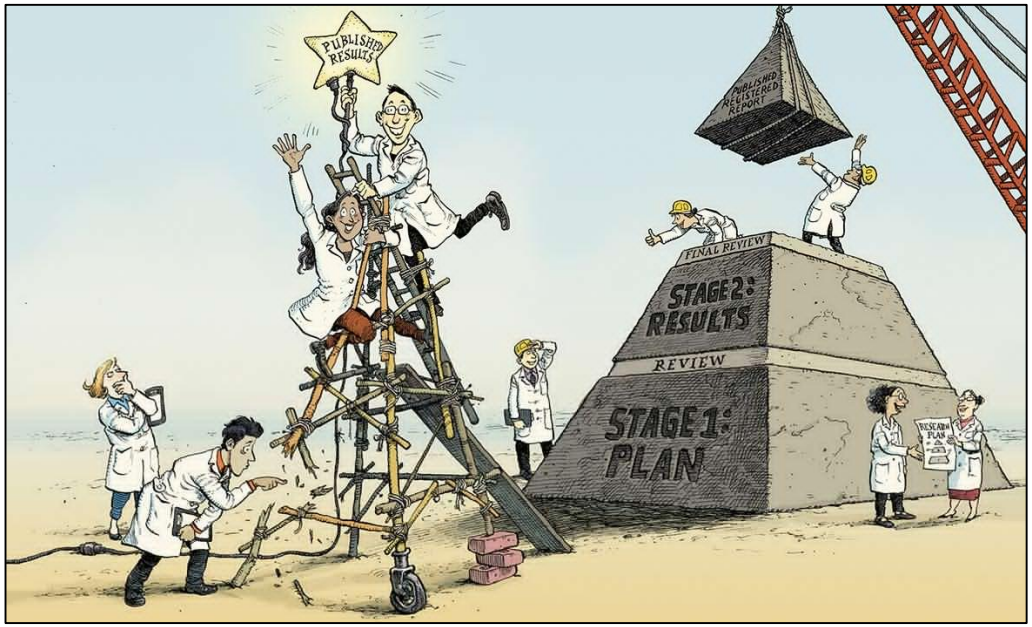
Registered Reports 2.0

Introducing the Peer Community in Registered Reports



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These slides
https://osf.io/3jtqr/

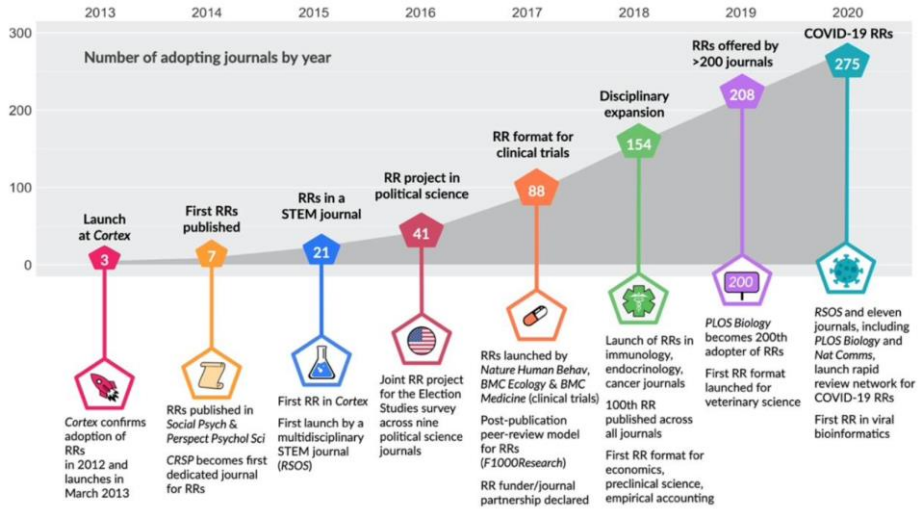
Registered Reports

Reviewers assess
Theory, rationale, rigour, robustness of method

In-principle acceptance

Reviewers assess
Compliance with study protocol and whether conclusions are based on the evidence

