ Corrected after publication

COPE member journal



Problematic papers n=440



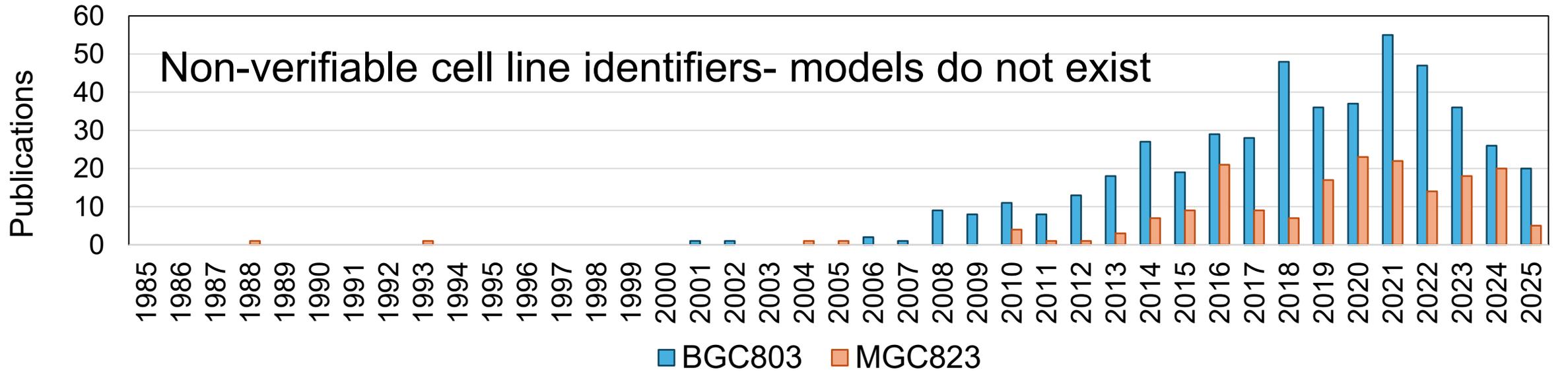
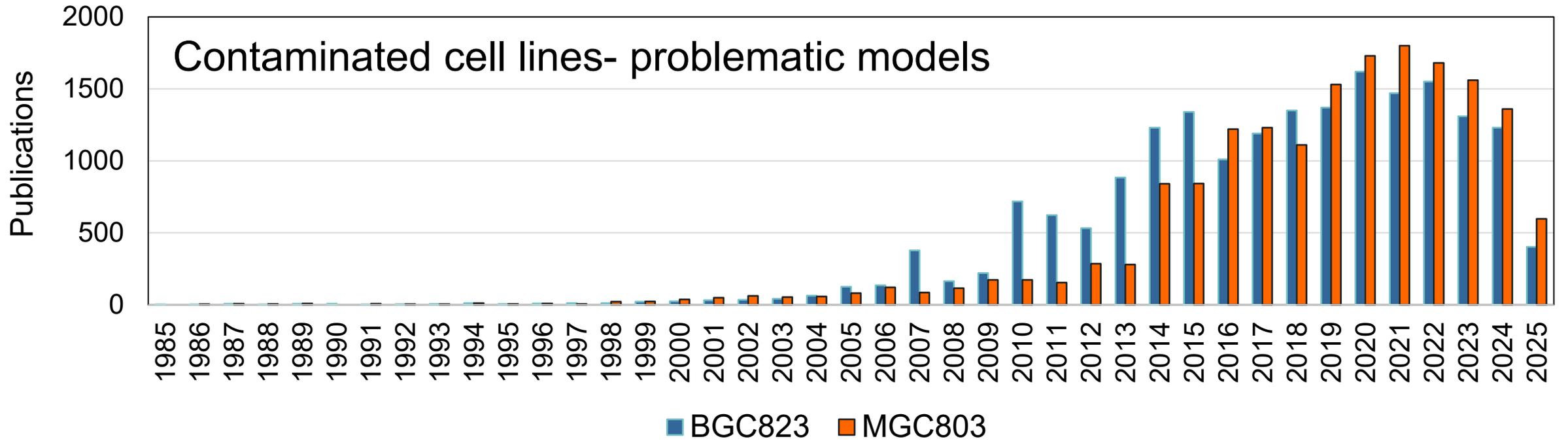
■ Not corrected ■ Corrected before publication
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not COPE member journal

