



PUBPEER
The online Journal club

PubPeer: past, present and future

Boris Barbour, PubPeer co-organiser

Disclaimer: views not those of CNRS, ENS

Scientific progress requires...

- Discussion, analysis, confrontation of ideas, criticism
 - Corridor, journal club, conference, pub
 - Blog, social media
 - Review article
 - (Self-)Correction
 - New articles
 - Letters to the editor
 - Journal commenting systems
- = > Restricted, dispersed, slow, ephemeral

Max Planck (paraphrased): “Science advances one funeral at a time”

Hostile environment for correction

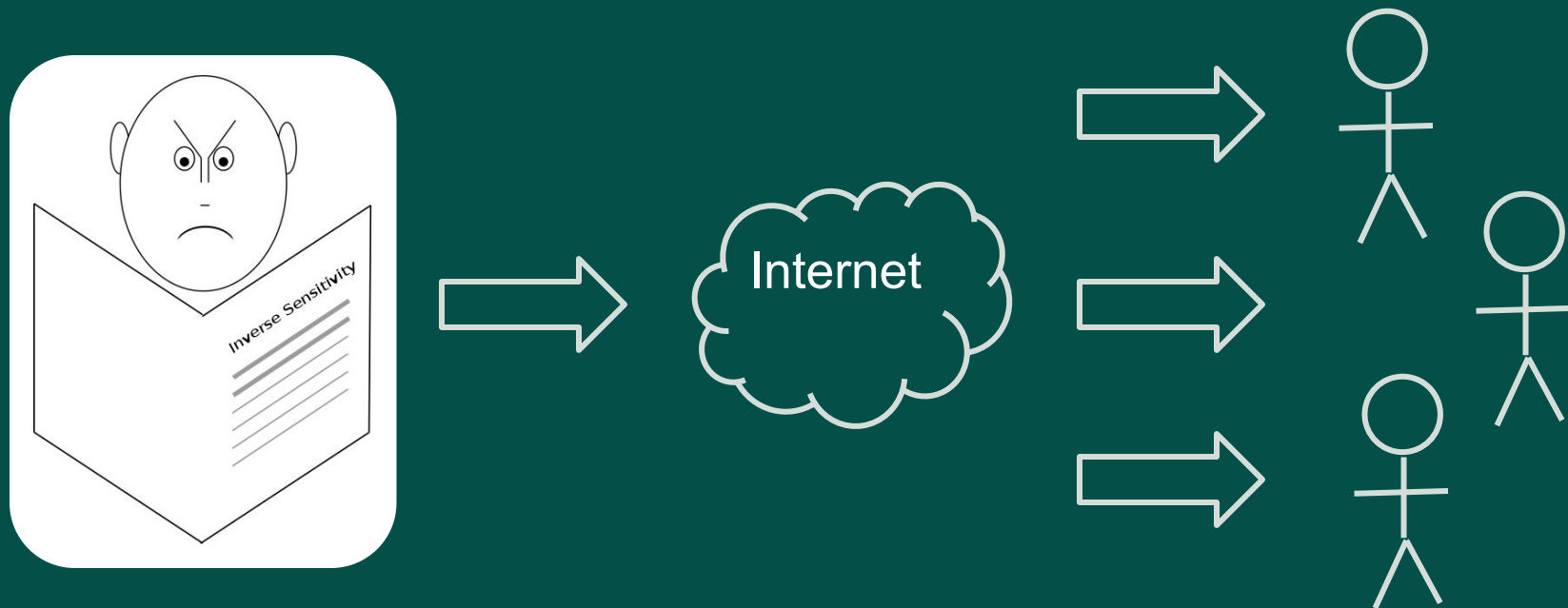
Conflicts of interest block correction:

- Authors
- Journals
- Institutions

"It is difficult to get a man to understand something, when his salary depends upon his not understanding it!"

