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EXECUTIVE SUMMARY

TRANSPARENCY, RECOGNITION AND INNOVATION IN PEER REVIEW IN THE LIFE SCIENCES

Wednesday, February 7, 2018 HHMI Headquarters

Meeting information at http://asapbio.org/peer-review

Complete Summary at www.healthra.org

Live collaborative notes (Google Doc)

Questions addressed:

Journal-conducted peer review is the foundation of how scientific work is evaluated and validated yet there are many flaws in the current system. How might peer review be advanced to benefit science and scientists (not journals) especially taking into account issues such as fairness and transparency, rigor and reproducibility, and current technology?

- Should journal peer review become a transparent and citable form of scholarly communication?
- Should scientists receive credit for peer review and, if so, how might this be achieved?
- What are best practices in peer review, how can they be spread? How can we train scientists in scholarly review?
- Is it possible to overcome inefficiencies and redundancies in peer review?
- Should reviewers be expected to review supporting datasets and code?
- Using new tools (e.g. preprints and the internet), are there new models for feedback/evaluation that could augment traditional peer review?

Meeting Highlights:

One of the most important recommendations for funders: *Recognition of contribution to reviews should be viewed as scholarship. But this needs transparency first, the community needs to move to more transparent peer review then move to recognition of scholarly contributions.*

- All reviewers who contribute should be given credit (postdocs, grad students) not just invited reviewer.
- Open and active participation of reviewers should be **acknowledged for the scholarly work** that it really is (review signed and given a DOI is ideal).
- There are many ways peer review can be "open." (See article or page 4 of full summary).
- "Open reports" are a valuable contribution, we should move in that direction (open reports are review reports published alongside article.) See full summary page 8 for a full list of benefits and risks.
- Postpublication evaluation could also be very valuable, though currently there is no incentive.
    - F1000 is a service provider for postpublication review and it hosts Wellcome's Open Research. Authors submit, referees are invited after publication. Reviews published and signed. ALL referees get credit. Author gets great feedback.
    - F1000 and WOR already send open reports to NLM for PMC discoverability.
    - BMJ has Open Peer Review with a very active community of post publication commenting which follows the article. BMJ uses the Review Quality Instrument (RQI) for Assessing Peer Review of Manuscripts. RQI assesses the extent to which a reviewer has commented aspects of manuscript.
- Funders should **consider a scientists' peer review activity as a scholarly contribution** to science which will reward/incentivize contributing effort toward peer review. Considering an applicant's Publons profile (of review activity) could be included in the evaluation of grant applications.
- Funders should also **consider allowing applicants to cite peer review (postpublication or open peer review) in assessing grant proposals.** This would incentivize and normalize open peer review reports.
- Sufficient capacity doesn't currently exist with peer review infrastructure to help identify underpowered experiments and the lack of sample size estimation. If appropriate, **funders could look for these points in experimental design** (preregistration).
- Preprint Journal Clubs are a very valuable way to train peer reviewers, provide feedback to authors, and increase diversity across the peer review process. Attendees strongly favored this idea. See page 9 of full summary.

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- Open participation or public commenting could add significant value – if scientists and scientific communities used it appropriately.
- Other ways to improve peer review include
    - Leverage expertise – review would mirror the way we do science. Collaboration among reviewers to evaluate their area of expertise for each article.
    - Split gatekeeping vs technical into different layers: Technical side at the preprint level, suitability for the journal and ethical standards at the journal level.
- ASAPBio is proposing a journal agnostic assigned peer review system. "Peer feedback" is the name for their proposed infrastructure where review of technical merit comes after submission to preprint server, but before submission to journals. Journals check suitability and ethics etc and function more as curators. See page 10 of full summary.
- HHMI has proposed Article-specific Tags or Badges which would be easily generated and consumed (to replace JIF) post-publication tags or badges that were indicators of article-level scientific quality and impact, that changed over time. See page 11 of full summary.

NEXT STEPS:
HHMI and CZI will partner to support experiments in transforming peer review. Experimental details and all data must be shared openly. All are welcome to apply. Stay tuned for additional details.

Platforms of which to be aware:
F1000 – F1000Research is an Open Research publishing platform for life scientists, offering immediate publication of articles and other research outputs without editorial bias.
Crossref - **Crossref** Makes research outputs (including funding) easy to find, cite, link, and assess.
Publons - **Publons** is a website and free service for academics to track, verify and showcase their peer review and editorial contributions across the world's academic journals.
hypothes-is - Hypothes.is uses annotation to enable sentence-level note taking or critique on top of news, blogs, scientific articles, books, terms of service, ballot initiatives, legislation and more.
PubPeer is another post-publication commenting tool. It seems great for science but harsh for authors.

Speaker list and links to slides:
Opening session:
Meeting Objectives (Ron Vale) – slides
Keynotes

- Erin O'Shea (HHMI) – slides
- Jeremy Berg (Science) – slides
- Mike Lauer (NIH) – slides

Session 1:

- Tony Ross-Hellauer (KnowCenter) – slides
  Open Peer Review – Researcher Attitudes and Next Steps
- Rebecca Lawrence (F1000) – slides
  F1000: Our experiences with preprints followed by formal post-publication peer review
- Theo Bloom (BMJ) – slides
  Open peer review at BMJ: What we know and what we don't
- Joyce Backus (NIH NLM) – slides
  MEDLINE and PMC – Role of journal peer review in journal evaluation.
- Jennifer Lin (Crossref) – slides
  Peer Review Metadata: Provisioning it to systems across the research enterprise
- Andrew Preston (Publons) – slides
  Publons: Recognizing review and the challenges we've faced along the way.

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- Kaf Dzirasa (Duke)
  Researcher perspective
- Natalie Ahn (University of Colorado, Boulder)
  Researcher perspective

Session 2:

- Prachee Avasthi (Kansas University Medical Center) – slides
  Providing peer review training and preprint feedback through preprint journal clubs.
- Andrew McCallum (U Mass Amherst) – slides
  OpenReview.net: Five years of open peer review experience in computer science
- Mike Eisen (UC Berkeley/HHMI) – slides
  Appraise (A Post-Publication Review and Assessment In Science Experiment)
- Ron Vale (UCSF/HHMI/ASAPbio) – slides
  Peer Feedback
- Bodo Stern (HHMI) – slides
  Article-specific tags

DORA announcement – Declaration on Research Assessment. The declaration calls attention to the inappropriate and flawed use of journal impact factors and the community need for assessment tools to measure research outcomes other than peer-reviewed publications.

- Stephen Curry