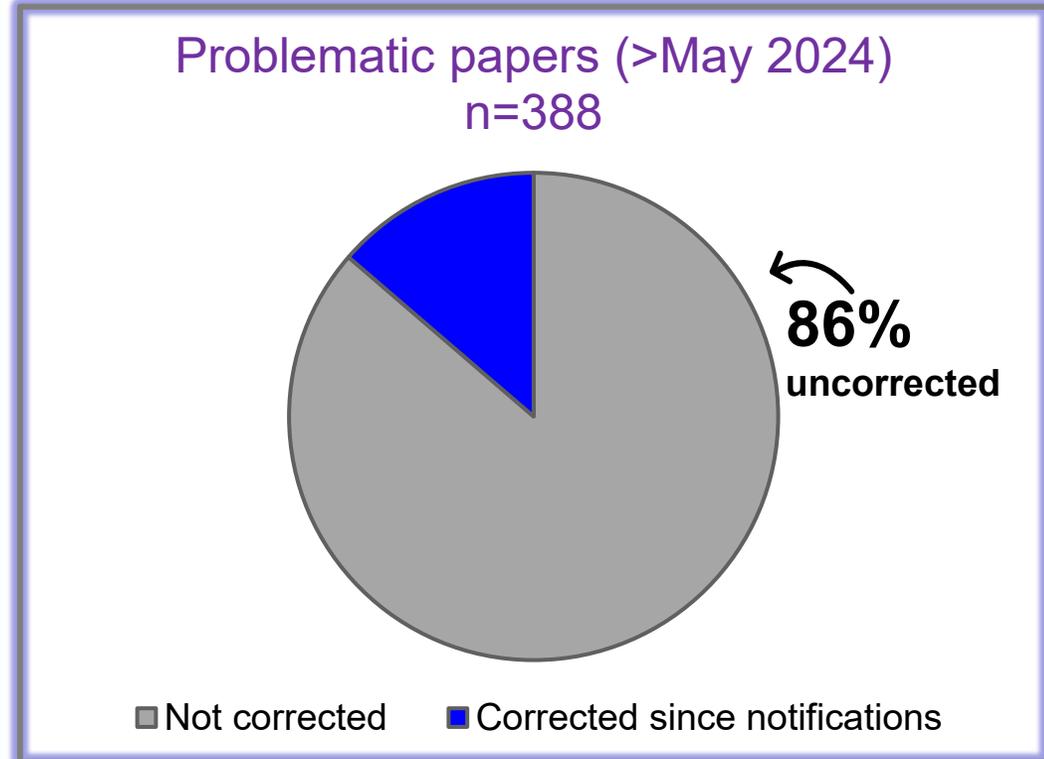
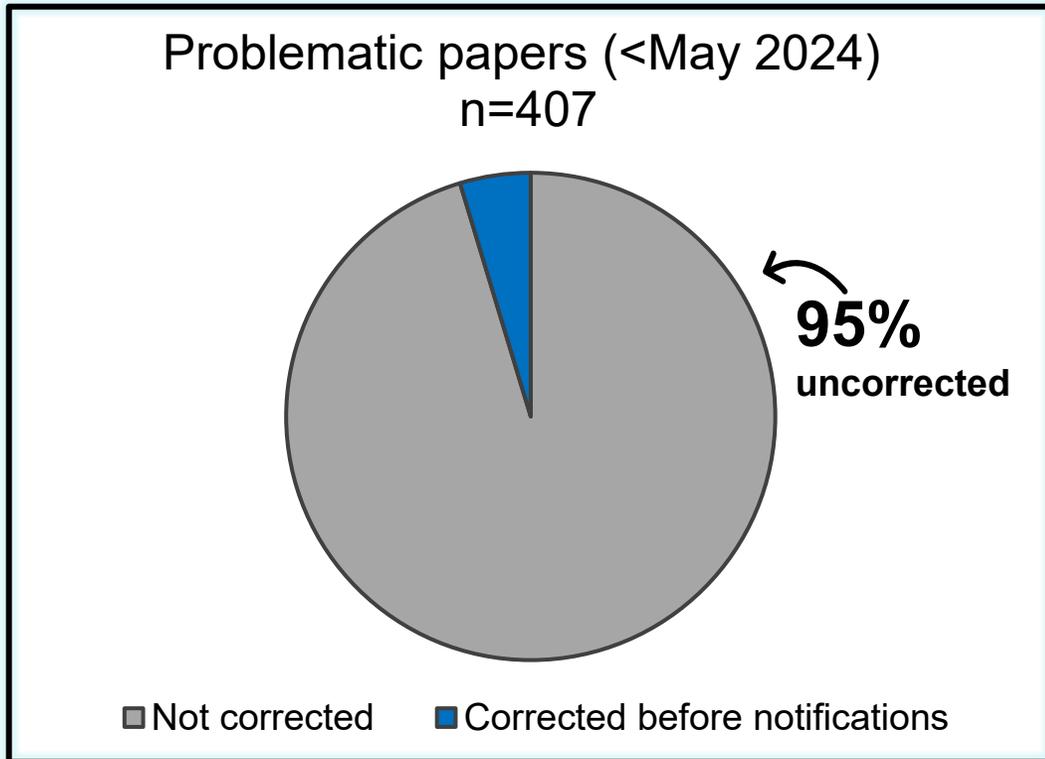
Grey et al. (2024) *Nature*

Misspellings or “miscellings”—Non-verifiable and unknown cell lines in cancer research publications

Danielle J. Oste^{1,2} | Pranuwan Pathmendra¹ | Reese A. K. Richardson³ |
Gracen Johnson¹ | Yida Ao¹ | Maya D. Arya¹ | Naomi R. Enochs¹ |
Muhammed Hussein¹ | Jinghan Kang¹ | Aaron Lee¹ | Jonathan J. Danon⁴ |
Guillaume Cabanac^{5,6} | Cyril Labbé⁷ | Amanda Capes Davis⁸ |
Thomas Stoeger^{9,10,11} | Jennifer A. Byrne^{1,12} 

