Responsible, ethical and fair authorship

Irene Hames, PhD, FRSB   @irenehames

ORCID : http://orcid.org/0000-0002-3806-8786

UKRIO Introduction to Research Integrity   #UKRIOwebinar

"*Publications, priorities, the order of the authors, the choice of the journal, the collegiality and the brutal competition, academic tenure, grantsmanship, the Nobel Prize,* Schadenfreude – <u>*these are the soul and baggage of contemporary science*</u>."
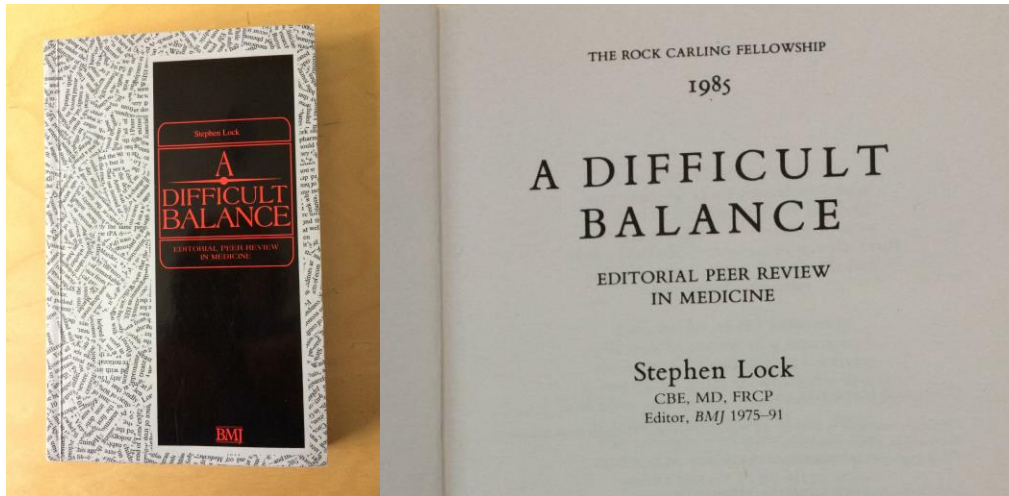
"*My Jean Ardley changed her name from Yardley to climb up the alphabetical ladder of authors. So did a scientific acquaintance of mine – jumping some twenty letters to move to the front by a stroke of a judge's pen.*"

From *Cantor's Dilemma*, by Carl Djerassi (Afterword)

published 1989
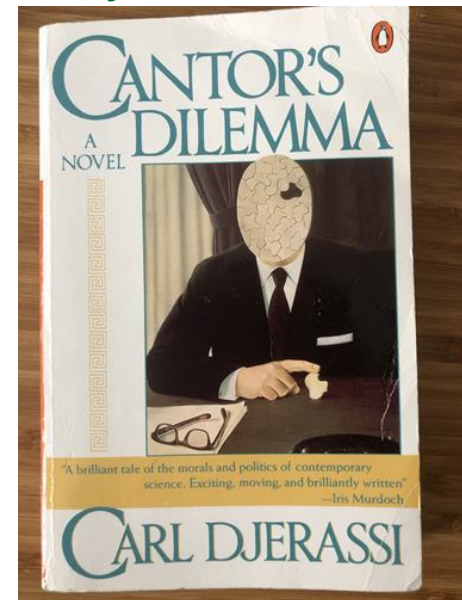
Stephen Lock, Editor *BMJ* 1975 - 1991

"*And underlying these worries was yet another: that scientific articles have been hijacked away from their primary role of communicating scientific discovery to one of demonstrating academic activity.*"

'*A Difficult Balance. Editorial peer review in medicine*', Introduction to third impression, *BMJ*,1991, p.xi.

BULLIED INTO BAD SCIENCE

Leading individuals and institutions in adopting open practices to improve research rigour

The letter

The *Bullied Into Bad Science* campaign is an initiative by early career researchers (ECRs) for early career researchers who aim for a fairer, more open and ethical research and publication environment.

