Promoting Experience in Peer Review:

Use of Preprints, Blogs, and Training for Early Career Researchers

STM: Diversity and Inclusion
London, December 6, 218
PREreview: 
Supporting the next generation of peer reviewers

Samantha Hindle
Co-founder PREreview.org
Preprints are manuscripts shared online before the completion of journal-organized peer review.
Preprint use is increasing fast in the life sciences.

~2000

Number of preprints posted on *bioRxiv* every month*

40,000

Total number of preprints on *bioRxiv*

>2000%

Growth over the past 4 years*

*December, 2018.
Preprint use is increasing fast in the life sciences.

- Number of preprints posted on bioRxiv every month*: ~2000
- Total number of preprints on bioRxiv*: 40,000
- Growth over the past 4 years*: >2000%

*December, 2018.
Preprint use is increasing fast in the life sciences.

~2000  40,000  >2000%

Number of preprints posted on bioRxiv every month*
Total number of preprints on bioRxiv*
Growth over the past 4 years*

*December, 2018.
Problems

1. Preprint feedback is not common

2. Researchers are rarely trained in peer review

3. ECRs are not part of the picture
Collaborative peer review at journal clubs

LivePREJCs!

Making peer review more inclusive and diverse by:
• bringing the community together
• including authors in a live discussion
• providing ways for ECRs to get involved

Next LivePREJC: 14th December, 5pm GMT
Join us here
Solutions

Interactive Peer Review training program

One-to-one calls

Community calls & expert webinars

Training resources and guidelines

How to start a PREreview journal club: tips & email templates
PREReview Team and 3 more
October 11, 2017

PREreview guidelines: How to write a preprint review
PREReview Team and 2 more
September 28, 2017

Getting started on PREreview: a step-by-step guide
PREReview Team and 3 more
September 14, 2017

@HindleSamantha | @PREreview_ | #PREreview
Connect ECRs with journal editors

PREreviews are linked & acknowledged on the preprint page

PREreview, 30 Apr 2018  Review by Anthony Mathelier

@HindleSamantha | @PREreview_ | #PREreview
PREreview.org, a community and a platform to:

- Encourage discussions around preprints and help with peer-review training for ECRs
- Provide guidelines on how to start a preprint JC and how to write a constructive peer review
- Post preprint reviews with a free DOI so they are citable and easy to share
What’s next?

- Launching our Peer Review Mentoring Program: please join us!
- Rapid PREreviews: collaboration with outbreak science
Thank you!

www.prereview.org

contact@prereview.org

@PREreview_

Add and verify your journal's preprint & peer review policies today!

@TRANSPOSEsci

@HindleSamantha | @PREreview_ | #PREreview
preLights: a new community platform for preprint highlights

Teresa Rayón (preLighter - EMBO training fellow)
The Francis Crick Institute
STM London 6 December 2018
Some challenges with preprints

Difficult to keep up with preprint literature

Public commenting on preprints is not happening
Early-career researchers are at the heart of preLights

Building a resource of preprint highlights for the community

Championing preprints & open science
Early-career researchers are at the heart of preLights

Building a resource of preprint highlights for the community

Championing preprints & open science
Quantification of gene expression patterns to reveal the origins of abnormal morphogenesis

Neus Martinez-Abadias, Roger Mateu Estivill, Jaume Sastre Tomas, Susan Moch Perrine, Melissa Yoon, Alex Robert-Moreno, Jim Swoger, Lucia Russo, Kazuhiro Kawasaki, Joan Richtsmeier, James Sharpe

Preprint posted on January 11, 2018 https://www.biorxiv.org/content/early/2018/01/11/246256

Geometric morphometrics for quantifying developmental defects – analysis of spatio-temporal gene expression in numbers