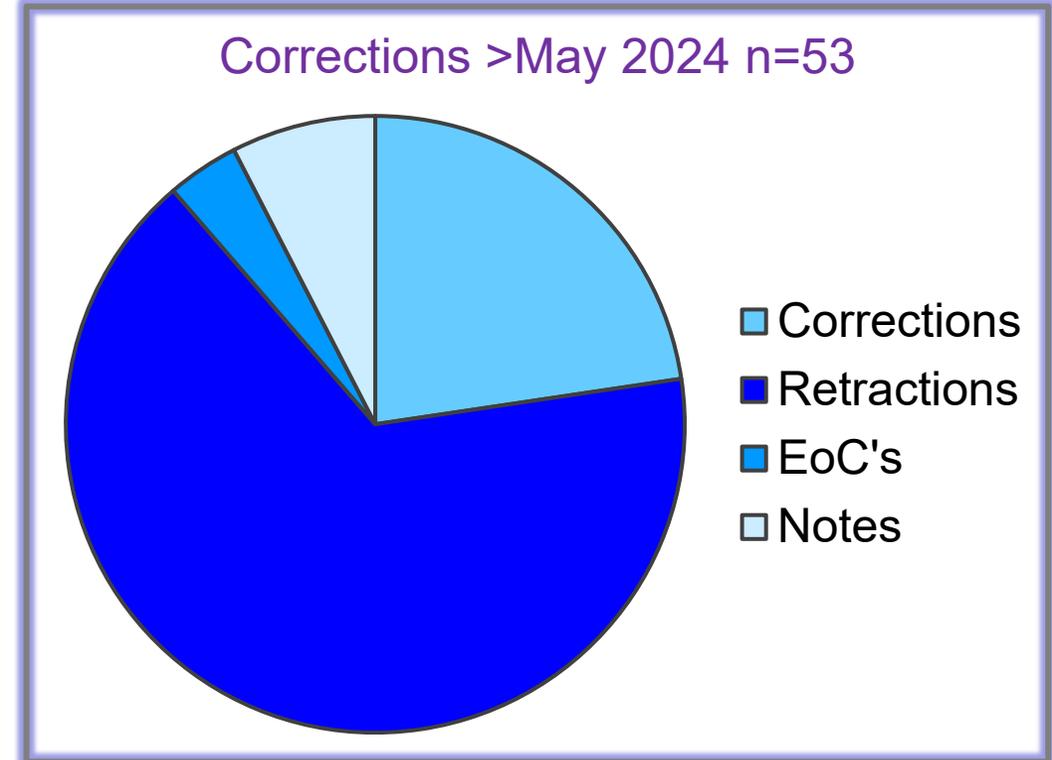
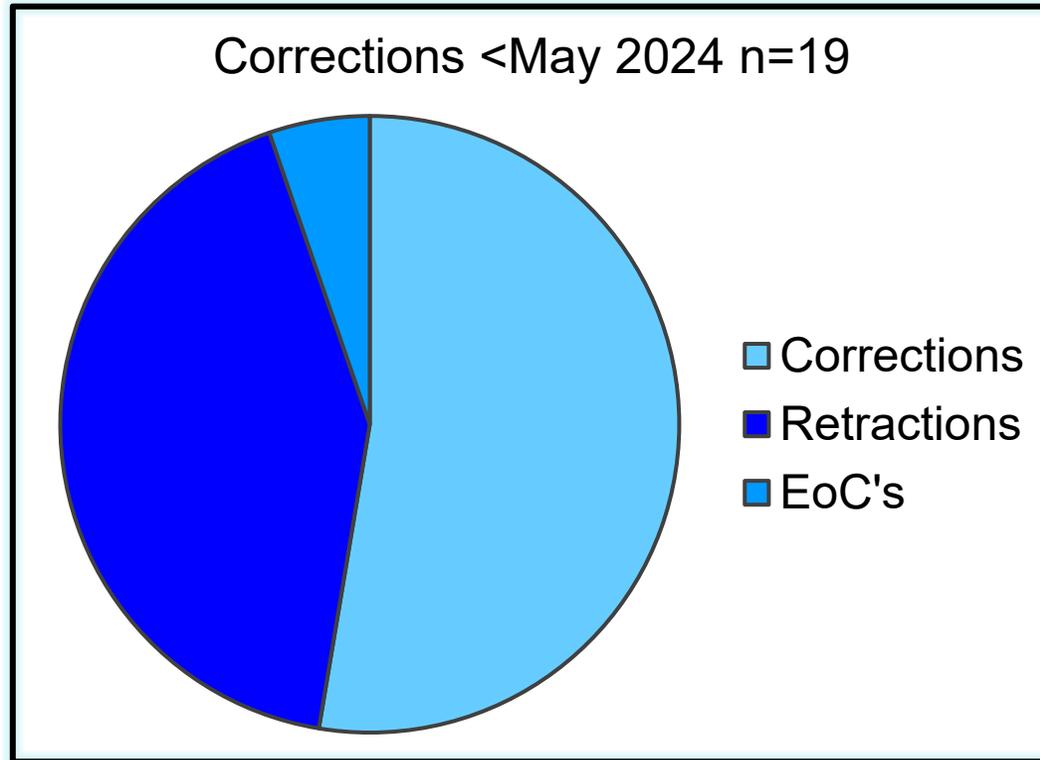


Post-publication corrections to problematic papers (Oste et al. 2024)