- **Pressured** to publish in high-impact journals ("*told that if it wasn't Nature or Science it wasn't worth publishing … was actively prevented from publishing valid, good science in lower impact journals*")

- Unable to reproduce a former post-doc's results, was blamed and the paper submitted to a lower-impact journal than planned

- **Harassed** by supervisors to modify data to make papers look better for publication in prestigious journals

- **Coerced** into conducting flawed research

http://bulliedintobadscience.org/

China's Publication Bazaar

Hvistendahl (2013) *Science* 342: 1035-39

A *Science* investigation has uncovered a smorgasbord of questionable practices including paying for author's slots on papers written by other scientists and buying papers from online brokers.

SHANGHAI, CHINA—The e-mail arrived around noon from the mysterious sender "Publish SCI Paper," with the subject line "Transfer co-first author and co-corresponding author." A message body uncluttered with pleasantries contained a scientific abstract with all the usual ingredients, bar one: author names. The message said that the paper, describing a

CREDIT: ADAPTED FROM AKINDO/ISTOCKPHOTO.COM

" *uncovered a flourishing academic black market involving shady agencies, corrupt scientists, and compromised editors*"

- Papers for sale (catalogue), data for sale (real or faked)
- Ghostwriters available to write papers
- Authorship for sale (*even at provisional acceptance*)

Authorship can bring big rewards

US$50,000

Cash for papers: putting a premium on publication (*Nature*, 2006: **441**, 792)

"*With great fanfare, Sichuan Agricultural University held a ceremony two weeks ago to announce that it was awarding a 13.5-million yuan prize (US$2 million) to a group of its researchers, for a publication in the journal* Cell.*"*
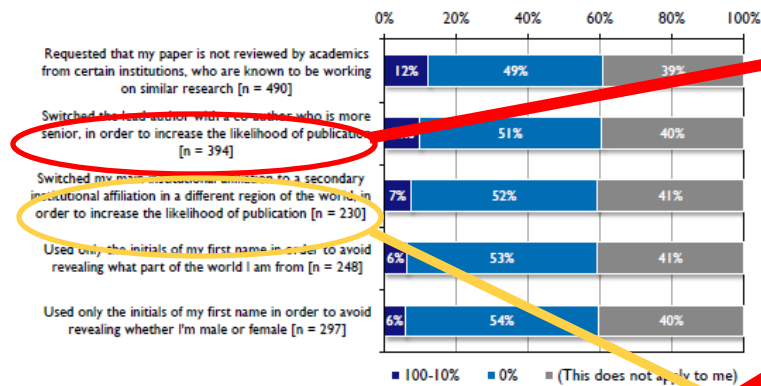
Editorial questions the wisdom of paying bonuses and allocating grants based on individual research papers, and of awarding cash day after publication.

Don't pay prizes for published science (*Nature*, editorial, 7 July 2017)

# 'Peer review in 2015: a global view' Taylor & Francis survey

2 Ethics in peer review

Q7 " Approximately, on what proportion of papers that you have submitted to single blind peer reviewed journals have you taken the following actions? "

HSS

Action	100-10%	0%	(This does not apply to me)
Requested that my paper is not reviewed by academics from certain institutions, who are known to be working on similar research [n = 490]	12%	49%	39%
Switched the lead-author with a co-author who is more senior, in order to increase the likelihood of publication [n = 394]		51%	40%
Switched my main institutional affiliation to a secondary institutional affiliation in a different region of the world, in order to increase the likelihood of publication [n = 230]	7%	52%	41%
Used only the initials of my first name in order to avoid revealing what part of the world I am from [n = 248]	6%	53%	41%
Used only the initials of my first name in order to avoid revealing whether I'm male or female [n = 297]	6%	54%	40%