Currently adopted by >300 journals



Chambers, C. D., & Tzavella, L. (2021). The past, present, and future of Registered Reports. *Nature Human Behaviour*. https://doi.org/10.31222/osf.io/43298

Early impacts are promising

- Popular with ECRs: ~80% first authored by PhD students or post docs
- ~5-10 times more likely to **disconfirm** hypotheses (60% vs ~12% across fields; Allen & Mehler 2019; 56% vs 4% in psychology; Scheel et al. 2020)
- Higher computational reproducibility than regular articles (Obels et al. 2019)
- Rated higher in quality than regular articles (Soderberg et al., 2021)
- Cited same or more than regular articles (Hummer et al. 2019)

But they aren't perfect. 10 known limitations include:

1. Stage 1 review time
2. Needing to commit to a journal before results are known
3. Not well suited to programmatic research where one Stage 1 protocol could lead to multiple Stage 2 outputs (current model is one S1 → one S2)
4. Inconsistent editorial standards and levels of training/experience
5. Inconsistent transparency of accepted Stage 1 protocols (Hardwicke et al. 2018)
6. Inconsistent policies on open peer review
7. Inconsistent policies on open access and availability of Stage 2 articles
8. Unclear policies on applicability of RRs for analysis of existing data
9. Limited capability to work with funders on RR research grant models due to legal barriers that restrict cooperation between public funders and corporate publishers
10. Power resides with journals and (largely corporate) publishers to decide which RRs enter the peer-reviewed scientific record, not with authors and the broader scientific community

Peer Community In Registered Reports

Free and transparent pre- and post-study recommendations across research fields

Web: https://rr.peercommunityin.org/
Twitter: @PCI_RegReports
Email: contact@rr.peercommunityin.org

Founders: Corina Logan, Emily Sena, Zoltan Dienes, Chris Chambers, Ben Pujol

- Peer Community in Registered Reports (PCI RR) is a free, non-commercial platform dedicated to reviewing and recommending Registered Reports *preprints* across STEM, medicine, the social sciences and humanities

- Once a submission is recommended by PCI RR following peer review, the revised manuscript is posted at the preprint server where the preprint is hosted, and the peer reviews and recommendation are published at the PCI RR website

- Authors then have the option to publish the preprint in a traditional journal, including a growing list of PCI RR-friendly journals that have committed to accepting PCI RR recommendations *without further peer review*