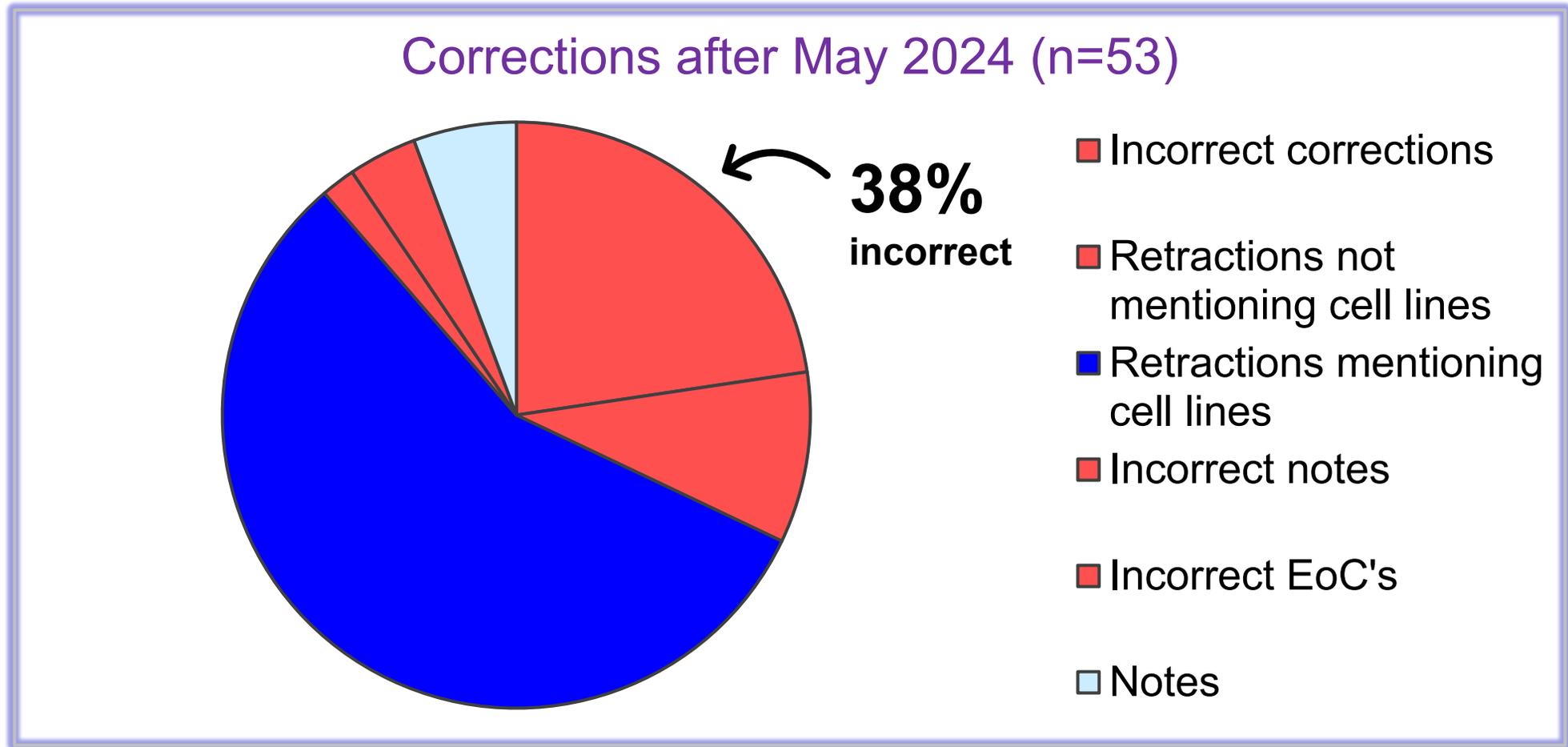
Oste et al. *unpublished data*

Post-publication corrections to problematic papers (Oste et al. 2024)