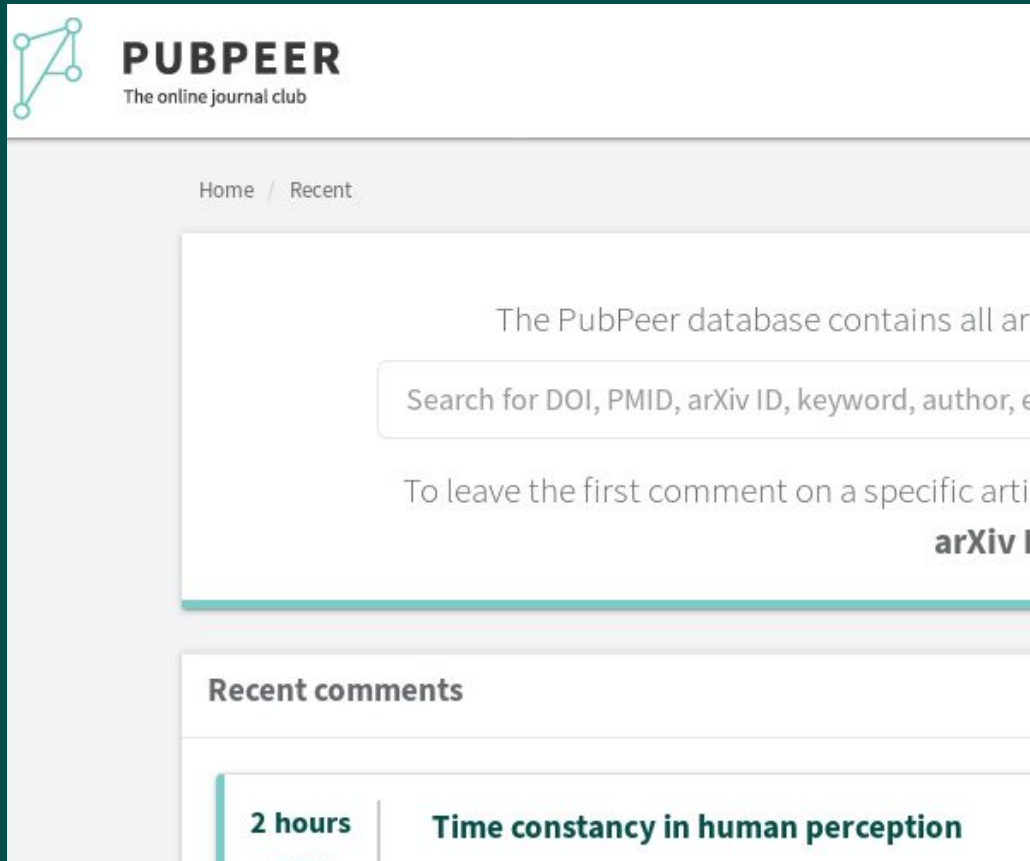
- Upton Sinclair

Bypass conflicts of interest



Researcher to researcher - no intermediaries

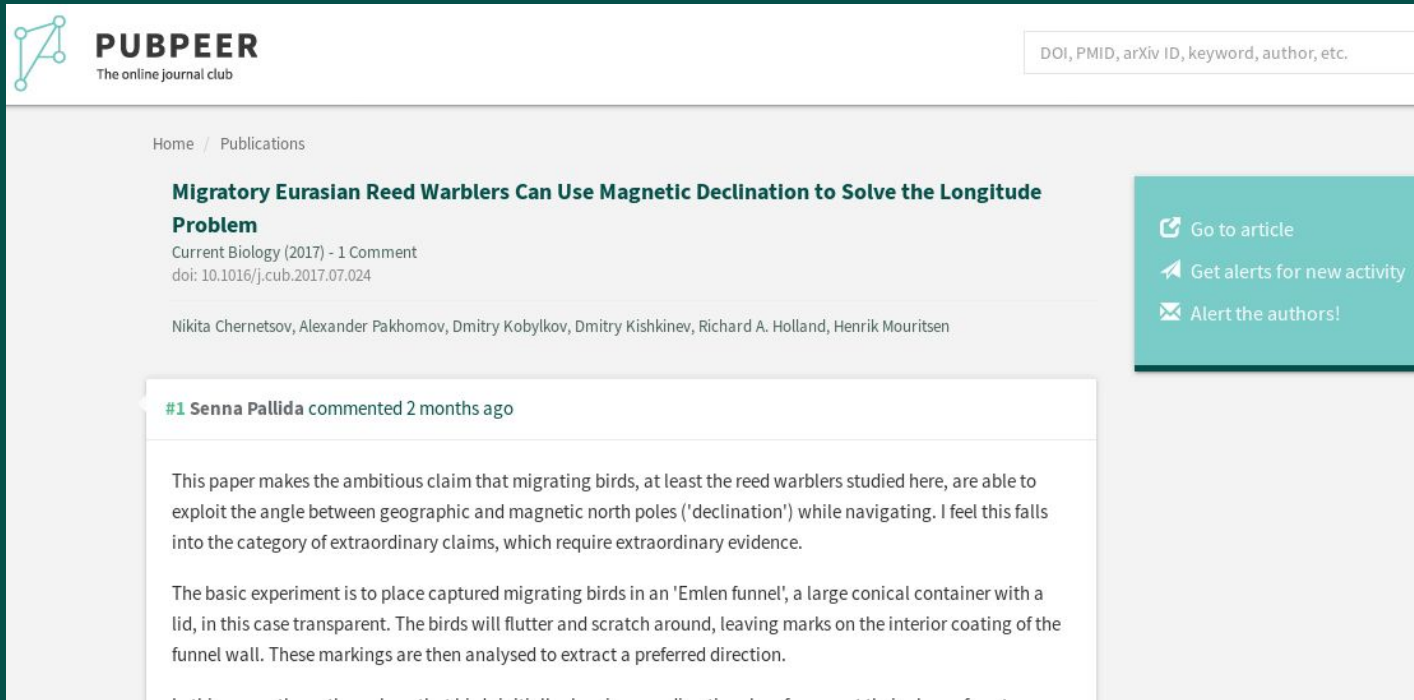
PubPeer launches 2012



Brandon Stell
George Smith
Richard Smith

Nonprofit foundation
since 2015

Immediate, centralised, available worldwide, permanent... and anonymous



The screenshot shows the PubPeer website interface. At the top left is the PubPeer logo with the tagline 'The online journal club'. At the top right is a search bar with the text 'DOI, PMID, arXiv ID, keyword, author, etc.'. Below the header, the breadcrumb 'Home / Publications' is visible. The main article title is 'Migratory Eurasian Reed Warblers Can Use Magnetic Declination to Solve the Longitude Problem', published in 'Current Biology (2017) - 1 Comment' with DOI '10.1016/j.cub.2017.07.024'. The authors listed are Nikita Chernetsov, Alexander Pakhomov, Dmitry Kobylkov, Dmitry Kishkinev, Richard A. Holland, and Henrik Mouritsen. On the right side, there is a teal sidebar with three buttons: 'Go to article', 'Get alerts for new activity', and 'Alert the authors!'. Below the article information, a comment from '#1 Senna Pallida' dated '2 months ago' is displayed. The comment text reads: 'This paper makes the ambitious claim that migrating birds, at least the reed warblers studied here, are able to exploit the angle between geographic and magnetic north poles ('declination') while navigating. I feel this falls into the category of extraordinary claims, which require extraordinary evidence.' followed by a paragraph: 'The basic experiment is to place captured migrating birds in an 'Emlen funnel', a large conical container with a lid, in this case transparent. The birds will flutter and scratch around, leaving marks on the interior coating of the funnel wall. These markings are then analysed to extract a preferred direction.'

Anything with a DOI, arXivID, PMID: all domains, many books, data sets

“Magnetogenetics”...

