

Reducing Bias in Peer Review Through Automated Authorship Checks

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Ripeta, part of Digital Science
[@ripetareview](#)

Today's Roadmap

- Background
 - Bias in authorship in peer review
 - Rise of fake authors and bad actors
- Trust in Authorship & Peer Review
 - How can we trust authorship and reduce human biases?
- Solutions
 - Current solutions
 - Ripeta preCheck

Bias in Authorship in Peer Review: Gender

From an empirical or research perspective, gender bias in peer review is complicated

Double-blind review favours increased representation of female authors

Purchase

Research: Gender bias in scholarly peer review [Published: 11 December 2013](#)

Markus Helmer , Manuel Schottdorf, Andreas Neef, Demian Battaglia 

Mar 21, 2017 · <https://doi.org/10.7554/eLife.21718>  

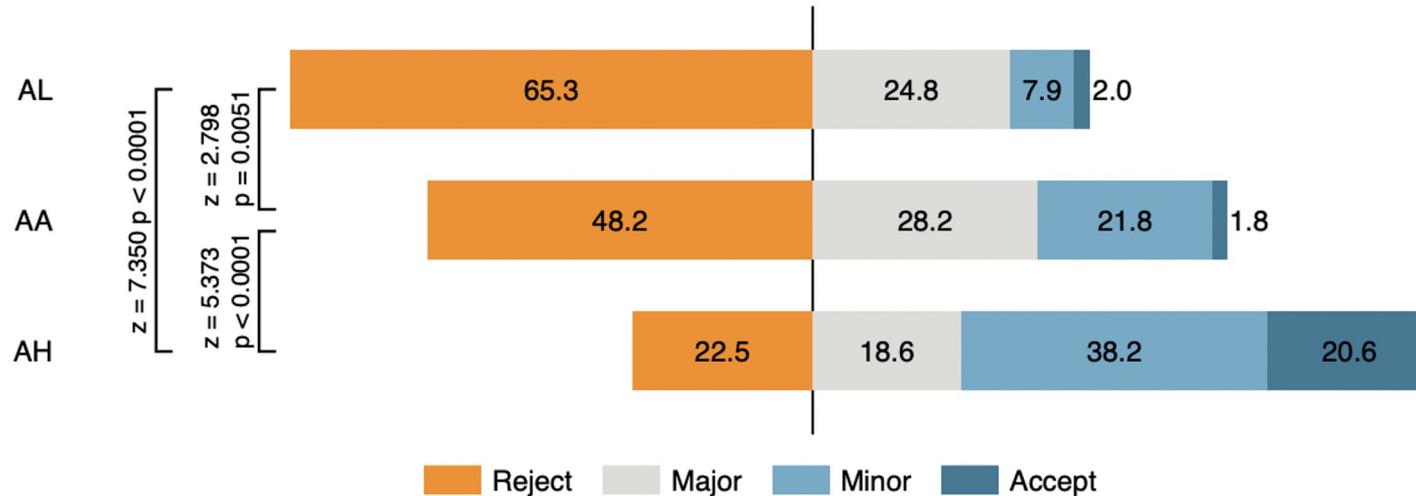
Bibliometrics: Global gender disparities in science

[Vincent Larivière](#), [Chaoqun Ni](#), [Yves Gingras](#), [Blaise Cronin](#) & [Cassidy R. Sugimoto](#) 

Editor and reviewer gender influence the peer review process but not peer review outcomes at an ecology journal