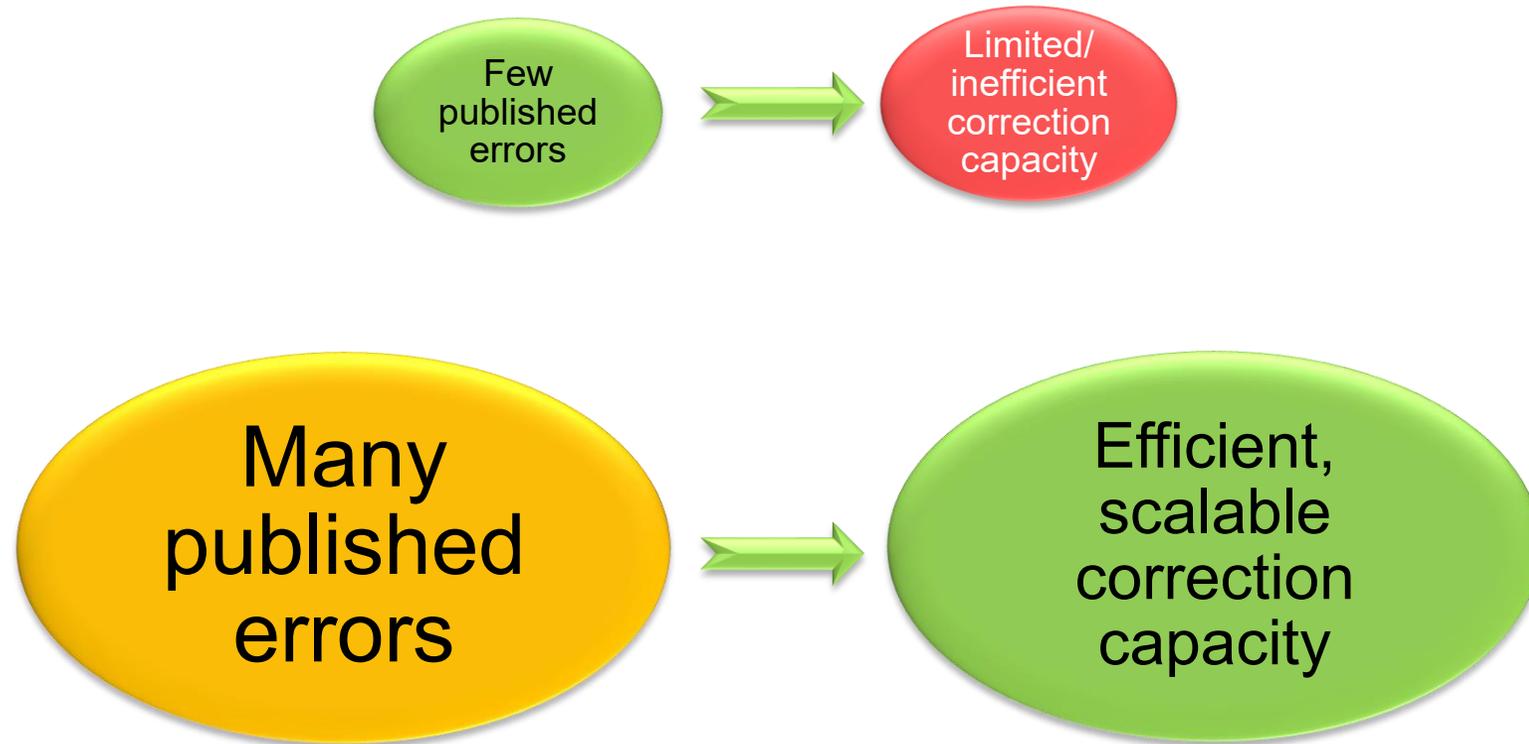
Oste et al. *unpublished data*

Problematic or incorrect corrections (Oste et al. 2024)