Selected by Teresa Rayon

Summary
In this pre-print, the Sharpe lab develops a tool to quantitatively characterize gene expression patterns in whole embryos. They identify a limb defect in a mouse model of Apert syndrome carrying a missense mutation on the Fibroblast Growth Factor Receptor 2. In particular, quantifying downstream target Dusp6 allows them to spot the appearance of the limb defects, which have previously remained difficult to discern in mouse models of Apert syndrome.
Why I chose the paper:
One of my mantras is that new discoveries arise when biological phenomena are revisited in quantitative terms, even though they could have been previously studied on the basis of qualitative analysis; this preprint nicely provides a new look at gene expression. The description of gene expression patterns over time during development is the pillar for our understanding of how genes work. In situ hybridisation is as a long existing technique that can be performed in any organism that contains RNA, and it has been used to unravel where and when genes are expressed. However, this technique has always been considered qualitative, difficult to analyse in whole embryos, and subjective at times. Neus Martinez-Abadias and colleagues develop a tool that allows them to accurately measure and determine subtle spatial changes in gene expression patterns in mouse mutants by combining image analysis, segmentation, and geometric morphometrics. There are very few examples where morphometric approaches have been applied to study morphological variability, and precisely relate it to gene expression. In the method, the authors first image and segment the shape of the tissue, and the expression pattern of Dusp6. Then, they describe its shape in 3D as a set of landmark coordinates. In this way, they objectively compare tissue morphology with a given gene expression pattern across embryos at various developmental stages to identify previously unrecognised limb defects at the molecular level.

Questions to the authors:
Since the technique is very powerful, I wonder the amount of time the authors dedicated to process the data, and how easily could it be applied in other labs. Which do the authors think are the limitations of the technique? How subtle can the changes be to define a given phenotype? Have they tried to do the analysis with more than one gene?

my take on

Questions to the preprint author
Author’s response to questions

preLights posts are linked in bioRxiv

Preprint discussion sites covering this article:

Blog posts linking to this article:

the Node, 02 Feb 2018
Quantification of gene expression patterns to reveal the origins of abnormal morphogenesis

Neus Martinez-Abadias, Roger Mateu Estivill, Jaume Sastre Tomas, Susan Motch Perrine, Melissa Yoon, Alex Robert-Moreno, Jim Swoger, Lucia Russo, Kazuhiko Kawasaki, Joan Richardsmeier, James Sharpe

doi: https://doi.org/10.1101/246256

Now published in eLife doi: 10.7554/elife.36405

Quantification of gene expression patterns to reveal the origins of abnormal morphogenesis

Neus Martínez-Abadias, Roger Mateu Estivill, Jaume Sastre Tomas, Susan Motch Perrine, Melissa Yoon, Alexandre Robert-Moreno, Jim Swoger, Lucia Russo, Kazuhiko Kawasaki, Joan Richardsmeier, James Sharpe

1Centre for Genomic Regulation, The Barcelona Institute for Science and Technology, Barcelona, Spain; 2Universitat Pompeu Fabra, Barcelona, Spain; 3EMBL Barcelona, European Molecular Biology Laboratory, Barcelona, Spain; 4Universitat de Barcelona, Barcelona, Spain; 5Universitat de les Illes Balears (UIB), Palma de Mallorca, Spain; 6Pennsylvania State University, Pennsylvania, United States; 7Institució Catalana de Recerca i Estudis Avançats, Barcelona, Spain
The manuscript reflects how labor intensive it was to develop the technique for the first time. Now that the experimentation, imaging, segmentation and landmark processing of the samples have all been optimized, and are explained in full detail in the paper, a similar sample as the one used in this study could be processed in several weeks. The number of genes to be assessed will depend on the intrinsic nature of the investigation and the available resources.

One of the main apparent difficulties to implement the OPT-GM method might be the lack of familiarity with Geometric Morphometrics (GM) within the Developmental Biology field. However, GM is currently used in many laboratories to analyze the patterns of morphological variation in all types of organisms (Klingenberg, 2010). Thanks to the growing interest in this technique, many resources are available to learn and perform GM studies (http://life.bio.sunysb.edu/morph/index.html). Actually, all the analyses in this study have been performed using freely available software and scripts that were rewritten to automatize the process, as for example Fiji (Fiji is just ImageJ) and R packages especially suited to GM, such as geomorph.