Charles W. Fox , C. Sean Burns, Jennifer A. Meyer

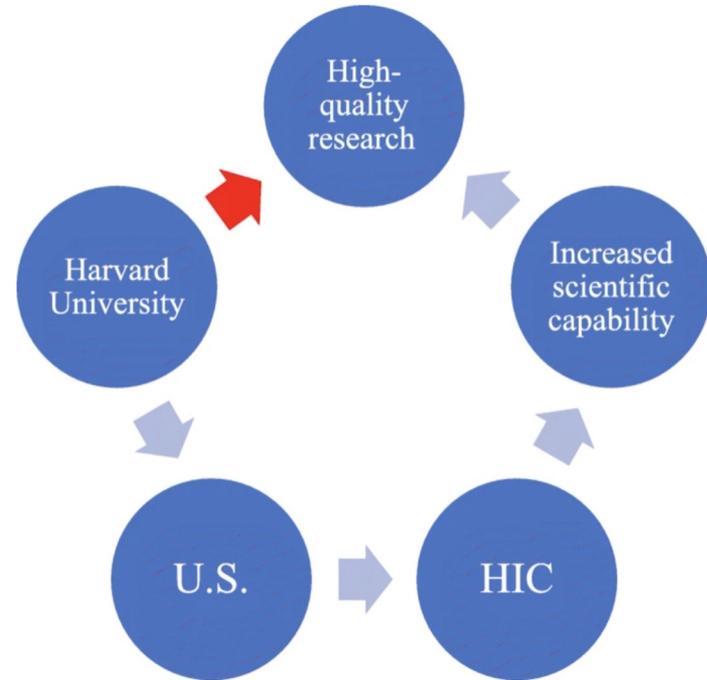
Bias in Authorship in Peer Review: Status Bias



Huber, Juergen and M. Inoua, Sabiou and Kerschbamer, Rudolf and König-Kersting, Christian and Palan, Stefan and Smith, Vernon L., Nobel and Novice: Author Prominence Affects Peer Review (August 16, 2022). Available at SSRN: <https://ssrn.com/abstract=4190976> or <http://dx.doi.org/10.2139/ssrn.4190976>

Bias in Authorship in Peer Review: Nationality Bias

Heuristic framework. Reviewers may see “Harvard University,” and through a series of reasonable assumptions arrive at the conclusion that Harvard produces high-quality research (blue arrows). The heuristic occurs when reviewers see “Harvard University” and necessarily assume that the research is of high quality, when this may not be the case

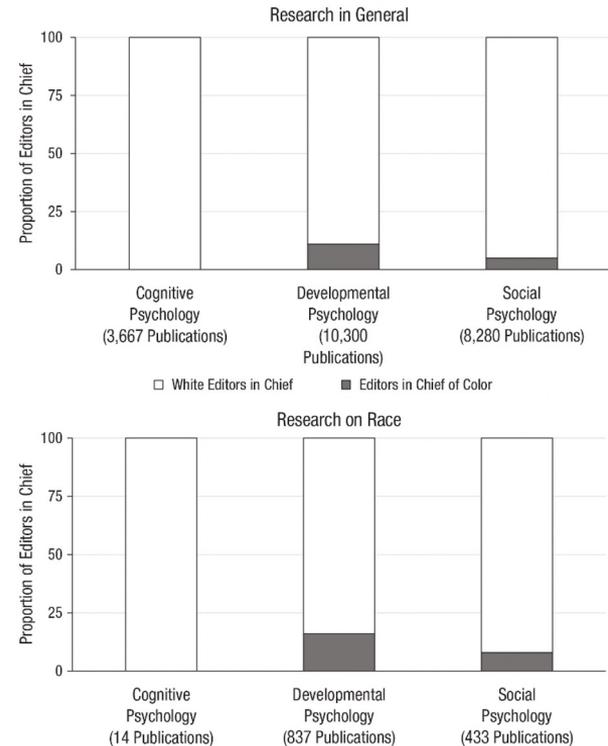


Skopec, M., Issa, H., Reed, J. *et al.* The role of geographic bias in knowledge diffusion: a systematic review and narrative synthesis. *Res Integr Peer Rev* 5, 2 (2020). <https://doi.org/10.1186/s41073-019-0088-0>

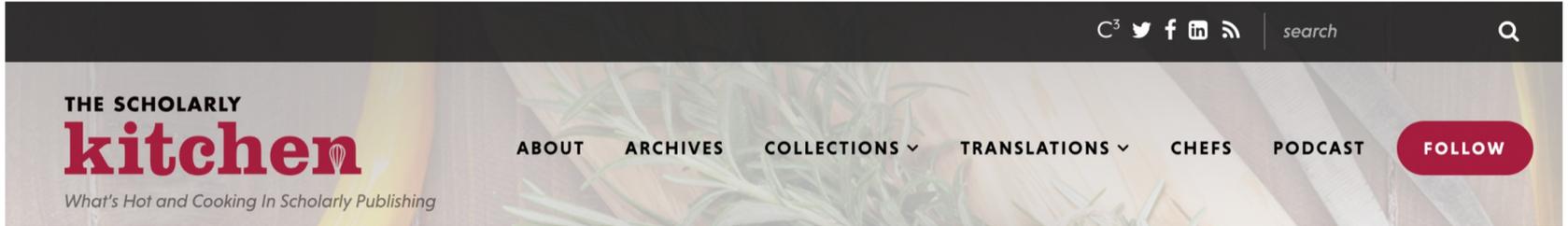
Bias in Authorship in Peer Review: Racial Bias