STM

Action	100-10%	0%	(This does not apply to me)
Requested that my paper is not reviewed by academics from certain institutions, who are known to be working on similar research [n = 788]	33%	48%	20%
Switched the lead-author with a co-author who is more senior, in order to increase the likelihood of publication [n = 546]	23%	57%	21%
Used only the initials of my first name in order to avoid revealing whether I'm male or female [n = 440]	19%	57%	23%
Used only the initials of my first name in order to avoid revealing what part of the world I am from [n = 440]	18%	59%	
Switched my main institutional affiliation to a secondary institutional affiliation in a different region of the world, in order to increase the likelihood of publication [n = 105]	17%	60%	23%

> **Switched the lead-author with a co-author who is more senior, in order to increase the likelihood of publication**
> **HSS 10%, STM 23%**
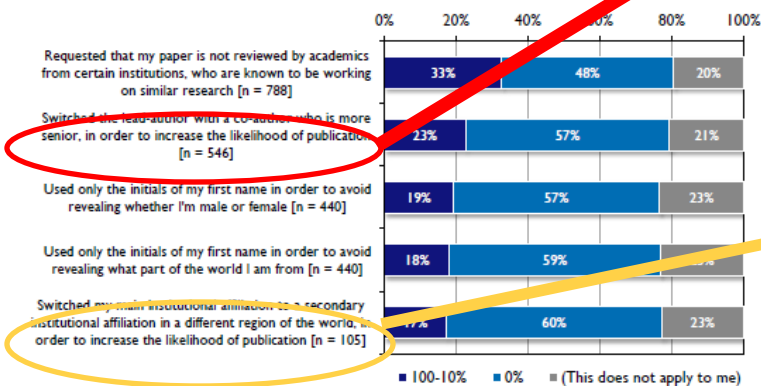
> **Switched my main institutional affiliation to a secondary institutional affiliation in a different region of the world, in order to increase the likelihood of publication**
> **HSS 7%, STM 17%**

Dr Alex Bond 🏳️‍🌈🇨🇦
@TheLabAndField

Follow

In the last few weeks since I vented on here about being left of a paper I thought I should've coauthored, I've had no less than 15 people write & say something similar is/has happened to them. Nearly all were ECRs; the majority were women

8:13 PM - 22 Apr 2019

144 Retweets **520** Likes

💬 68   🔁 144   ♡ 520   ✉️

Tweet your reply

Dr Alex Bond 🏳️‍🌈🇨🇦 @TheLabAndField · Apr 22

and those that pursued action, either through university research integrity offices, journals'/publishers' processes were met with the same response: sorry mate, not much we can do, but good luck

💬 2   🔁 7   ♡ 75   ✉️

Dr Alex Bond 🏳️‍🌈🇨🇦
@TheLabAndField

Follow

>75 folks have now chimed in.
Journals/editors insist it's a matter for universities. That ignores non-university scientists.
And organizations refuse to investigate unless both parties are staff/students.
This is one of the most fundamental parts of science careers. It's broken

Dr Alex Bond 🏳️‍🌈🇨🇦 @TheLabAndField

In the last few weeks since I vented on here about being left of a paper I thought I should've coauthored, I've had no less than 15 people write & say something similar is/has happened to them. Nearly all were ECRs; the majority were women

Show this thread

7:12 AM - 24 Apr 2019

22 Retweets **55** Likes

💬 3   🔁 22   ♡ 55   ✉️

What qualifies someone for authorship?

General rule: *all individuals named as authors should qualify for authorship, and all those who do qualify should be listed (should be no 'guest' or 'ghost' authors).*

- Generally based on substantial (intellectual) contribution to work conception/design; data acquisition/analysis/interpretation; drafting/revising work critically for important intellectual content

- ▪ Getting funding or general supervision or administrative support alone do not justify authorship

- ▪ *Being head of the department or institute doesn't qualify for authorship*

Authorship guidelines

- Are many, from brief statements to very prescriptive requirements

- ICMJE (International Committee of Medical Journal Editors)
    - four criteria have to be met for authorship, otherwise individuals should appear in the acknowledgements
    - considered by many to be too rigid, limited and open to abuse