Genetically targeted magnetic control of the nervous system

Nature Neuroscience (2016) - 18 Comments

pubmed: 26950006 doi: 10.1038/nn.4265 issn: 1546-1726 issn: 1097-6256

Michael A Wheeler, Cody J Smith, Matteo Ottolini, Bryan S Barker, Aarti M Purohit, Ryan M Grippo, Ronald P Gaykema, Anthony J Spano, Mark P Beenhakker, Sarah Kucenas, Manoj K Patel, Christopher D Deppmann, Ali D Güler

Department of Biology, University of Virginia, Charlottesville, Virginia, USA.

#1 ★ **Unregistered Submission** commented 4 years ago

The statistics associated with Fig. 4 may have some problems.

nature
neuroscience

Matters Arising | Published: 30 September 2019

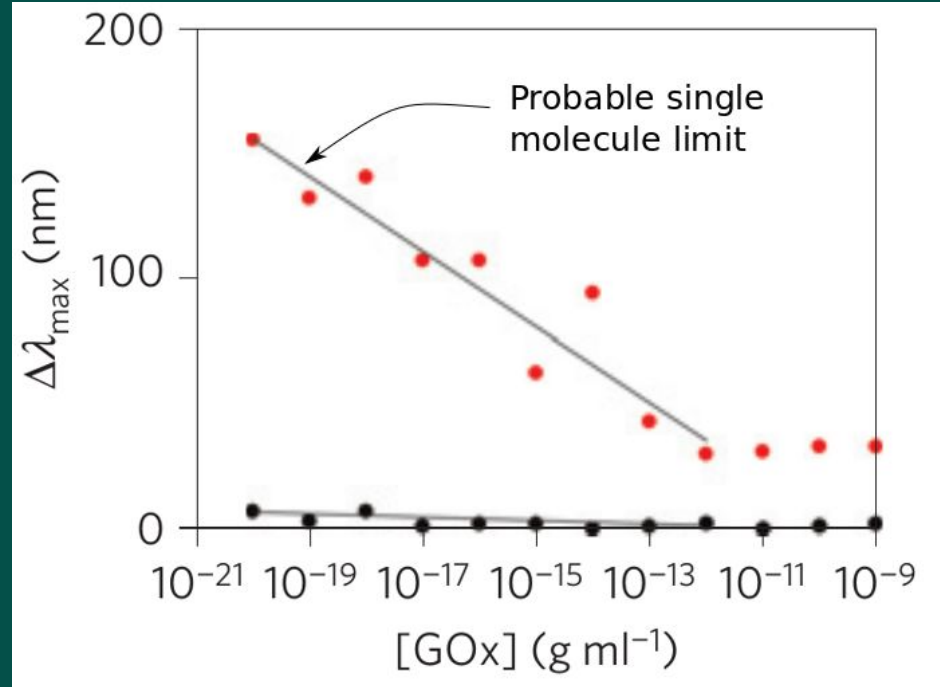
Revaluation of magnetic properties of Magneto

Guangfu Wang, Peng Zhang, Suresh K. Mendu, Yali Wang, Yajun Zhang, Xi Kang, Bimal N. Desai & J. Julius Zhu

4 years later...

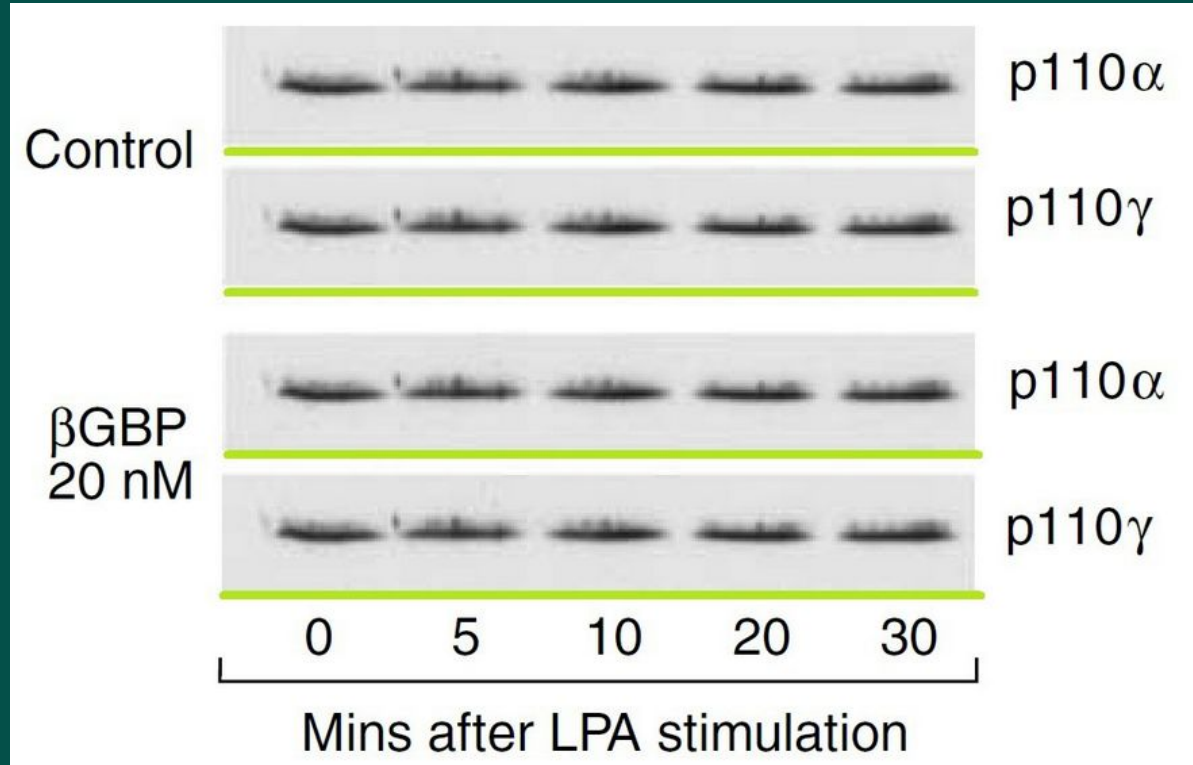
Homoeopathic nanoparticles

Reaction
rate



Substrate concentration

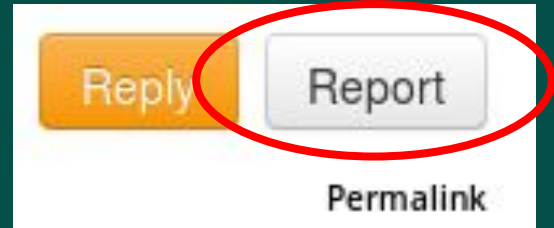
Image duplications... **lots** of them...