Proportion of editors in chief who were people of color or White for all publications (top) and for the publications that highlighted race (bottom) across cognitive, developmental, and social psychological journals. Publications for which we were unable to code the race of the editor in chief are excluded.

Roberts, S. O., Bareket-Shavit, C., Dollins, F. A., Goldie, P. D., & Mortenson, E. (2020). Racial Inequality in Psychological Research: Trends of the Past and Recommendations for the Future. *Perspectives on Psychological Science*, 15(6), 1295–1309.
<https://doi.org/10.1177/1745691620927709>



Rise of Fake Authors and Bad Actors

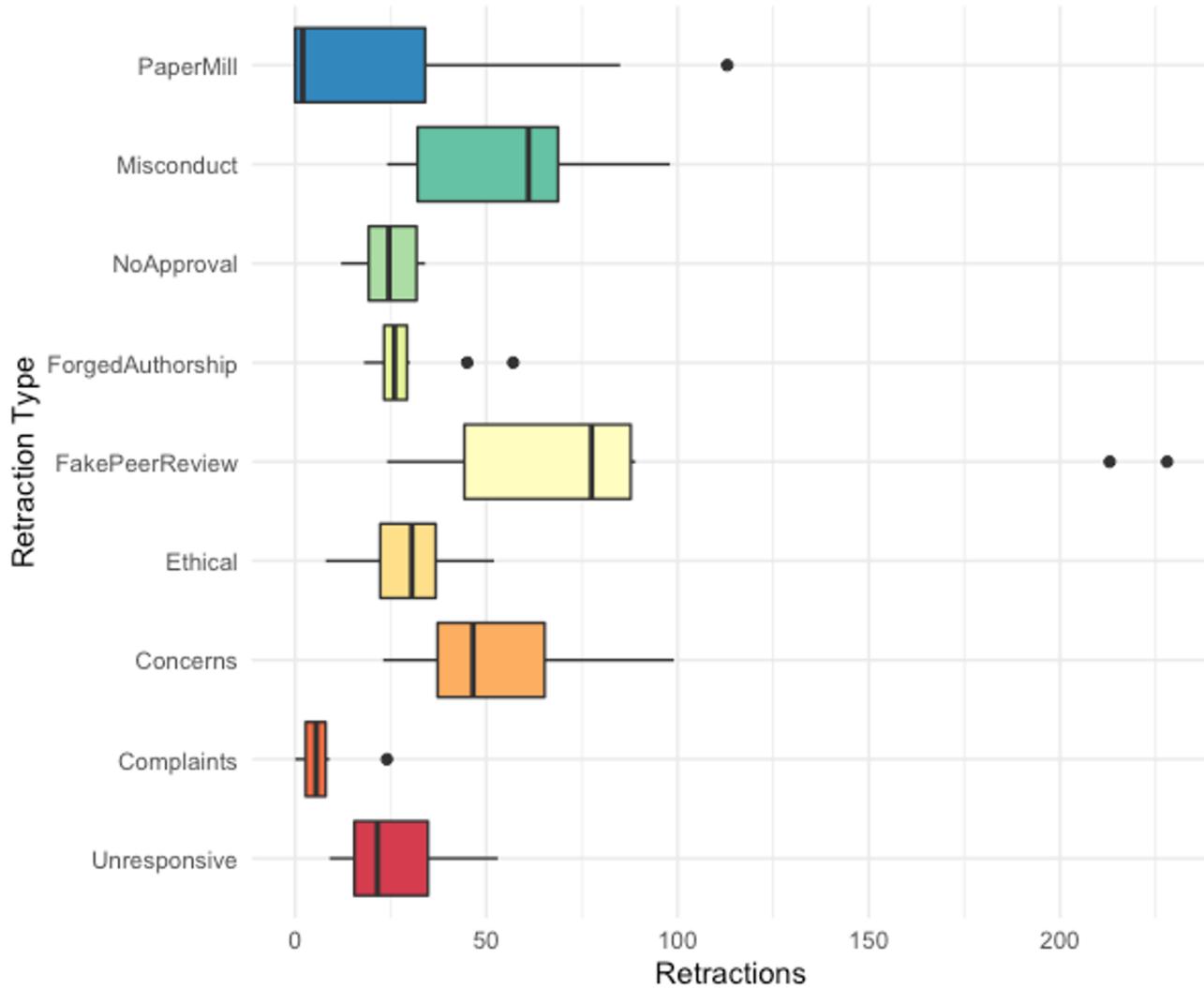


Imposters and Impersonators in Preprints: How do we trust authors in Open Science?