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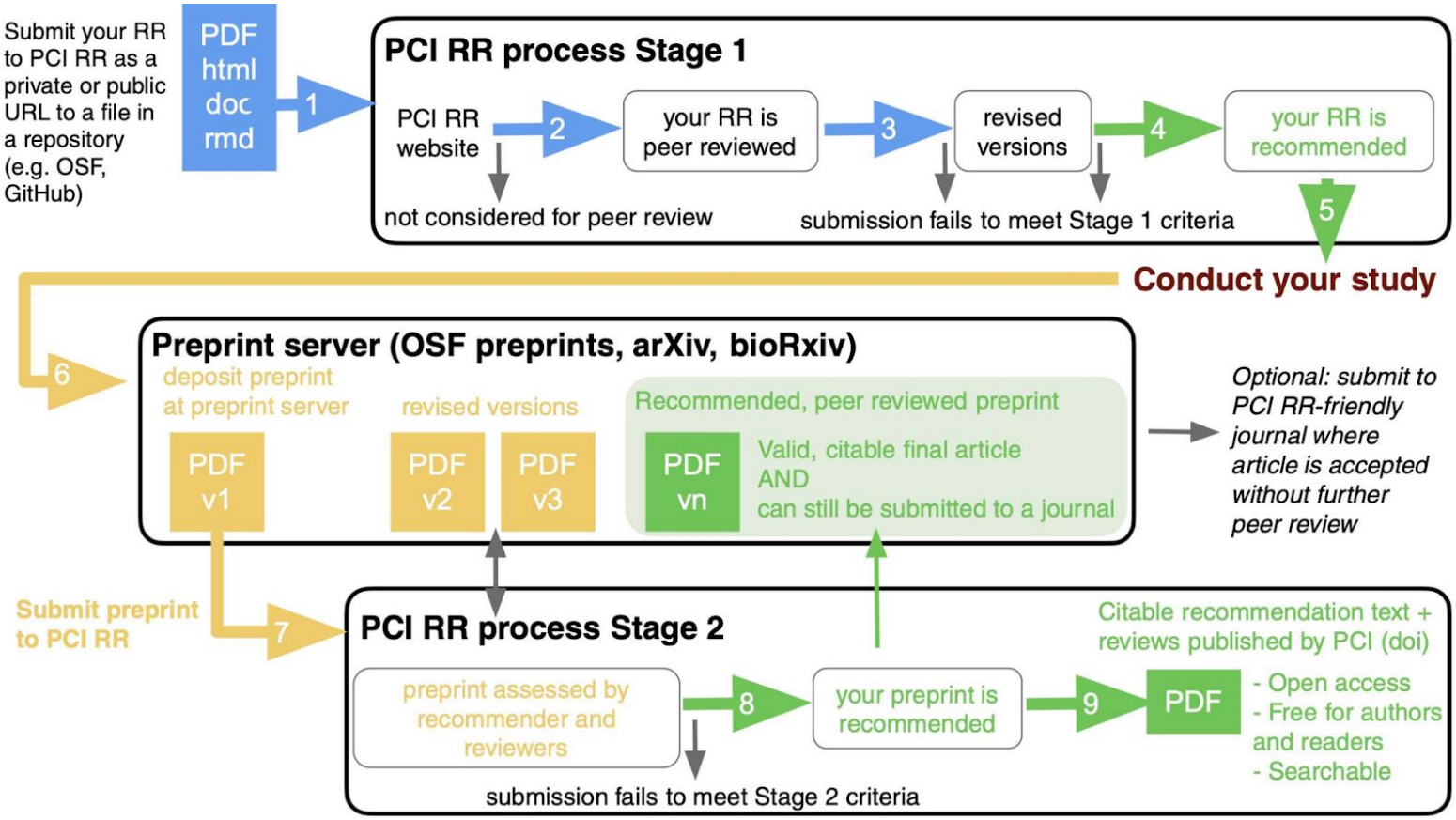
How it works



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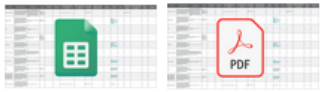
List of PCI RR-friendly journals

There are currently **22** PCI RR-friendly journals. The current list can be viewed in spreadsheet and PDF format, and details of each journal's commitment and eligibility requirements are also listed below.

For open access journals, authors are strongly advised to check the journal website for latest information concerning article processing charges.



Journals interested in becoming PCI RR-friendly can learn more about the requirements here and can apply to join here.

- **Addiction Research & Theory**
- **Advances in Cognitive Psychology**
- **BMJ Open Science**
- **Brain and Neuroscience Advances**
- **Cambridge Educational Research e-Journal**
- **Cortex**
- **Experimental Psychology**
- **F1000Research**
- **Infant and Child Development**
- **Journal for Reproducibility in Neuroscience**
- **Journal of Cognition**
- **Meta-Psychology**
- **NeuroImage: Reports**
- **PeerJ**
- **PeerJ Computer Science**
- **PeerJ Physical Chemistry**
- **PeerJ Organic Chemistry**
- **PeerJ Inorganic Chemistry**
- **PeerJ Analytical Chemistry**
- **PeerJ Materials Science**
- **Royal Society Open Science**
- **Swiss Psychology Open**

List of PCI RR-interested journals

Where authors seek to maximise the chances of their manuscript being picked up by a PCI RR-interested journal, we recommend they consult the journal's RR policy to determine what additional conditions may need to be met, over and above the PCI RR review criteria. For instance, some PCI RR-interested journals set a more stringent requirement on pre-planned evidence strength (including prospective statistical power or Bayes factors) while others may only consider RRs where data do not exist prior to in-principle acceptance (in line with Level 6 of the PCI RR bias-control taxonomy).

The list of PCI RR-interested outlets below includes a link to each journal's RR author guidelines.

