How to review well: Perceptions of training needs for reviewers
Peer review at Wiley

- Peer Review Management department established in 2014

- Global department with three regional teams (EMEA, NA, APAC)

- ~250 journals with publisher-based editorial offices, cross-discipline

- Development of best practice in peer review, editorial office systems, adherence to ethical publishing standards
The problem

‘Currently peer review is thought to be slow, expensive, profligate of academic time, highly subjective, prone to bias, easily abused, poor at detecting gross defects, and almost useless for detecting fraud’


‘Peer review is dead...long live peer review!’
Who decides what makes a good reviewer?

‘Industry-wide agreement on core competencies may facilitate the reward and recognition of reviewers.’

‘It was asked whether there is a lack of trust in the reviewing ability of emerging and high-growth market researchers. A training and recognition mechanism based on core competencies could help alleviate this issue.’

The net promoter score – ‘would you use this reviewer again?’ – in lieu of any more substantial measure: simple and fairly consistent application
External drivers

- Funders
- Peer review training
- Institutions
- Readers
- Publishers
External drivers

‘Given the importance of peer review across the research spectrum, from grant applications to publications, we consider that all early-career researchers should be given the option for training in peer review.’
External drivers

‘We welcome the fact that the publishers we have heard from are training authors and reviewers on an international level, particularly those from countries which are not traditional scientific leaders, and we encourage others to do the same. This should help alleviate the current imbalance between publication output and participation in peer review.’

House of Commons S&T Committee report, 2011
External drivers

‘...major organizations including medical schools, medical regulatory and accreditation organizations (such as the General Medical Council and Royal Colleges in the UK), funding bodies, publishers and journal editors and lay people need to come to a consensus on the definition, purpose, standards and training requirements of peer review of RCTs. Training should begin in medical schools and be ongoing.’
Internal drivers

Sense About Science peer review survey:

• ~4k researchers selected from ISI database
• July/August 2009
Internal drivers: the Wiley survey

- 170,000 authors contacted
- Wiley authors and authors publishing in journals with IF in 2014
- 2,892 usable responses received
- broad geographical and disciplinary representation
- self-selection bias is a weakness of the study
wileypeerreview.github.io
Who are the reviewers?

US researchers bear a disproportionate burden of peer review: ~33% of papers reviewed but ~23% of papers published

Contrast China, where researchers publish ~x2 as many papers as they review

A possible solution to the ‘reviewer crisis’ (shortage of reviewers)?

‘There is a need to increase the reviewer pool especially in high growth and emerging markets and among early career researchers’
Do reviewers want training?

Most reviewers would welcome further training support:

‘Early career respondents rate guidance and mentoring as important, while late career respondents rank general ethics guidelines for peer reviewers as more important’

<table>
<thead>
<tr>
<th>TABLE 6</th>
<th>The number of respondents who would participate in peer review training sessions if offered the opportunity.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Responses by number of years reviewing (%)</td>
</tr>
<tr>
<td></td>
<td>&lt;1</td>
</tr>
<tr>
<td>No</td>
<td>6</td>
</tr>
<tr>
<td>Yes</td>
<td>94</td>
</tr>
</tbody>
</table>
Do reviewers want training?

‘The findings of this survey suggest that training support for reviewers is needed throughout the researcher career arc, not just for those new to reviewing’
What training do reviewers want?

Specific training areas that are in most demand.

- Constructing a Report
- Providing Feedback
- Handling Plagiarism Issues

Demand for training on fundamentals of reviewing crosses all experience levels.
How do training needs vary by discipline?

Notable differences between disciplines include:

- **Reviewing Systematic Literature Paper**
  - Health Sciences: 8%
  - Life Sciences: 6%
  - Physical Sciences: 6%
  - Social Sciences and Humanities: 8%

- **Performing a Statistical Review**
  - Health Sciences: 10%
  - Life Sciences: 9%
  - Physical Sciences: 4%
  - Social Sciences and Humanities: 9%

- **Reviewing a Quantitative Research Article**
  - Health Sciences: 8%
  - Life Sciences: 7%
  - Physical Sciences: 9%
  - Social Sciences and Humanities: 8%

- **Reviewing Data**
  - Health Sciences: 6%
  - Life Sciences: 7%
  - Physical Sciences: 5%
  - Social Sciences and Humanities: 9%
How do training needs vary by region?