By [LESLIE D. MCINTOSH](#) | [MAR 17, 2021](#) | [15 COMMENTS](#)

Scams

- Unknowing (real) Coauthors
- Fake Coauthors
- Unknowing Lead Author
- False Affiliations
- Fake References
- Fake Peer Review
- Fake Lead Author



Retractions

due to
Authorship Issues

2010-2019

How can we trust authorship - and peer reviewers - and reduce human biases?

Current Solutions

Double-Blind Peer Review

Peer Review Bias: A Critical Review

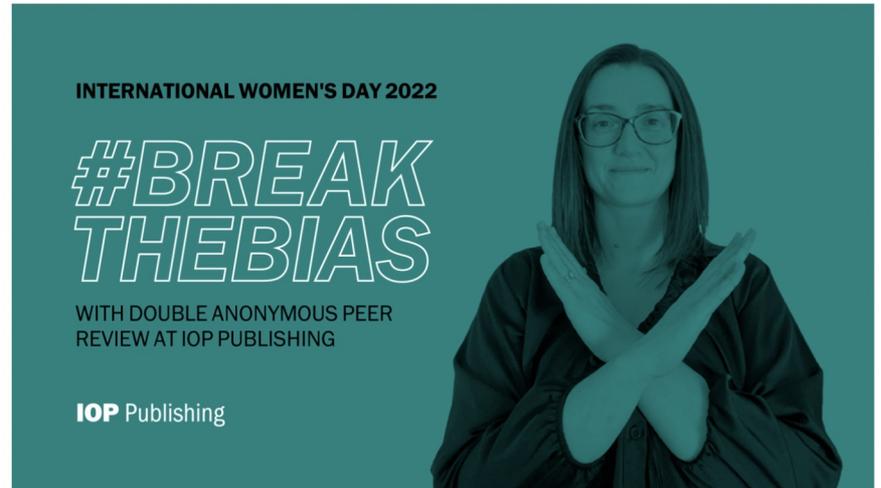
Samir Haffar, MD; Fateh Bazerbachi, MD; and M. Hassan Murad, MD, MPH

© 2018 Mayo Foundation for Medical Education and Research ■ Mayo Clin Proc. 2019;94(4):670-676



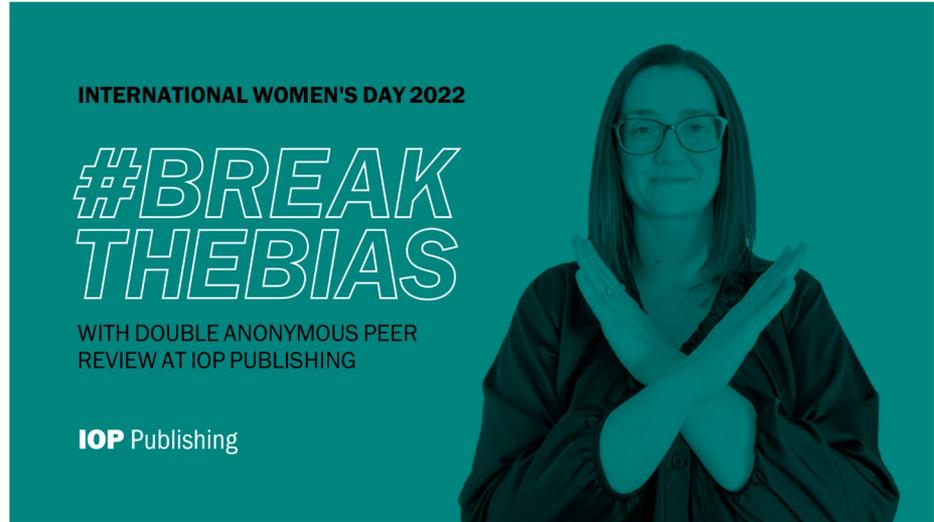
How double anonymous breaks the bias in peer review