- **Affective Science** [RR author guidelines TBC]
- **Biolinguistics** [RR author guidelines]
- **Collabra: Psychology** [RR author guidelines]
- **Nature Human Behaviour** [RR author guidelines]
- **PLOS Biology** [RR author guidelines]

PCI RR-friendly journals commit to accepting PCI RR recommendations without further peer review. **You, the author, decides which journal gets to publish your Stage 2 RR**

https://rr.peercommunityin.org/about/pci_rr_friendly_journals

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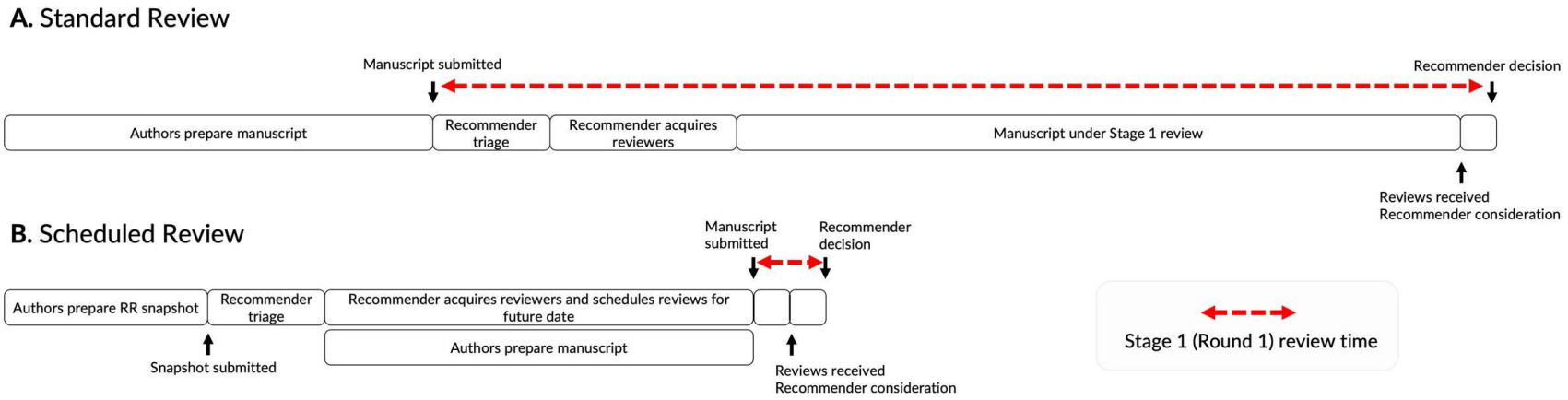
Other unique features

Programmatic RRs: One Stage 1 manuscript leading to multiple Stage 2 outputs
See: https://rr.peercommunityin.org/help/guide_for_authors#h_52492857233251613309610581

Scheduled Review: Following submission of a one-page Stage 1 "snapshot", peer review is scheduled in advance so that the Stage 1 review time following full manuscript submission = days rather than weeks
See: https://rr.peercommunityin.org/help/guide_for_authors#h_619982436435516133096724 90



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RR ‘Snapshot’ used in the Scheduled Review track

Peer Community in Registered Reports: Stage 1 Snapshot

Briefly summarise the study protocol using this template (1 page max, A4). Please use Arial font size 10, single-spaced, with a 0.5 inch (1.27cm) margin. All italicised text should be deleted from the submitted template. All bold text, including the header above, must be included.

1. **Provisional title.** *Choose a title for the submission. If a full Stage 1 submission is invited, this can be updated.*

2. **Authors and affiliations.** *List all submitting authors and affiliations. If a full Stage 1 submission is invited, this can be changed. For submissions involving a large group of authors, and where listing them all would use too much of the space allocation, it is acceptable to list only the corresponding author and their affiliation, and link to a google doc or other accessible file containing the full list of contributors.*

3. **Field and keywords.** *State the general field of research and any specific keywords that identify the sub-field and the research topic.*

4. **Research question(s) and/or theory.** *Briefly summarise the research question(s) that will be addressed, and where relevant, the theoretical basis of the proposal. For a Programmatic RR, anticipate which questions will produce which Stage 2 outputs.*