- McNutt et al (2018) *PNAS*, **115,** 2557-60 – have adapted the ICMJE guidelines to encourage broader adoption, e.g. creation of new software counts, actual writing no longer a requirement, approval of submitted version as well as any substantially modified versions that involve an author's contribution to the study
    - Also outline what is expected of corresponding authors – role involves considerable responsibility and effort

Guidelines are useful, but …

- Need to be understood, can be a challenge to put into practice (can be ambiguous – language and punctuation)

- Not always clear to researchers what normal practice is – don't assume even the most basic knowledge (group leader/senior researcher responsibilities)

- Helpful when discussing authorship, when following journal submission requirements (journals may use them without discretion), junior researchers can point to them when needed

With authorship comes responsibility

… for the integrity of the work

… for accountability

… for resolving authorship disputes

- When disputes arise, manuscripts are 'put on hold' - whole group, collaborators and others suffer

- Not the editor's/journal's role to resolve disputes – up to researchers and their institutions

Authorship conventions vary between disciplines and cultures

■ What does the order of the authors mean?

■ What contribution qualifies for authorship?

Because of differences:

➢ publication credit can be misunderstood

➢ evaluation in hiring, promotion and funding decisions can be difficult

➢ author disputes can arise

Montreal Statement on Research Integrity in Cross-Boundary Research Collaborations

Preamble. Research collaborations that cross national, institutional, disciplinary and sector boundaries are important to the advancement of knowledge worldwide. Such collaborations present special challenges for the responsible conduct of research, because they may involve substantial differences in regulatory and legal systems, organizational and funding structures, research cultures, and approaches to training. It is critically important, therefore, that researchers be aware of and able to address such differences, as well as issues related to integrity that might arise in cross-boundary research collaborations. Researchers should adhere to the professional responsibilities set forth in the *Singapore Statement on Research Integrity*. In addition, the following responsibilities are particularly relevant to collaborating partners at the individual and institutional levels and fundamental to the integrity of collaborative research. Fostering the integrity of collaborative research is the responsibility of all individual and institutional partners.

Responsibilities of Individual and Institutional Partners in Cross-Boundary Research Collaborations

General Collaborative Responsibilities

1. Integrity. Collaborating partners should take collective responsibility for the trustworthiness of the overall collaborative research and individual responsibility for the trustworthiness of their own contributions.
2. Trust. The behavior of each collaborating partner should be worthy of the trust of all other partners. Responsibility

Responsibilities in Collaborative Relationships

12. Roles and Responsibilities. Collaborating partners should come to mutual understandings about their roles and responsibilities in the planning, conduct and dissemination of research. Such understandings should be renegotiated when roles or responsibilities change.
13. Customary Practices and Assumptions.

17. Publication. Collaborating partners should come to agreement, <u>at the outset and later as needed</u>, on how publication and other dissemination decisions will be made.

18. Authorship and Acknowledgement. Collaborating partners should come to agreement, <u>at the outset and later as needed</u>, on standards for authorship and acknowledgement of joint research products. The contributions of all partners, especially junior partners, should receive full and appropriate recognition. Publications and other products should state the contributions of all contributing parties.

(3rd World Conference on Research Integrity, 2013; https://wcrif.org/guidance/montreal-statement)