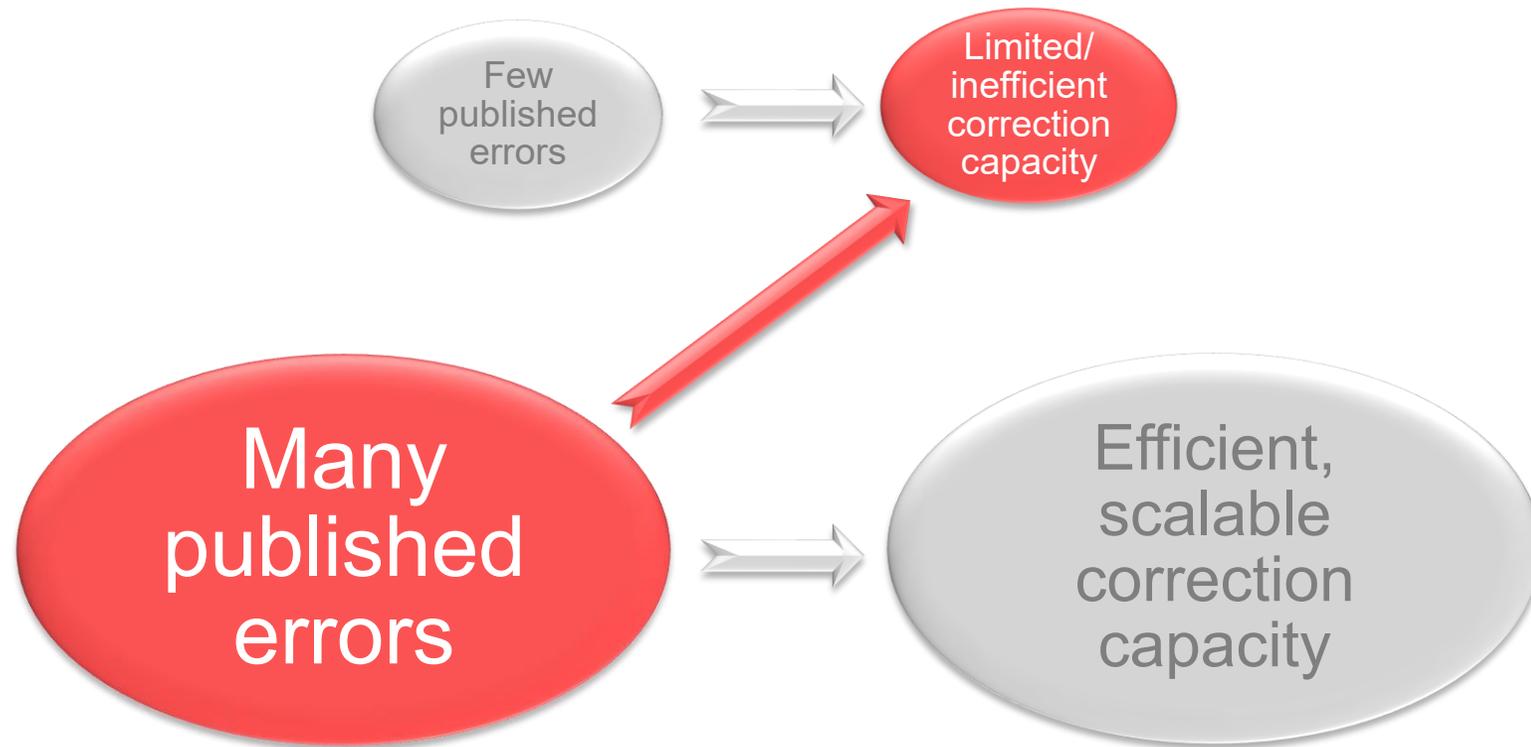


Oste et al. *unpublished data*

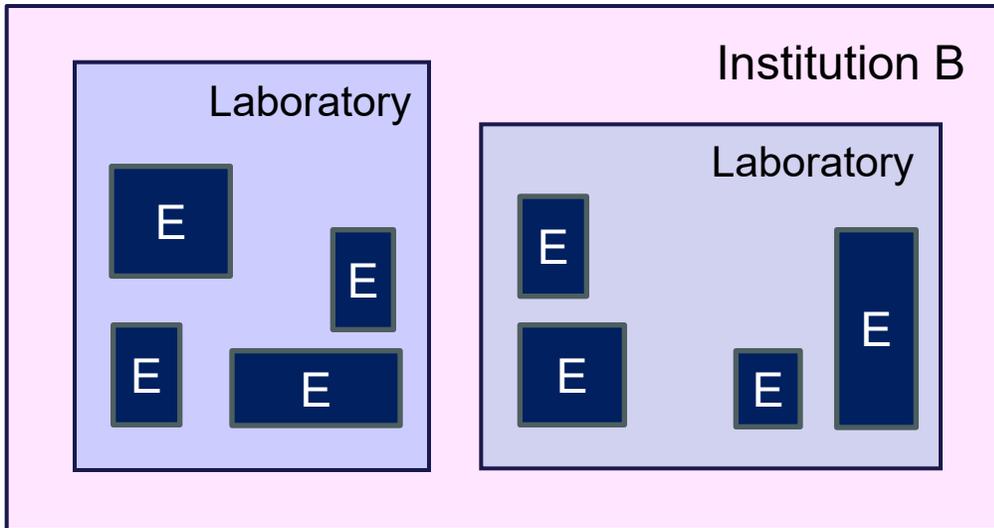
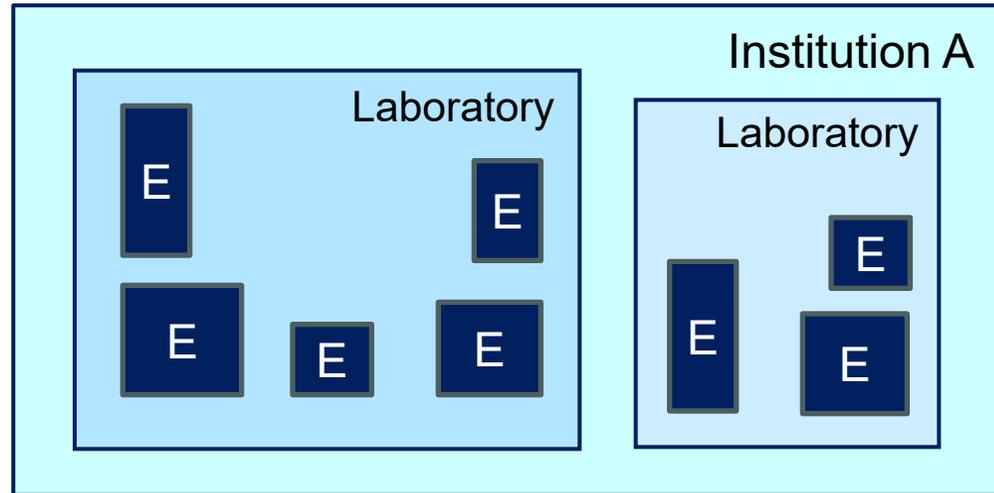
Ideal post-publication correction capacity



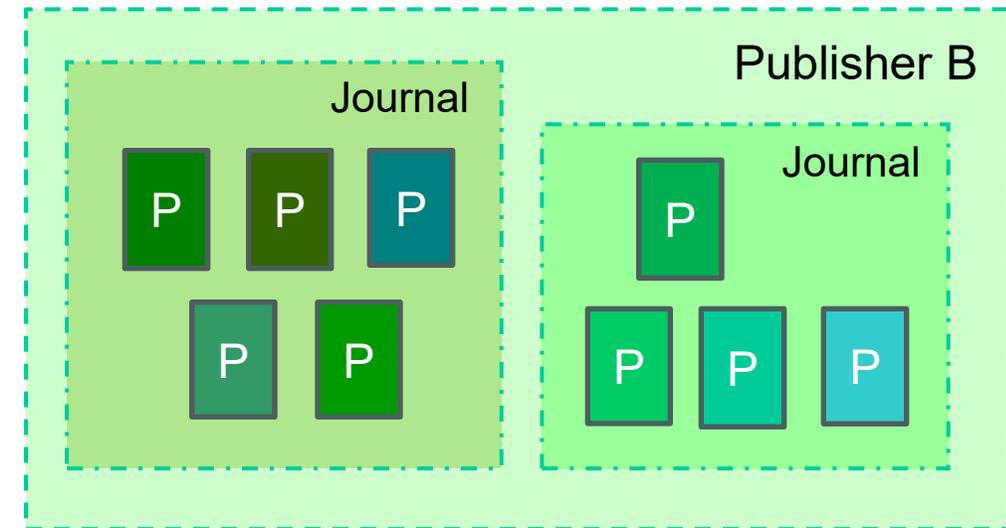
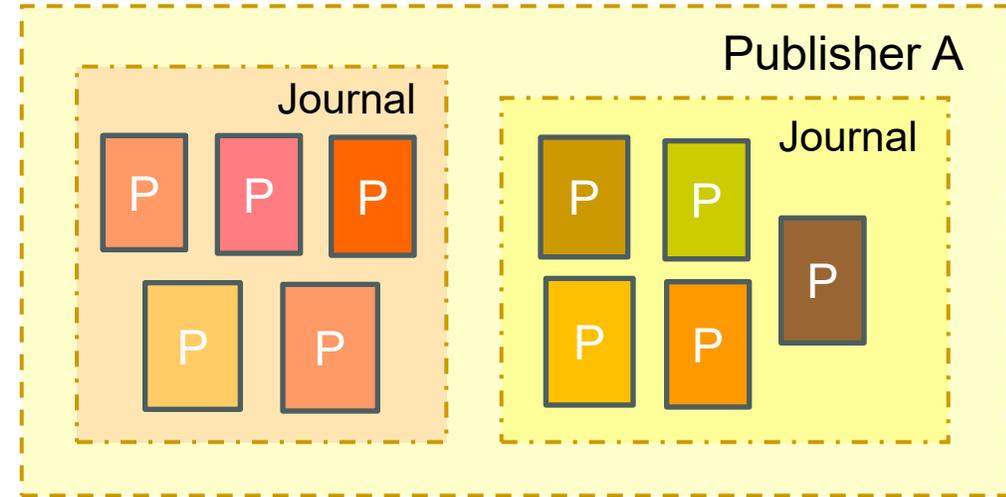
Current post-publication correction capacity