=> Concentration of potential misconduct => criticism of anonymity

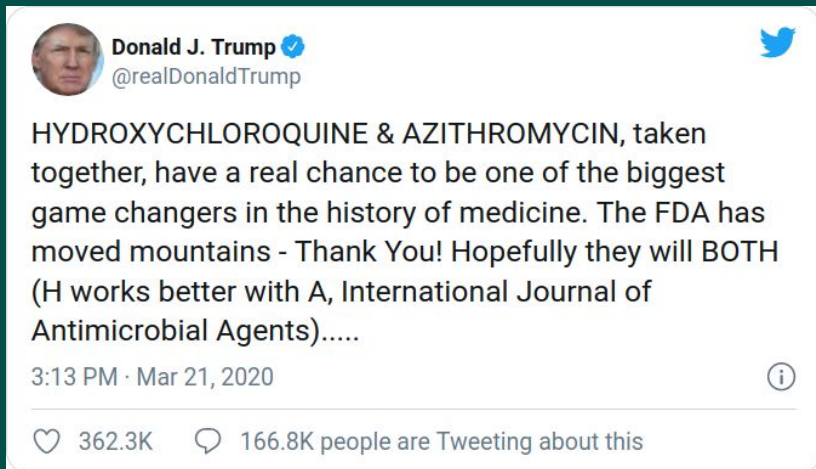
Guidelines and moderation (see FAQ)

1. Scientific substance, originality, no insults
2. Relevance to article, support for argument
3. Publicly verifiable (incompatible with insider whistleblowing)
4. Implied misconduct (image manipulations) must convince moderator
5. Permanent right of reply (author alerts); information bubbles impossible
6. Facilities for reporting abuse
7. Community surveillance
8. Remember: publication was authors' choice
9. Works in practice - please provide examples, data if you wish to criticise!



=> Unlike most social media

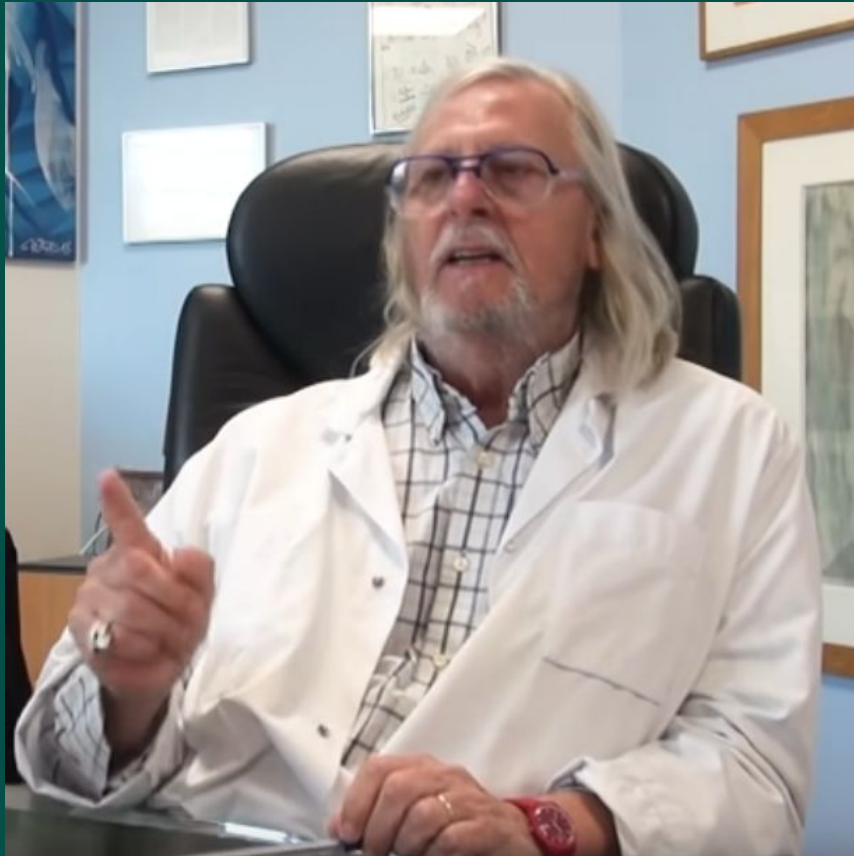
PubPeer's best salesmen (1)



- Need to share information urgently
- Writing to journal too slow
- Alerting university too slow
- Early warnings always beneficial

PubPeer's role is to protect readers and users of publications.
A PubPeer comment helps readers irrespective of official (in)action.