Providing constructive, useful feedback was the most popular training topic for 50% of all regions.
What training do reviewers want?

<table>
<thead>
<tr>
<th>Training Type</th>
<th>Responses by number of years reviewing (%)</th>
<th>All responses (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&lt;1</td>
<td>1-2</td>
</tr>
<tr>
<td>Introduction to becoming a peer reviewer</td>
<td>14</td>
<td>11</td>
</tr>
<tr>
<td>Handling conflicts of interest</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Handling plagiarism issues</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>Constructing a review report</td>
<td>11</td>
<td>12</td>
</tr>
<tr>
<td>Providing constructive, useful feedback</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>Working with editors during the review process</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>How to review a qualitative research article</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Reviewing a quantitative research article</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Performing a statistical review</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Reviewing a clinical paper</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Reviewing a systematic literature review paper</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Reviewing data</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Handling re-reviews</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Understanding/checking against reporting standards guidelines</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>
Notable (but unsurprising?) variations

Social sciences and humanities: main interest in how to review a qualitative research article

Health and life sciences: main interests in
• performing a statistical review
• reviewing a systematic literature review
• reviewing data
• handling re-reviews

‘Asian reviewers express much higher demand for an introduction to becoming a peer reviewer, working with editors, and reviewing a qualitative research paper than Western counterparts’
How do reviewers learn at the moment?

<table>
<thead>
<tr>
<th>Training received</th>
<th>Responses by number of years reviewing (%)</th>
<th>All responses (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&lt;1</td>
<td>1–2</td>
</tr>
<tr>
<td>Guidance from my PI/supervisor</td>
<td>25</td>
<td>22</td>
</tr>
<tr>
<td>Participation in a journal-level reviewer mentoring scheme (across multiple journals)</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Physical workshops/seminars on how to review</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>Live webinars on how to review</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Videos on how to review</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Reading of general review ethics guidelines (e.g. COPE)</td>
<td>14</td>
<td>17</td>
</tr>
<tr>
<td>Reading of journal-level guidelines for reviewers</td>
<td>30</td>
<td>29</td>
</tr>
<tr>
<td>Informal counselling from peer network</td>
<td>16</td>
<td>14</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>
How do reviewers learn at the moment?

**Informal**
- Mentoring and advice from senior colleague
- Journal club with colleagues

**Formal**
- Publishers
- Institutions (postgraduate course modules)
How do reviewers learn at the moment?

‘Part of the training of a scientist is peer review. For example, journal clubs, which are an almost ubiquitous part of the training of scientists, bring people together to criticise a piece of published work. That is a training in peer review. Can more be done to train peer reviewers? Yes, I think it probably can. **PhD courses increasingly have a significant generic element to them. It is reasonable that peer review should be part of that.**’

Sir Mark Walport, Wellcome Trust, quoted in House of Commons S&T committee report
How do reviewers learn at the moment?

Publisher resources
Wiley: www.wileypeerreview.com
Elsevier Reviewers Hub: https://www.elsevier.com/reviewers
Springer peer review academy: https://www.springer.com/gp/authors-editors/journal-author/peer-review-academy
BioMed Central reviewer tips: http://www.biomedcentral.com/series/peerreview

Journal initiatives
*Journal of Morphology* reviewer mentoring and workshop
*Austral Ecology* ECR reviewer programme

Learned societies
British Academy of Management workshop at annual meeting

Industry bodies
COPE www.publicationethics.org
ISMTE www.ismte.org
EASE www.ease.org
Peering into the future

Institutions and funders making reviewing activity more accountable/transparent > efficiencies in research and review output

Publishers and societies providing greater training opportunities for researchers, specifically in reviewing

More formal training courses required/provided by institutions

Drive towards core competencies/what makes a good reviewer

Increasing globalisation of reviewer pool
Questions?