Research laboratories



Research literature



ACCOUNTABILITY IN RESEARCH, 2024
<https://doi.org/10.1080/08989621.2024.2428205>



Taylor & Francis
Taylor & Francis Group

 OPEN ACCESS



The research literature is an unsafe workplace

Jennifer A. Byrne^{a,b} and Adrian G. Barnett^c

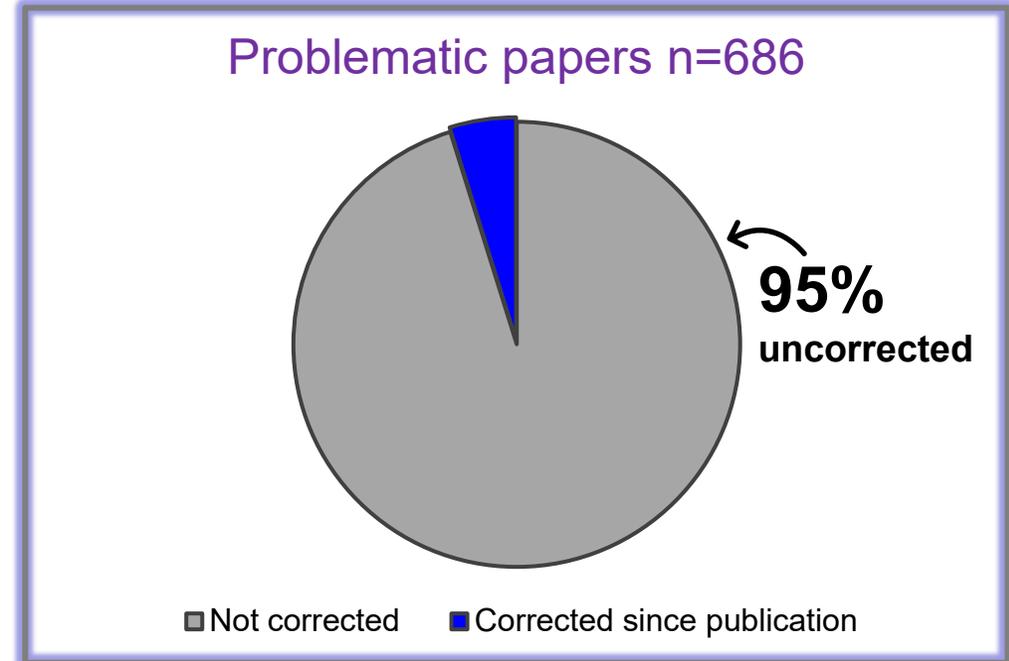
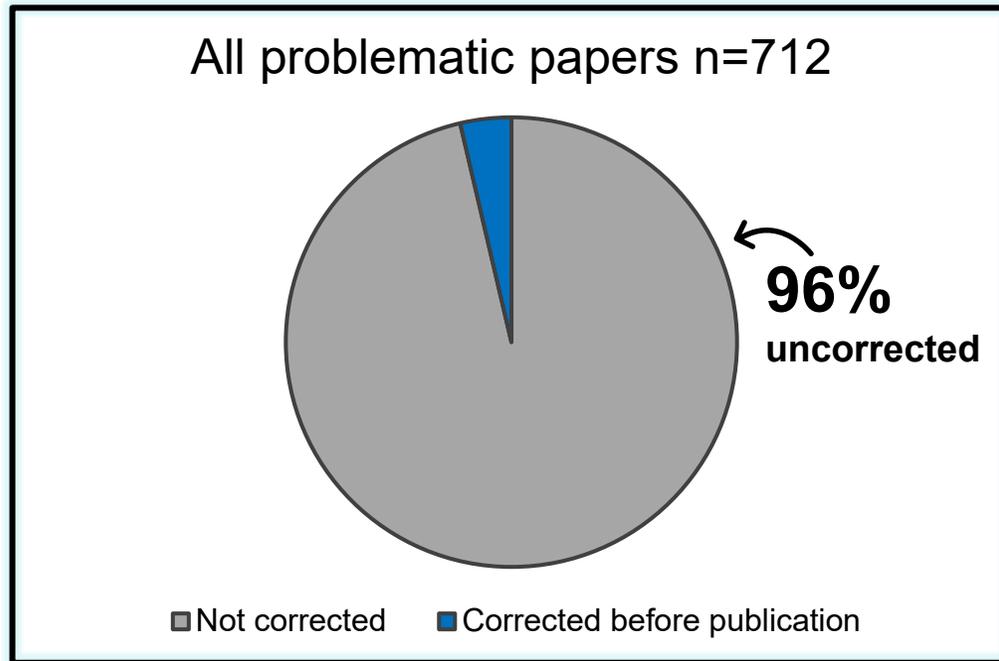
^aNSW Health Statewide Biobank, NSW Health Pathology, Camperdown, New South Wales, Australia;
^bSchool of Medical Sciences, Faculty of Medicine and Health, The University of Sydney, Camperdown, New South Wales, Australia; ^cSchool of Public Health and Social Work, Queensland University of Technology, Kelvin Grove, Queensland, Australia

How should we respond to the unsafe workplace?