5. **Hypotheses (where applicable).** *Where relevant, state any predictions of the study. These can be stated in less precise terms than is required for a full Stage 1 submission, for instance, by referring to specific concepts rather than variables or measurements. If a full Stage 1 submission is invited, this will be updated and refined.*

6. **Study design and methods.** *Summarise in broad terms the study design, including (as applicable), key conditions and controls, data acquisition procedures, and variables.*

7. **Key analyses that will test the hypotheses and/or answer the research question(s).** *Summarise in broad terms how the data will be analysed. A detailed analysis plan is not required, but the clearer the link between the research question, hypotheses (as applicable), and analysis plans, the more likely the submission is to pass triage.*

8. **Conclusions that will be drawn given different results.** *Anticipate a range of possible/plausible results, what they would mean for theory or applications, and how they would answer the research question(s). For example, how would a particular hypothesis being supported vs. unsupported influence theory?*

9. **Key references.** *These must be numbered and include DOI URLS. To save space, the reference list can be presented succinctly in a single body of text using the following style: 1. Surname et al. (Year), https://doi.org/DOI. 2. Surname et al. (Year), https://doi.org/DOI. etc.*

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PCI RR recommenders (editors) take a training and pass a test

PCI RR Recommender's Entrance Test

Welcome to the PCI RR Recommender's Entrance Test. This test is designed to assess basic knowledge of the RR format, the core policies of PCI RR, and best approaches for tackling challenging scenarios.

The test includes 66 questions over 5 sections. Please allow 2 hours to complete the test.

All information that prospective recommenders need to pass this test is contained in the guidance and the links at the top of each section. A pass grade is 63 out of 66 points (95% correct) and the test can be taken as many times as necessary.

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QUESTION 2: PCI RR recommender test

Which of the following is NOT one of the Stage 1 criteria for a Registered Report evaluation at PCI RR?

- ○ The scientific validity of the research question(s)
- ○ The importance of the research question(s)
- ○ The soundness and feasibility of the methodology and analysis pipeline

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QUESTION 2: PCI RR recommender test

Which of the following is NOT one of the Stage 1 criteria for a Registered Report evaluation at PCI RR?

- The scientific validity of the research question(s)
- The importance of the research question(s)
- The soundness and feasibility of the methodology and analysis pipeline

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QUESTION 3: PCI RR recommender test

Suppose PCI RR receives a Stage 1 manuscript proposing a study in which the data that will be used to answer the research question have been accessed and partially observed by the authors. The authors also certify that they have NOT yet sufficiently observed the key variables within the data to be able to answer the question. Is this submission likely to be eligible for consideration?

- ○ Yes, provided additional steps are taken to control risk of bias
- ○ No, the risk of bias in this scenario is too high for PCI RR

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Suppose PCI RR receives a Stage 1 manuscript proposing a stu
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eligible for consideration?

- Yes, provided additional steps are taken to control risk of bias
- No, the risk of bias in this scenario is too high for PCI RR

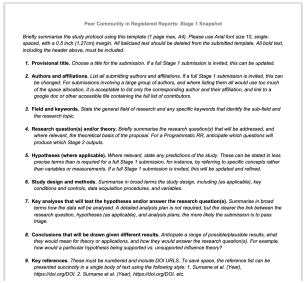
A levels-based system for bias control enables the RR mechanism to "bend" to meet the needs of researchers

If authors have an inflexible data collection start date and have not received in principle acceptance before this date, they may begin collecting data but must adjust the bias-control level accordingly (e.g., if the initial submission was Level 6, it would then drop to Level 3, 2, or 1)