Increasing number of authors
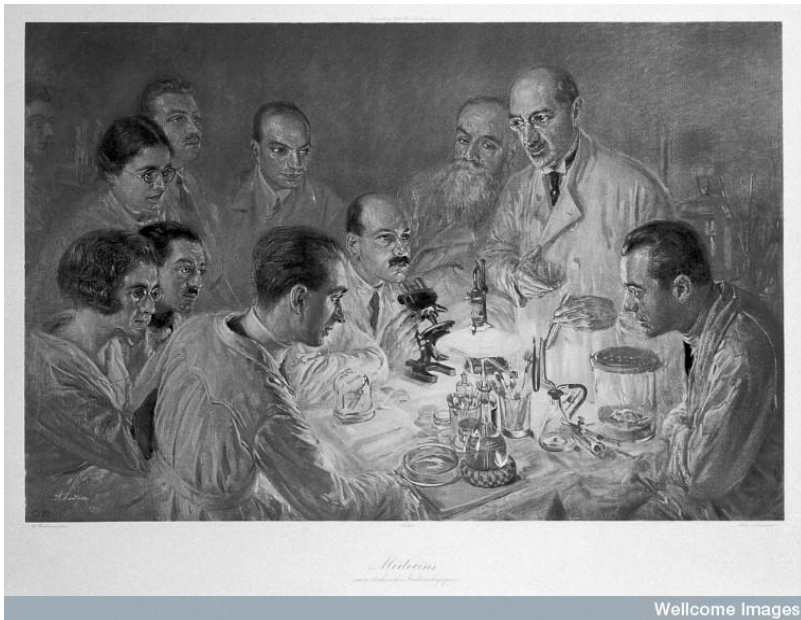
Credit: Wellcome Library, London, CC BY 4.0

ATLAS Experiment © 2014 CERN

Who did what?

CRediT – Contributor Roles Taxonomy

- high-level taxonomy used to represent the roles typically played by contributors to scholarly output

- 14 contributor roles

- roles describe each contributor's specific contribution

- increased transparency and accessibility of research contributions

- launched 2014, being widely adopted

http://credit.niso.org/

CRediT ─ Contributor Roles Taxonomy

Term	Definition
Conceptualization	Ideas; formulation or evolution of overarching research goals and aims
Data Curation	Management activities to annotate (produce metadata), scrub data and maintain research data (including software code, where it is necessary for interpreting the data itself) for initial use and later reuse
Formal Analysis	Application of statistical, mathematical, computational, or other formal techniques to analyze or synthesize study data
Funding Acquisition	Acquisition of the financial support for the project leading to this publication.
Investigation	Conducting a research and investigation process, specifically performing the experiments, or data/evidence collection
Methodology	Development or design of methodology; creation of models
Project Administration	Management and coordination responsibility for the research activity planning and execution
Resources	Provision of study materials, reagents, materials, patients, laboratory samples, animals, instrumentation, computing resources, or other analysis tools
Software	Programming, software development; designing computer programs; implementation of the computer code and supporting algorithms; testing of existing code components
Supervision	Oversight and leadership responsibility for the research activity planning and execution, including mentorship external to the core team
Validation	Verification, whether as a part of the activity or separate, of the overall replication/reproducibility of results/experiments and other research outputs
Visualization	Preparation, creation and/or presentation of the published work, specifically visualization/data presentation
Writing – Original Draft	Preparation, creation and/or presentation of the published work, specifically writing the initial draft (including substantive translation)
Writing – Review & Editing	Preparation, creation and/or presentation of the published work by those from the original research group, specifically critical review, commentary or revision – including pre- or post-publication stages

Authorship 'visualisation'

Neuropixels 2.0: A miniaturized high-density probe for stable, long-term brain recordings

Nicholas A. Steinmetz[*,†,1,2], Cagatay Aydin[*,3], Anna Lebedeva[*,4], Michael Okun[*,5,6], Marius Pachitariu[*,7], Marius Bauza[4], Maxime Beau[8], Jai Bhagat[6], Claudia Böhm[7], Martijn Broux[3], Susu Chen[7], Jennifer Colonell[7], Richard J. Gardner[9], Bill Karsh[7], Dimitar Kostadinov[8], Carolina Mora-Lopez[10], Junchol Park[7], Jan Putzeys[10], Britton Sauer, Zhiwen Ye[1], Joshua Dudma, Lee[7], Edvard I. Moser[9], John Haesler[3,13], Matteo Carandin

* Co-first authors

† Corresponding authors: nic

'Contribution matrices'