An extended discussion on these issues can be found at the following link:


This issue has been dealt with in the text in the Discussion section.
Early-career researchers are at the heart of preLights

Building a resource of preprint highlights for the community

Championing preprints & open science
Championing preprints & open science

Commentaries and blog posts

Meeting up at conferences

Discussions, giving feedback to each other
So far the preLights ‘experiment’ is encouraging

Initial stats on preLights:
• Launched end of February 2018
• 90 ‘preLighters’
• >200 posts after 8 months
• 30% of posts feature an author’s response
• ~2000 views per week
• >2000 followers on twitter
• Feedback from community has been hugely positive

“Wonderful! This is a game changer”  “It looks fantastic!”
“I do like the ‘Author’s Response’ section”  “great initiative”
“Showing how preprints allow for the evolution of the scientific publishing model”
Thank you

Apply to join the team of preLighters!

preLights
Preprint highlights, selected by the biological community

en fase EXPERIMENTAL

https://sruk.org.uk/ @t_rayon #EnFaseExperimental
JOURNAL REVIEW CLUB

Emma Shumeyko
Managing Editor
American Society for Clinical Pharmacology and Therapeutics
WHAT IS IT?

An interactive session, focusing on a recently published article, that

▪ provides real-world review practice alongside insights from the author,
▪ highlights the impact and importance of peer-review,
▪ engages early career members (and reviewers and authors!), and
▪ answers questions about how peer review works from inside the editorial office.
HOW DOES IT WORK?

Participants receive a copy of the manuscript as it was submitted to the journal and are asked to come to the session prepared with their own comments on the manuscript.

Review Form

- Decision Recommendation (Reject, Major Revision, Minor Revision, Accept)
- Quality of Science (Please rate the quality of science of this manuscript on a scale of 1 (low) - 5 (high))
- Comments on article's potential impact
- Remarks to the Author
 HOW DOES IT WORK?

Session Agenda

1. Introduction and overview
2. Summary of the paper
3. Review/comments discussion
4. Author perspective of review/comments and explanation of revision process
5. Discussion on benefits of the peer review process

Additional Materials

1. Original review comments
2. Tracked changes manuscript
3. Author’s Response to Reviewer comments
4. Published paper
KEYS FOR SUCCESS

▪ Great facilitator
▪ Right manuscript
▪ Face-to-face, in person or virtually
▪ Limited participants (10-12 ideal)
▪ Relaxed, comfortable atmosphere
THANK YOU!

emma@ascpt.org
In Review – unlocking the potential behind early sharing

Amye Kenall
6 December 2018
Springer Nature and the early sharing space

- BMC experiments with early preprint via "Deposited Article"
- Nature Precedings
- Protocols Exchange
- Under Consideration from Nature Comms
- Partnership with bioRxiv via journal links

3%
Even after a Statement on data sharing during public health emergencies signed by Springer Nature, Wellcome, and many others, only 3% of publications across both outbreaks were associated with preprints.

Of those that were made available, most were available more than 100 days before publication.
More than a nice practice, sharing early is a necessary condition of openness
The *In Review* platform

Powered by *Research Square* and developed in partnership with *BMC*, *In Review* aims to open up the peer review process to authors and beyond. The first service of its kind, *In Review* will provide authors with on-demand access to the granular status of their manuscript, including number of reviewers invited and immediate access to reviewer reports, and will allow authors to showcase their work to funders and others and to engage the wider community for comment and collaboration while their manuscript is under review.
Tour of In Review
Try out our author dashboard and share your work early

*BMC Anesthesiology* is launching a new initiative to help open up the submission and peer review process for authors called *In Review*. Powered by *Research Square* and their author dashboard, *In Review* will provide you with on-demand access to the status of your manuscript and will allow you to showcase your work to the wider community for comment while your manuscript is under review.