Level	Data already exist or will exist prior to IPA	Data are accessible to the authors	Data have been accessed by the authors	At least some data have already been observed by the authors	Key variables in the data have been observed by the authors	Authors have already analysed key variables in the data	Risk of bias due to prior data observation	Multi-disciplinary inclusivity
6	*Level 6 description:* No part of the data or evidence that will be used to answer the research question yet exists and no part will be generated until after IPA (so-called "primary RR")							
	✗	✗	✗	✗	✗	✗	Zero	Very low
5	*Level 5 description:* ALL of the data or evidence that will be used to answer the research question already exist but are currently inaccessible to the authors and thus unobservable prior to IPA (e.g. held by gatekeeper)							
	✓	✗	✗	✗	✗	✗	Very low	Very low
4	*Level 4 description:* At least some of the data/evidence that will be used to answer the research question already exists AND is accessible in principle to the authors (e.g. residing in a public database or with a colleague) BUT the authors certify that they have not yet accessed any part of that data/evidence							
	✓	✓	✗	✗	✗	✗	Low	Low
3	*Level 3 description:* At least some data/evidence that will be used to the answer the research question has been previously accessed by the authors (e.g. downloaded or otherwise received), but the authors certify that they have not yet observed ANY part of the data/evidence							
	✓	✓	✓	✗	✗	✗	Moderate	Moderate
2	*Level 2 description:* At least some data/evidence that will be used to answer the research question has been accessed and partially observed by the authors, but the authors certify that they have not yet sufficiently observed the key variables within the data to be able to answer the research question AND they have taken additional steps to maximise bias control and rigour (e.g. conservative statistical threshold; recruitment of a blinded analyst; robustness testing, multiverse/specification analysis, or other approach)							
	✓	✓	✓	✓	✗	✗	High – additional steps required to control bias	High
1	*Level 1 description:* At least some of the data/evidence that will be used to the answer the research question has been accessed and the authors HAVE sufficiently observed the key variables to be able to answer the research question, but the authors certify that they have not yet performed ANY of their preregistered analyses, and, in addition, they have taken stringent steps to reduce risk of bias. Such measures will be similar to the countermeasures required for Level 2 but even more intensive, including an extremely conservative statistical threshold, recruitment of a blinded analyst, comprehensive robustness testing, the use of a broad multiverse/specification analysis, or other approaches for controlling risk of bias.							
	✓	✓	✓	✓	✓	✗	Very high – stringent steps required to control bias	Very high

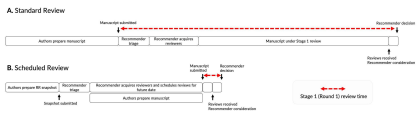
Example: post doc or PhD students wanting to complete a series of independent RRs

1. Design RRs and complete Stage 1 Snapshot



2. Post Snapshot on the OSF, either publicly or under private embargo

3. Submit the snapshot URL to PCI RR via the "Scheduled Review" track



4. Select future date for review (e.g. 6 weeks head), and once passed the recommender triage process, set to work writing a full "programmatic RR"

5. While designing & writing the Stage 1 RR, consult the list of PCI RR-friendly journals to ensure that you meet any additional requirements for whatever target journals you have in mind (e.g. concerning evidence strength, bias control, etc)

6. Submit your full Stage 1 manuscript by the due date. Because review is planned in advance, reviews & an interim recommendation can be expected in about a week

7. If, likely following revision, you gain in-principle acceptance (IPA), PCI RR
will tell you which journals are eligible outlets & will auto-endorse the IPA decision. You can also ask us for a provisional steer prior to IPA. PCI RR makes this decision.

8. With IPA in hand, you now have an approved programme of multiple RRs accepted in advance which you can eventually choose to publish in any eligible PCI RR-friendly journal (or you can submit anywhere else as you see fit). Each Stage 2 RR can go in a different journal.