Author Contributions

	Steinmetz*	Aydin*	Lebedeva*	Okun*	Pachitariu*	Bauza	Beau	Bhagat	Böhm	Broux	Chen	Colonell	Gardner	Karsh	Kostadinov	Mora-Lopez	Park	Putzeys	Sauerbrei	van Daal	Vollan	Welkenhuysen	Ye	Dudman	Dutta	Hantman	K. Harris	Lee	Moser	O'Keefe	Renart	Svoboda	Hausser	Haesler	Carandini	T. Harris
Conceptualization	•																							•		•			•			•	•	•	•
Data preprocessing	•	•	•	•	•	•	•	•	•			•	•		•		•		•				•													
Data analysis	•	•	•	•	•		•	•				•			•		•					•			•			•								
Data collection: chronic		•	•	•			•			•	•			•					•		•															
Data collection: acute	•					•					•				•						•															
Software development				•							•		•																							
Software beta testing	•							•			•		•																							
Electronics hardware design											•		•				•				•															
Implant hardware design		•	•	•											•																			•		
Visualization	•	•	•	•	•		•						•									•													•	
Writing: original draft	•	•	•	•	•																														•	
Writing: methods	•	•	•	•	•	•	•			•		•	•	•			•		•																•	
Writing: review and editing	•	•	•	•	•	•	•			•	•	•	•	•	•		•	•	•	•	•	•	•		•	•	•								•	
Supervision	•			•									•	•								•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Funding acquisition																									•	•	•			•	•	•	•	•		

* co-first author

References

Allen WE, Chen MZ, Pichamoorthy N, Tien RH, Pachitariu M, Luo L, Deisseroth K (2019) Thirst regulates

AUTHOR CONTRIBUTIONS

	WY	MC	JAP	AF	AD	PP	CR	FM	OS	ILHO	JSW
Conceptualization	MAJOR	MAJOR	SUPPORT					SUPPORT	SUPPORT		MAJOR
Investigation	MAJOR		MAJOR								
Data Curation	MAJOR	MAJOR	MAJOR	MAJOR	MAJOR						
Analysis	MAJOR	MAJOR	MAJOR	SUPPORT	SUPPORT	SUPPORT	SUPPORT	SUPPORT	SUPPORT		
Supervision								MAJOR	MAJOR	MAJOR	MAJOR
Funding acquisition	SUPPORT			SUPPORT						MAJOR	MAJOR
Project Administration											MAJOR
Writing – original draft	SUPPORT	MAJOR									MAJOR
Writing – revisions											MAJOR

LEVELS OF CONTRIBUTION: **MAJOR**, SUPPORT

From J. Simon Wiegert @SimWieg tweet 6 December 2020: "I think we should be much more precise in labeling what was contributed by whom. I started putting these tables in our manuscripts for that reason (inspired by @AnneEUrai, @SteinmetzNeuro)."

See *Nature Index* 22 Jan 2021, Andy Tay https://www.natureindex.com/news-blog/researchers-embracing-visual-tools-contribution-matrix-give-fair-credit-authors-scientific-papers

ORCID

'Connecting research and researchers'

- a persistent identifier (ORCID iD) for researchers and scholars

- connects iDs with professional information, research activities — eg, affiliations, grants, publications, peer reviews

https://orcid.org/

Publication ethics and authorship issues

Dr Irene Hames, BSc, PhD, FSB   @irenehames
Editorial and Publishing Consultant
Council Member, COPE (Committee on Publication Ethics), 2010-13
ORCID : http://orcid.org/0000-0002-3806-8786

Glasgow University, Research integrity good-practice event, 25 August 2014

Glasgow, August 2014 © Irene Hames

Avoiding/minimizing authorship disputes

In research groups and collaborative projects:

1. Have a clear authorship/contributorship policy

2. Discuss and document individual contributor roles and provisional authorship early on, ideally at start of project

3. Review contributions as work progresses, revise roles and authorship until manuscript submission

4. Keep a descriptive authorship contribution list

5. Document the reasons for author/contributor additions and deletions, get agreement from all

6. Make sure all authors see and approve final manuscript

Report of the International Workshop on Contributorship and Scholarly Attribution (IWCSA, 2012) http://projects.iq.harvard.edu/attribution_workshop/
Available on figshare http://dx.doi.org/10.6084/m9.figshare.96831

Ethics discussions in research groups

A good example of how one group leader approached this – *Dynamic Ecology* blog, 1 April 2014

- *" … there was such a palpable hunger for talking about the subject that it made me very happy we had taken the time and I plan to repeat this"*

- *"So even if you think your lab has no problems – no especially if you think your lab has no problems – just do it. Go ahead and schedule a discussion of scientific ethics in your lab. You'll be glad you did. I certainly was!"*

- *"Am I just slow and you already have ethics discussions in your lab? How do you do it?"*

http://dynamicecology.wordpress.com/2014/04/01/scientific-ethics-discussions-in-labs/

Institutions – how they can help

- Create awareness of issues, potential problems and abuse; promote good practice – *aim to create a culture of ethical and responsible authorship*

- Educate, train, support – at all career stages; aim to avoid problems occurring/escalating

- Have efficient and consistent procedures and arbitration processes for resolving disputes, referrals, accusations of misconduct/unethical practice

- Encourage adoption and use of ORCID and introduction of CRediT

- Encourage (early) discussions in research groups and between collaborators

Authors – check your manuscripts carefully

... for things that shouldn't be in them:

- ❑ before submission

- ❑ after revision

- ❑ at proof stage

- ❑ including the supporting materials

Additional Information (Show All)

How to Cite | Author Information | Publication History | Funding Information

Original version published on 12 July 2014 has been replaced due to inclusion of an author's note not intended for publication.

"Original version published on 12 July 2014 has been replaced due to inclusion of an author's note not intended for publication."

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So far Altmetric has seen 3 stories from 3 outlets.

Score in context
Is one of the highest ever scores in this journal (ranked #1 of 362)
show more...

Mentioned by
3 news outlets
11 blogs
6529 tweeters
1 peer review site
4 weibo users
49 Facebook users
15 Google+ users

NATIONAL POST
'Should we cite the crabby Grabor paper?' What happens when no one proofreads an academic paper
The National Post
By now we all know, or ought to know, that just because something is published in a peer-reviewed academic journal doesn't mean i...
2014-11-12T19:21:15+

GIZMODO
Another Reason Not to Trust Everything In Peer-Reviewed Journals
Gizmodo
We're already well aware that the esteemed peer-review can only do so much in the way of thw... (to use the technical term) c...
2014-11-12T21:30:00+

This scientific study accidentally included a reference to someone else's

"Although association preferences documented in our study theoretically could be a consequence of either mating or shoaling preferences in the different female groups investigated **(should we cite the crappy Gabor paper here?),** shoaling preferences are unlikely drivers of the documented patterns both because of evidence from previous research and inconsistencies with a priori predictions."

What was meant?

Organometallics 2013 paper - note from PI to first author was left in the supporting information and published:

"… please insert NMR data here! where are they? and for this compound, just make up an elemental analysis…"

After editorial review:

"There was no evidence in any of the materials received that indicated falsified analyses."

What Researchers Think About the Culture They Work In
Wellcome Trust report, Jan 2020

Figure 1:
Words that researchers would use to describe research culture

Survey, n = 2839 – research community, UK and international.

Investigating different perspectives on research culture
What Researchers Think About the Culture They Work In | 7

Figure 21:
Words that researchers would use to describe an ideal research culture

Survey, n = 4079-4110 – research community, UK and international.

Ideas for a better future
What Researchers Think About the Culture They Work In | 48

Make authorship an ongoing dialogue, from the start of a project until publication

More information on the UKRIO website https://ukrio.org/

Thank you for listening!

Dr Irene Hames

@irenehames