**By using *In Review* authors are able to:**

- Showcase their work to funders and others in a citeable way while it is under review and engage the wider community in discussion to improve their paper
- Track the status of their manuscript on a more granular level -- including number of reviewers invited, number of reports received, and immediate access to reviewer reports
- Demonstrate the integrity of their work with a transparent editorial checklist
- Benefit from early sharing, such as more collaboration opportunities and earlier citations.

You can read more about *In Review* [here](https://www.researchsquare.com/in-review). By opting in all versions of your manuscript will be posted as and when they are available. **Tick this box if you would like to opt in to this opportunity and agree to the licensing terms.**

☐ I would like to opt in
Public Article page

Journal status
Editorial badges
Hypothes.is annotations
Review history – updated in real time whenever there is a status change

https://www.researchsquare.com/company/publishers/pre-publication-platform
Author view

Full Peer Review History - Updated as soon as a review or decision is received

Suggest Reviewers – Allows authors to suggest reviewers if their paper is held up

ABSTRACT

Background: Nucleophosmin is a non-ribosomal nucleolar phosphoprotein that is found primarily in the nucleolar region of cell nucleus, plays multiple important roles in tumor processes. Accumulated previous studies have reported a potential value of NPM acted as a biomarker for prognosis in various solid tumors, but the results were more inconsistency. We performed this meta-analysis to precisely evaluate the prognostic significance of NPM in solid tumors. Methods: Clinical data were collected from a comprehensive literature search in PubMed, Web of Science, Embase, and China National Knowledge Infrastructure databases (up to October, 2017). A total of 11 studied with 997 patients were used to assess the association of NPM expression and patients' overall survival (OS). The
Feedback so far

- First opt in 2 hrs after launching
- Over 100 articles opted in within first 3 weeks
- Opt in rate to early sharing: 3% → 44%
- Lots of positive feedback on twitter

Pilot opt in rate, 19 November

<table>
<thead>
<tr>
<th>Journal</th>
<th>Submissions to &quot;In Review&quot;</th>
<th>Total Submissions (since 18 Oct)</th>
<th>Opt-in rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trials</td>
<td>29</td>
<td>126</td>
<td>23%</td>
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<tr>
<td>BMC Neurology</td>
<td>45</td>
<td>89</td>
<td>51%</td>
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<tr>
<td>BMC Anaesthesiology</td>
<td>43</td>
<td>74</td>
<td>58%</td>
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<tr>
<td>BMC Ophthalmology</td>
<td>48</td>
<td>90</td>
<td>53%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>165</td>
<td>379</td>
<td>44%</td>
</tr>
</tbody>
</table>
Majority of opt-ins are coming from China and Asia generally

Positive qualitative feedback

#TrialsJournal launches innovative #preprint #platform. Great idea! @MedicalEvidence @shauntreweek @GrimshawJeremy Tianjing Li @JohnsHopkinsEPI

Very interesting concept. Hope it becomes the new standard so we can stop frantically checking our papers' status. #open #PeerReview

This is a great pilot! Your work gets a DOI (similar to a preprint) while it is undergoing peer review @BioMedCentral

“Cool. It’s a little like F1000’s approach but on steroids.”
Next steps

- Expand journal participation—at Springer Nature and beyond—creating a cross-publisher service
- Migration of Protocols Exchange and Nature Precedings (early January)
- Offer ‘Direct Submission’ pathway so that authors can post preprints directly
- Offer author tools such as automated language assessment and reproducibility checks
- Expand community review functionality
- Work with you — to ensure we are providing an “approved platform that supports immediate publication of the complete manuscript” before peer review (new OA policy requirement #4)
The story behind the image

Marie Curie (1867–1934)

In a scientific world still dominated by men, Marie Curie shone not only as an extraordinary pioneer in the field of radioactivity, but also as a trailblazing female scientist. A French-Polish chemist and physicist, Curie discovered two new elements, polonium and radium, and revolutionised our understanding of radioactivity, the process by which unstable atoms decay by emitting energy in the form of radiation. The first person of either gender to win or share two Nobel Prizes, Curie is one of the most renowned scientists of a generation, whose influences can be seen throughout many areas of modern science, from particle physics to medicine.

Thank you

Questions?