PubPeer's best salesmen (2)

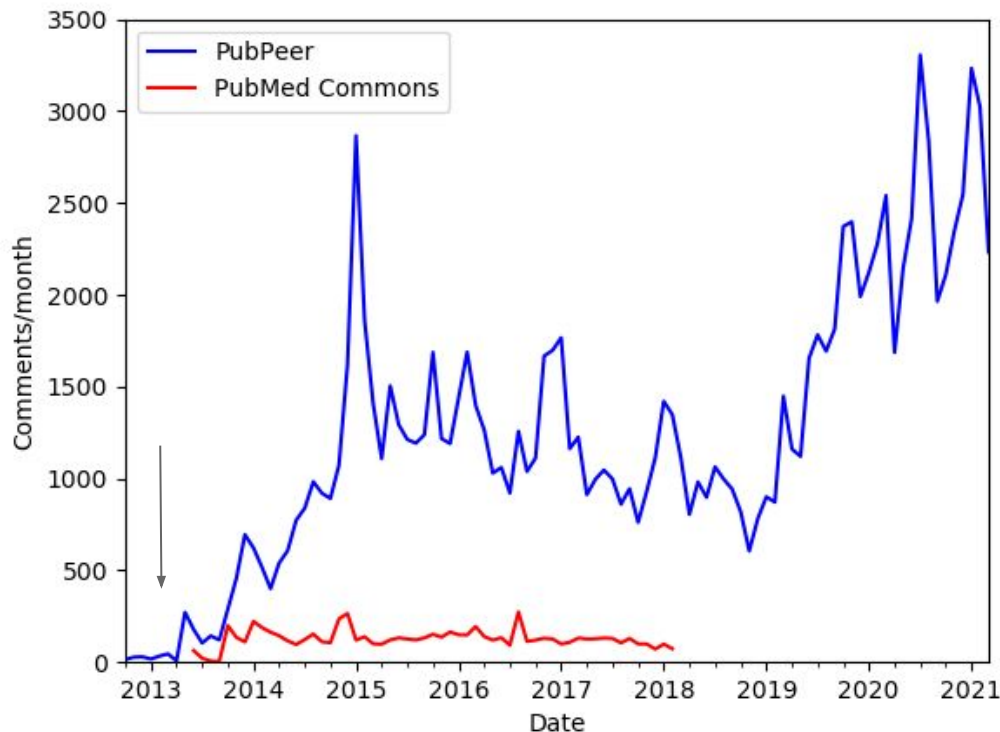


“Actions have consequences that will come when they come, in the form that they will take, but don’t imagine that I’m going to [accept criticism] and say thank you.”

PubPeer’s anonymity protects users from reprisals, legal threats and intimidation.

Statistics

- 120k user comments
 - 40k papers
 - 5k journals
 - 600k views/month
 - 40% prior moderation / 60% trusted users
 - 10% author responses
 - Protection of anonymity (arrow) encouraged commenting
 - Sued zero times
- Somebody cared about each comment



PubPeer integration: inputs

- Users: Elisabeth Bik, Hoya Camphorifolia, SeekAndBlastn...
- Curation services: PreLights, Periodicals, Science Media Centre, PeerCommunityIn...
- Preprint servers: bioRxiv, medRxiv comments
 - Future plan to link articles to preprints with comments
 - Happy to link or mirror journal comments
- Editorial actions (if referenced in databases)
- Blogs
- Twitter: embed threads from 'Science Twitter', @PubPeerBot

=> Policy to gather *useful*, user-generated content; substance only

PubPeer integration: outputs

- Email alerts, persistent personalised searches
- Browser extensions: Chrome, Firefox, Safari, Edge (recognise DOIs)
 - Alerts as you browse => install them!
- Zotero extension (recognises DOIs)
 - Alerts as you cite => install it!
- Preprint servers: bioRxiv, medRxiv link to PubPeer comments
- Twitter: @PubPeerBot
- Dashboards: for journals, publishers, institutions, companies
 - Email alerts, historical cases, official communications
 - Community insight
 - Subscriptions support site operation (thank you!)

=> Your comments get noticed

Browser Add-ons

Alerts while browsing
journal pages

NATURE MATERIALS | LETTER



Plasmonic nanosensors with inverse sensitivity by means of enzyme-guided crystal growth

Laura Rodríguez-Lorenzo, Roberto de la Rica, Ramón A. Álvarez-Puebla, Luis M. Liz-Marzán & Molly M. Stevens

[Affiliations](#) | [Contributions](#) | [Corresponding authors](#)

Nature Materials **11**, 604–607 (2012) | doi:10.1038/nmat3337



32 comments on PubPeer (by: Peer 1, Unregistered Submission, Peer 2, Peer 4, Peer 3, Peer 6, Peer 7)

Received 23 February 2012 | Accepted 12 April 2012 | Published online 27 May 2012



Citation



Rights & permissions




Article metrics


Browser Add-ons

Alerts while browsing
PubMed

(also Zotero extension)

- ☐ [Anisotropic fibrous scaffolds for articular cartilage regeneration.](#)
- 126. McCullen SD, Autefage H, Callanan A, Gentleman E, Stevens MM.
Tissue Eng Part A. 2012 Oct;18(19-20):2073-83. doi: 10.1089/ten.TEA.2011.0606. Epub 2012 Aug 3.
PMID: 22655795 **Free PMC Article**
[Similar articles](#)
- ☐ [Plasmonic nanosensors with inverse sensitivity by means of enzyme-guided crystal growth.](#)
- 127. Rodríguez-Lorenzo L, de la Rica R, Álvarez-Puebla RA, Liz-Marzán LM, Stevens MM.
Nat Mater. 2012 May 27;11(7):604-7. doi: 10.1038/nmat3337.

 32 comments on PubPeer (by: Peer 1, Unregistered Submission, Peer 2, Peer 4, Peer 3, Peer 6, Peer 7)

PMID: 22635043
[Similar articles](#)  [2 comments](#)
- ☐ [Correlative Light-Ion Microscopy for biological applications.](#)
- 128. Bertazzo S, von Erlach T, Goldoni S, Çandarlıoğlu PL, Stevens MM.
Nanoscale. 2012 Apr 28;4(9):2851-4. doi: 10.1039/c2nr30431g. Epub 2012 Mar 30.
PMID: 22466253
[Similar articles](#)
- ☐ [Changes in embryonic stem cell colony morphology and early differentiation markers driven by colloidal crystal topographical cues.](#)
- 129. Ji L, LaPointe VL, Evans ND, Stevens MM.
Eur Cell Mater. 2012 Feb 23;23:135-46.
PMID: 22370796 **Free Article**
[Similar articles](#)

Conclusions

- PubPeer aims to accelerate scientific progress
 - enables immediate, granular correction (cf Planck)
 - is 100% content-focused and metric-immune
 - protects readers and users of articles
- PubPeer content is subject to strong guidelines and moderation
- PubPeer can focus multiple world experts
- Install the extensions!
- Use PubPeer (but verify) when evaluating research
- If you have analysed a paper, please share your analysis for others

Thank you to our commenters!