08 Mar 2022 Faye Holst



Current Solutions

- *Double-Blind*
- *Triple-Blind*
- *Quadruple-Blind*
- *Open Peer Review*

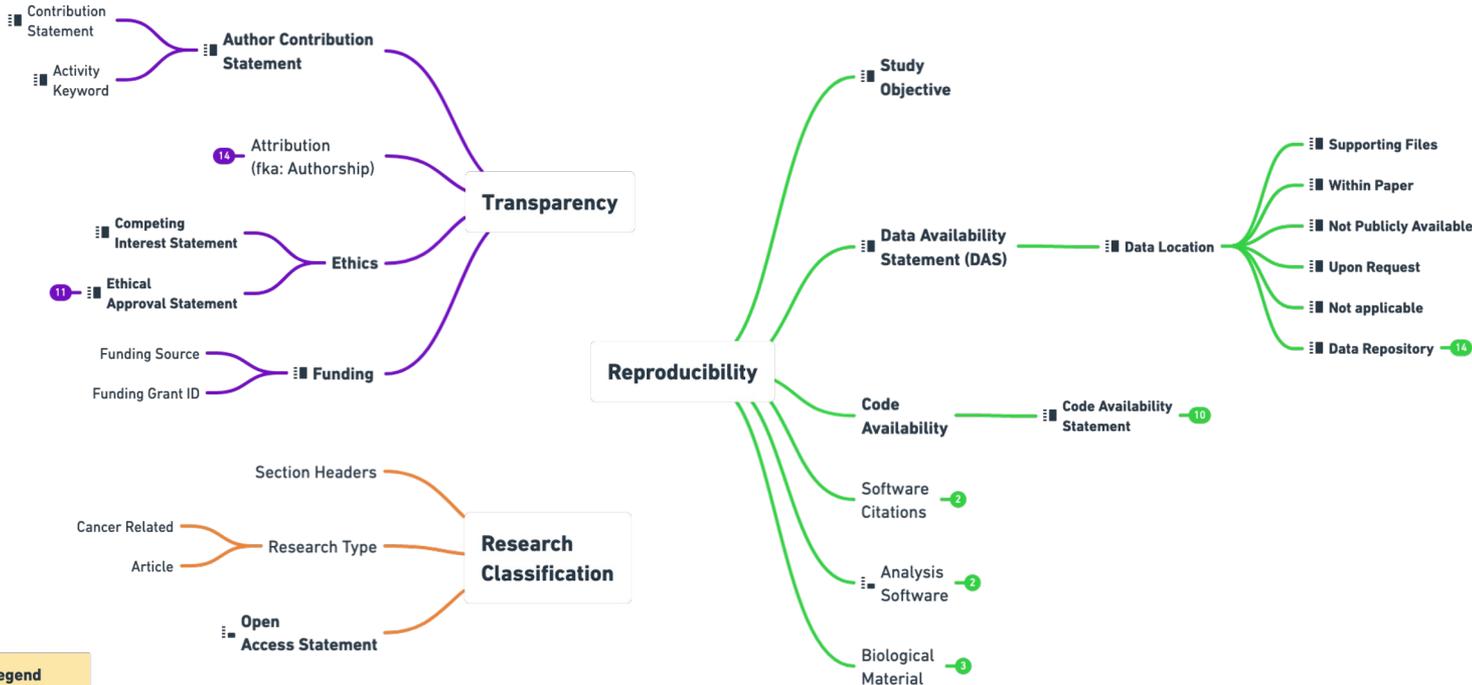


Scientific Trust Markers

Research
Professionalism
Reproducibility



Scientific Trust Markers



Legend

- In Dimensions
- Coming soon

aligned with
Reporting Guidelines

MDAR
ARRIVE 2.0
CONSORT 2010
STARD 2015
SPIRIT 2013
STROBE
PRISMA 2009
ARRIVE
AGREE
SQUIRE
CARE
SRQR
COREQ

Author Validity: Examples



Email or Domain Fails:

- Emails found to be 'dead' due to people leaving institution
- Some intentionally fake domains
(e.g., [univ-bayreuth.de](#), real domain: [uni-bayreuth.de](#))

Needs Investigation:

- Commercial email with no ORCID
- Email and institution do not match

Commonly Known Issues:

- “Camille Nous” is a known “alias account” for multiple authors

Built With

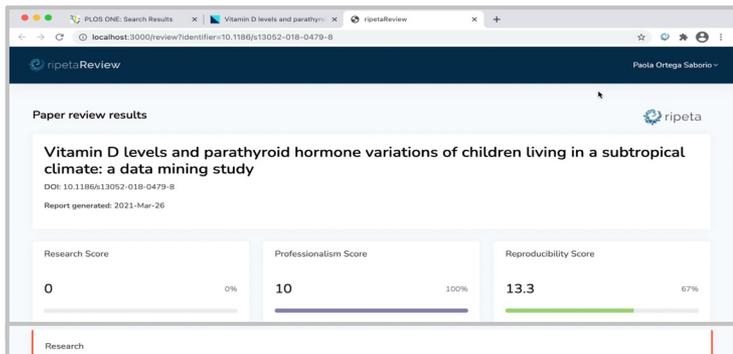
- Natural Language Processing (NLP)
- Data Engineering Algorithms
- Machine Learning Models

Research

Transparency

Reproducibility





Sample for Editors

preCheck

Critical Assessment of the Interaction between DNA and Choline Amino Acid Ionic Liquids:
Evidences of Multimodal Binding and Stability Enhancement

DOI: [10.1021/acscentsci.8b00601](https://doi.org/10.1021/acscentsci.8b00601)

Report generated: 2021-Sep

Trust in	Text	Comments to Editor
Research		
Study Objective	Hence this study is aimed at systematic understanding of DNA-CAAIL interaction by deploying many spectroscopic techniques, namely, UV-vis absorption, steady-state fluorescence, time-resolved fluorescence, DNA melting study, circular dichroism (CD), and scanning electron microscopy (SEM).	Review their study purpose to verify that they have represented it as accurately as possible.
Professionalism		
Ethical Approval Statement	Not found.	Please review this carefully. While not all research requires an ethical approval, ensure the authors have this if their research does. Otherwise, consider including a simple statement that ethical approval was not required.
Funding Statement	H.S.B. acknowledges financial support from Department of Atomic Energy, Government of India.	We identified a funding statement in the manuscript. To provide important context and promote transparency and trust in the work, confirm the funding statement is complete.

Quality Review of One Paper (singular processing)

for:
Researchers
Institutions
Publishers

preCheck - author module

Applies sophisticated algorithms to check for:

- Email peculiarities
- Impersonation
- Irregular networks
- Publishing history oddities

Leveraging

- **Dimensions**
with 15 million unique authors
- **ORCID**
with 15 million records
- **GRID**
with 100k research organisations

Identify author anomalies in publications

Fake authorship

Misconduct

Papermills



Dimensions Research Integrity:



Powered by Ripeta



preCheck

preCheck

Checks individual manuscripts for trust markers *before* publication

Publishers
Ensure good science process through efficient augmented review



Powered by ripeta



Dimensions Research Integrity

Dimensions Integrity: Analysis

Checks for trust markers *after* publication

Dimensions Integrity: Feedback and Monitoring

Monitor both preprints and papers for data sharing practice and trust markers

Funders
Monitor the implementation and uptake of good science indicators

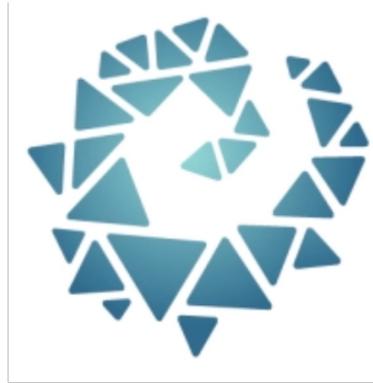
Publishers
Compare practices against policies and similar publishers

Institutions
Identify local practices needing attention and intervene before publication, if needed

Positive Feedback
to
Increase Science
Transparency

Thank you!

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