9. Do research and publish each Stage 2 output as you progress without further peer review, in journal of your choice

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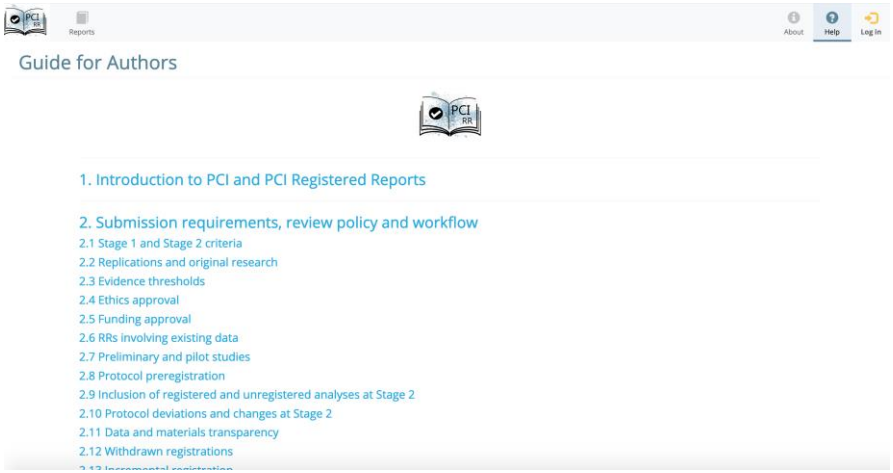
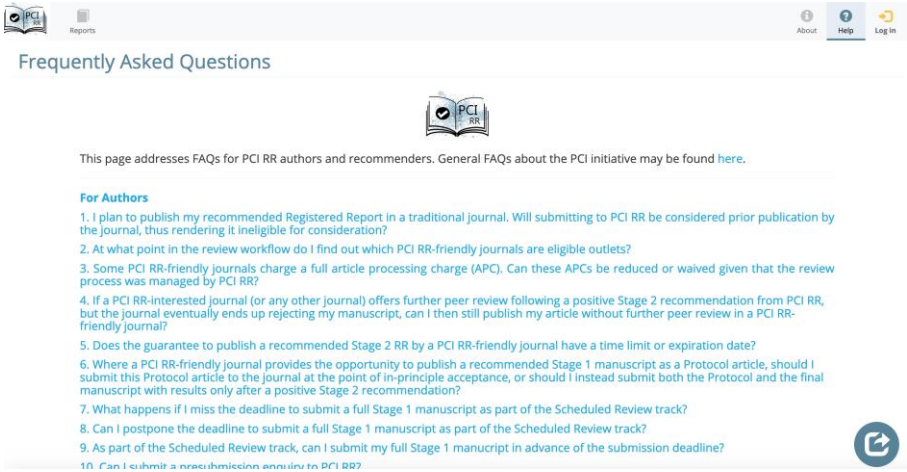
What are the benefits of PCI RR?	Regular non-RR article at a traditional journal	RR at a traditional journal	RR at PCI RR
Offers **pre-study peer review**	✗	✓	✓
Offers **in-principle acceptance** before results are known	✗	✓	✓
Offers **programmatic RRs**: one Stage 1 RR leading to multiple Stage 2 manuscripts	✗	✗	✓
Offers **scheduled review** to accelerate the Stage 1 review process	✗	✗	✓
Requires handling editor (or recommender) to have **proven their knowledge** of RRs by passing an entrance test, which serves as useful training of a rarely taught skill	✗	✗	✓
Peer review undertaken **independently** of any journal	✗	✗	✓
Author has the **power to decide** their destination journal (if any)	✗	Very rare	✓
No need for author to decide on destination journal until after Stage 2 acceptance by PCI RR	✗	Very rare	✓
Peer reviews for accepted manuscripts **published online and free to read**	✗	Very rare	✓
Free for authors and readers	Depends on journal	Very rare	✓

More information on PCI RR

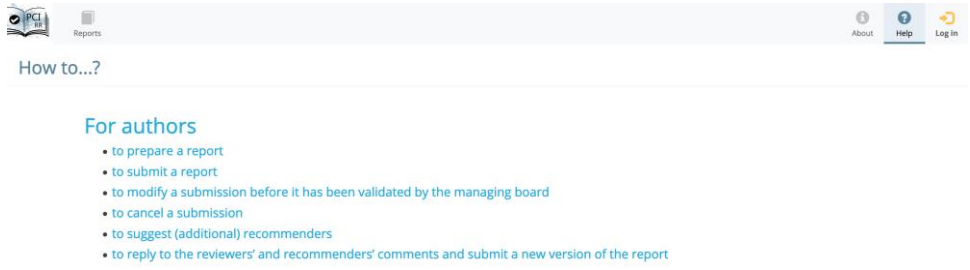
https://rr.peercommunityin.org/help/guide_for_authors



https://rr.peercommunityin.org/help/faq



https://rr.peercommunityin.org/help/help_practical



https://rr.peercommunityin.org/about/about

These slides: https://osf.io/3jtqr/

For more info: chambersc1@cardiff.ac.uk