Author responsibilities, incentives

- The research police have failed
- Unable to cope with the “flood the zone” situation
- General prevention infinitely preferable to ad hoc, post hoc enforcement
- Make it the authors’ responsibility to ensure their work is high quality
- Reward good science, but also discourage bad science
 - COPE guideline: image manipulation = retraction!
 - Community action: researchers review grants, papers, promotions
- Full data access can improve quality and integrity of research
 - but only if *mandatory* and *at publication*
 - otherwise just extra burden on good-faith researchers
 - facilitates distributed, delegated evaluation and inspection
- (See personal blogs at <https://referee3.org>)

Periodicals



PEERIODICALS
Select the best science *beta*

ABOUT

LOGIN

REQUEST INVITATION

Welcome to Peeriodicals!



A **peeriodical** is a lightweight virtual journal with you as the Editor-in-chief, giving you complete freedom in setting editorial policy to select the most interesting and useful manuscripts for your readers.

[learn more](#)

Periodicals

- Lightweight virtual journal (overlay journal)
- Flexible platform
- Single editor (you) or editorial board possible
- Select/review/comment preprints, existing papers
- Can solicit reviews
- No actual publishing necessary!
- However, building up a following takes time

A successful periodical

Updated Sep 21, 2018

27 subscribers

Subscribe



Theoretical neuroscience

Theory of spike initiation, sensory systems, autonomous behavior, epistemology

Editor

Romain Brette


157 Shares



This journal highlights a number of papers that the editor personally finds interesting for computational or theoretical neuroscience, in particular but not limited to spike initiation, sensory systems, autonomous behavior and epistemology of neuroscience. These are not necessarily theoretical papers, but somehow relevant to theoretical neuroscientists (or more accurately, to the editor).

Published

Progress in automating patch clamp cellular physiology (2018)
Luca A. Annecchino, Simon R. Schultz
<http://dx.doi.org/10.1177/2398212818776561>
Sep 21, 2018 - This is a review of recent work in the automation of patch clamp. The reason I discuss it in a journal of theoretical neuroscience is that I have the (slightly naive) hope that automating patch clamp experiments could be a way for theoretical neuroscientists (specifically those wor...



Subjects

Neuroscience (miscellaneous)