1. Recognise the unsafe workplace

- Raise awareness of the research literature as an unsafe workplace
- Raising awareness is difficult when post-publication corrections are so infrequent
- **No description of a problem= “no problem”**

No published corrections = “no problem”



2. Focus on flagging papers versus correcting

- Corrections require the workplace (ie publishers/ journals)
- Flagging can be done **without the workplace**
- Flagging papers will also raise awareness of problem + scale



LABORATORY SAFETY

-  **Lab coats must be worn**
-  **No open-toe footwear in this area**
-  **No eating or drinking in this area**
-  **Danger
Hazardous substances**

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2. Strengthen infrastructure outside the workplace

- **PubPeer** represents key research infrastructure
 - under-utilised through low researcher awareness/ use (unpublished data)
- **Solution-** bring PubPeer posts into the literature (independent of plug-in)
 - signed and dated posts about verifiable errors
- **Solution-** support PubPeer through deliberate and planned redundancy eg. reactivation of PubMed Commons

3. External regulation of the workplace



- International Organization of Standardization (ISO)
- ISO standards promote use of best practices agreed by experts
- “When things don't work as they should, it often means that standards are absent”

3. External regulation of the workplace

- Hospitals, diagnostic laboratories are regulated by accreditation, why not journals?
- **Solution-** voluntary accreditation (eg ISO 9001), to include publication **AND correction**
- Produce two journal tiers, ie accredited v. non-accredited journals
- Recognition of **accredited journals** by funders/ institutions would be a game changer

Summary

- Researchers should approach the literature as an unsafe workplace
- Researchers must be enabled to be safe at work
- Focus on flagging papers versus corrections
- Build and strengthen infrastructure that can operate independently of publishers/ journals
- Advocate for a system of voluntary external accreditation for journals

We create the literature, we can fix it



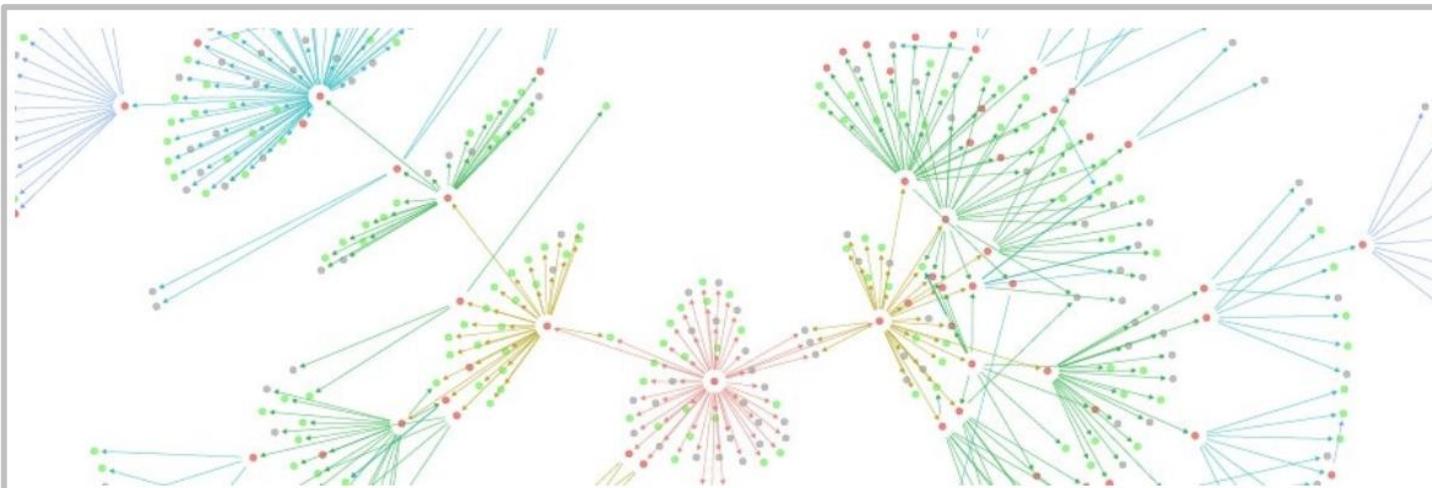
David Vaux Research Integrity Fellowship Award



The David Vaux Research Integrity Fellowship Award has been established to honour Prof David Vaux AO FAA FAHMS, who has championed scientific research integrity in Australia.

The Walter and Eliza Hall Institute of Medical Research (WEHI) kindly funded this award thanks to a generous donation from WEHI alumnus Dr Glenn Begley and Mrs Merrin Begley.

(The) inaugural awardee received their award in 2023. The award will be offered biennially from 2025-2033.



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← Research centres

Publication and Research Integrity in Medical Research

Research_

Publication and Research Integrity in Medical Research (PRIMeR)

Improving the reliability of the medical research literature

Our group leads research and advocacy to improve the reliability of the research literature and reduce research waste. We advocate for transformed research publication standards and error correction capacity.

Based at the [NSW Health Statewide Biobank](#) in Camperdown, the PRIMeR group forms part of [Molecular Biomedicine](#) theme of the [School of Medical Sciences](#).

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