Behavioral Neuroscience

Cellular and Molecular Neuroscience

Cognitive Neuroscience

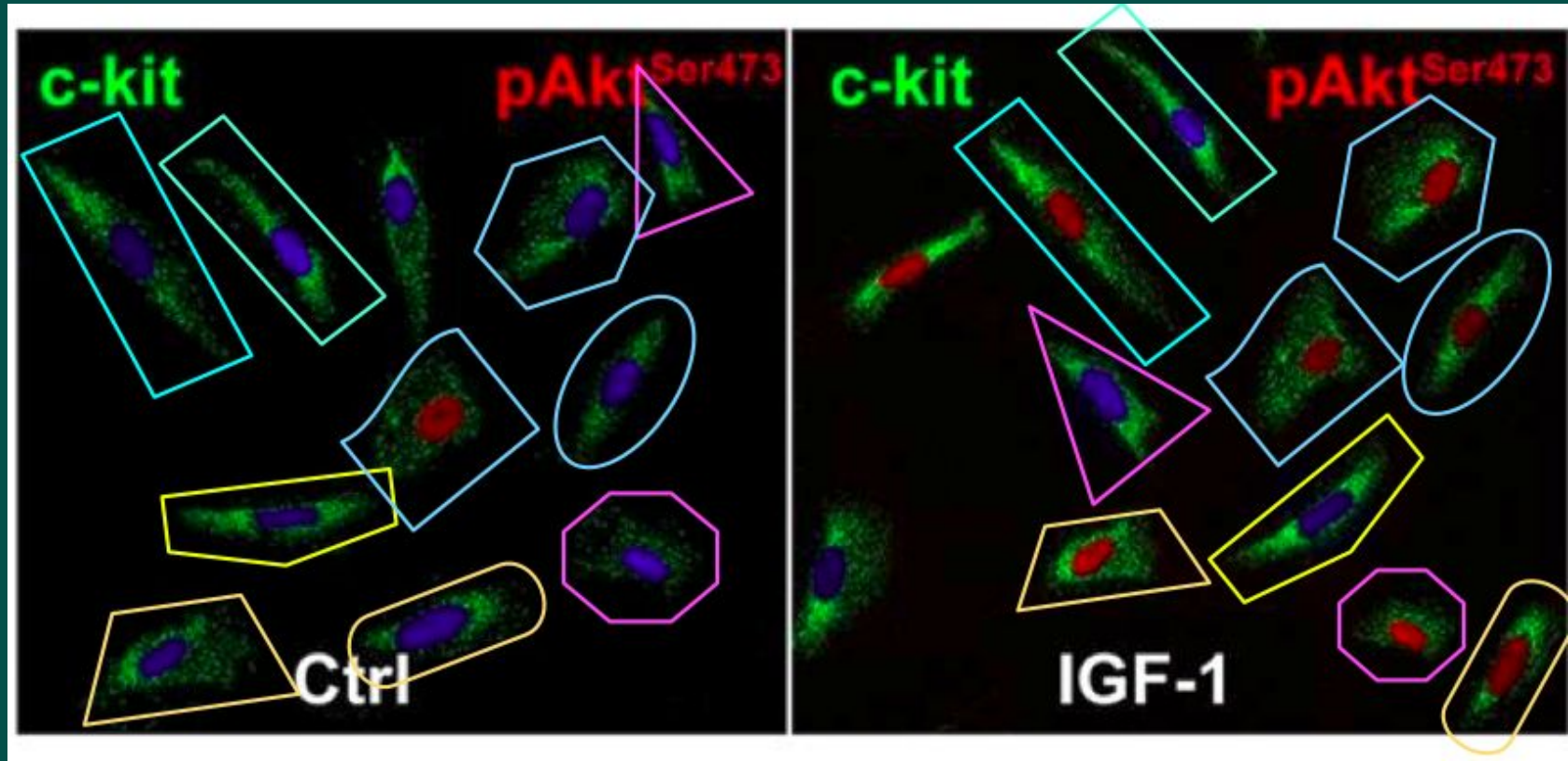
Developmental Neuroscience

Sensory Systems

Multidisciplinary

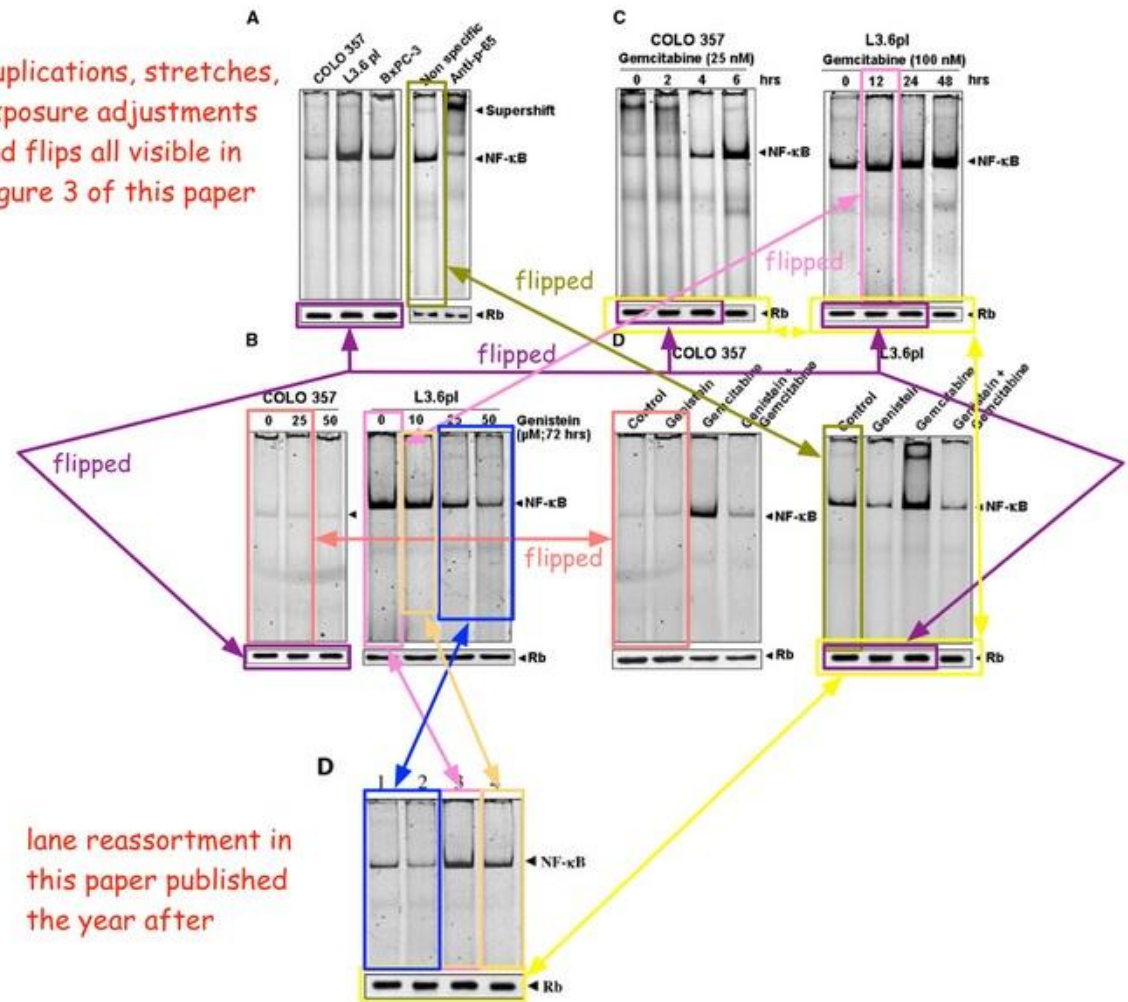
Computational

Systems



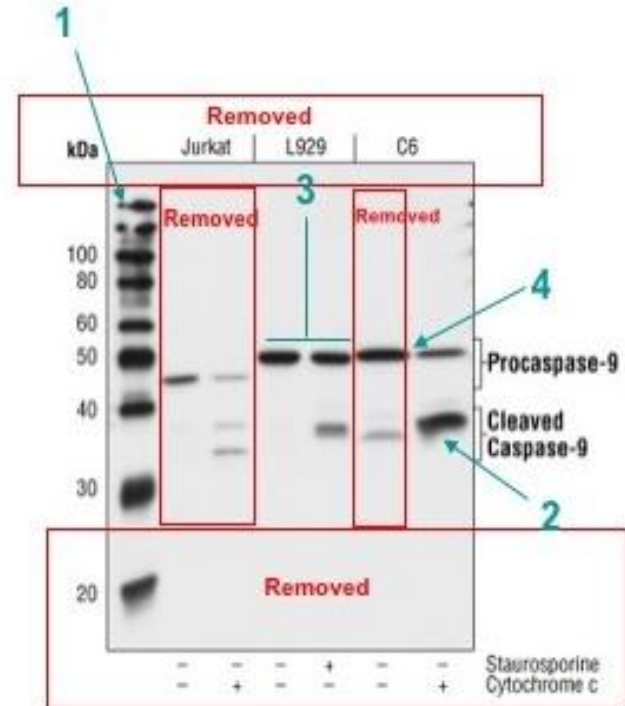
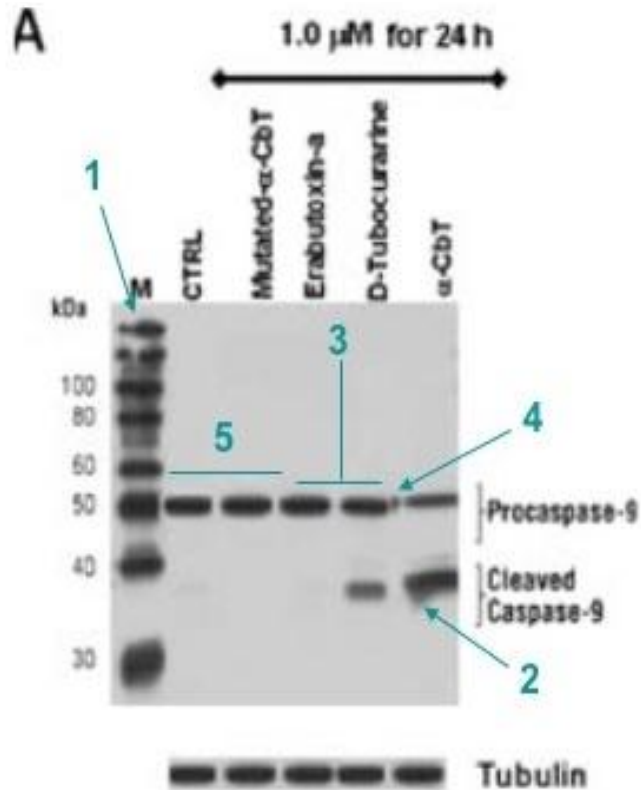
Top US university

Duplications, stretches,
exposure adjustments
and flips all visible in
Figure 3 of this paper



> 20M\$ in grants

Caspase-9 (C9) Mouse mAb #9508 Cell Signaling Technology Catalogue



Another anti-vaxxer



Contents lists available at ScienceDirect

Journal of Inorganic Biochemistry

journal homepage: www.elsevier.com/locate/jinorgbio



Subcutaneous injections of aluminum at vaccine adjuvant levels activate innate immune genes in mouse brain that are homologous with biomarkers of autism

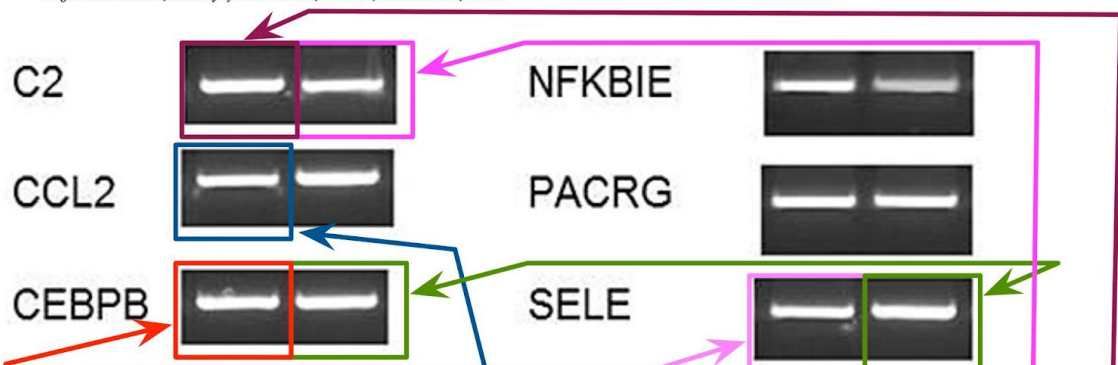


Dan Li^a, Lucija Tomljenovic^a, Yongling Li^a, Christopher A. Shaw^{a,b,c,*}

^a Dept. of Ophthalmology and Visual Sciences, University of British Columbia, Vancouver, British Columbia, Canada

^b Program in Experimental Medicine, University of British Columbia, Vancouver, British Columbia, Canada

^c Program in Neuroscience, University of British Columbia, Vancouver, British Columbia, Canada

















- Anti-vaccination
- Adjuvant Aluminium
-> autism...
- Published 2017
- Already retracted

Recent Nature article

A homing system targets therapeutic T cells to brain cancer

Nature (2018) - 90 Comments

pubmed: 30185905 doi: 10.1038/s41586-018-0499-y issn: 1476-4687 issn: 0028-0836

Heba Samaha , Antonella Pignata, Kristen Fousek , Jun Ren , Fong W. Lam, Fabio Stossi, Julien Dubrulle, Vita S. Salsman, Shanmugarajan Krishnan , Sung-Ha Hong, Matthew L. Baker , Ankita Shree, Ahmed Z. Gad , Thomas Shum, Dai Fukumura , Tiara T. Byrd, Malini Mukherjee, Sean P. Marrelli, Jordan S. Orange, Sujith K. Joseph, Poul H. Sorensen , Michael D. Taylor , Meenakshi Hegde , Maksim Mamonkin , Rakesh K. Jain , Shahenda El-Naggar , Nabil Ahmed 

Department of Pathology and Immunology, Baylor College of Medicine, Houston, TX, USA. .

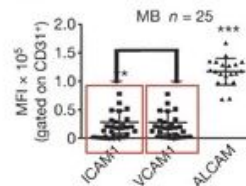
#1



Gymnopilus Purpureosquamulosus commented a year ago



Figure 1i



Thank you

Further reading - PubPeer blog posts:

- *A crisis of trust* (conflicts of interest in publishing)
- *Vigilant scientists* (anonymity)
- *Nature editors - all hat and no cattle* (correction and replication)