Open Science and Signals of Trust

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Open Science

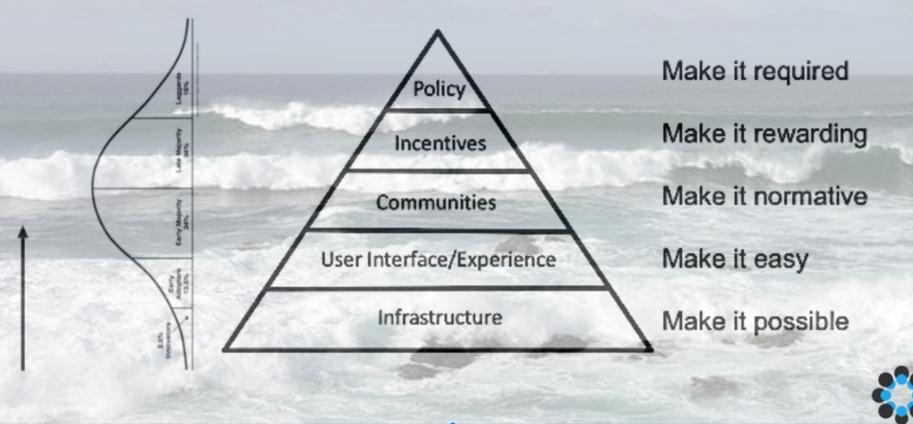
Transparency and openness across the research lifecycle

Trust

Verification, review, and evaluation



Open Science Adoption and Culture Change



Incentives for individual success are focused on getting it published, not on getting it right.

Nosek, Spies, & Motyl, 2012



The End.

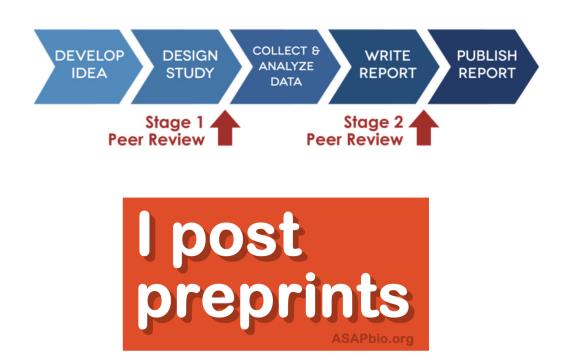
Reproducibility

Start with the end in mind Show your work, Share your work ALL the work!



Scholarly publication and open science

New models to advance rigor, transparency, and rapid dissemination







Publication models that advance openness and rigor

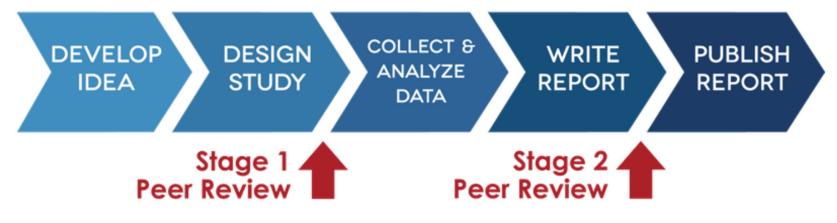
Registered Reports

Improve research quality

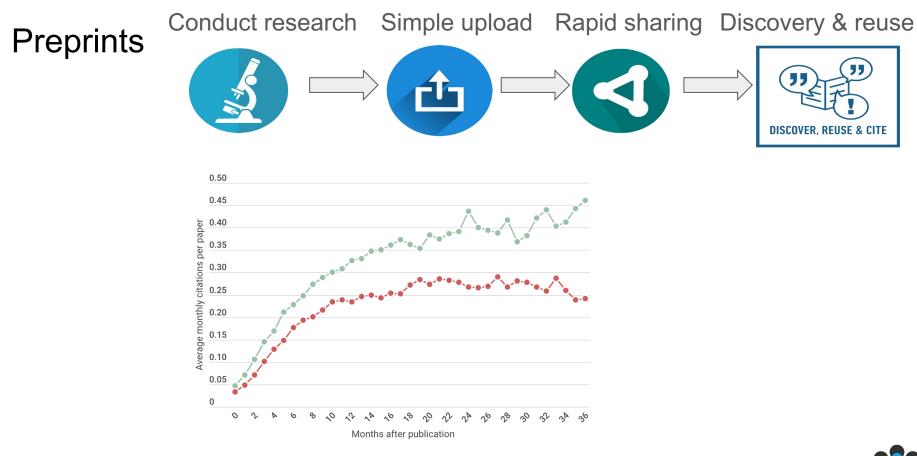
•Peer review prior to data collection

•Over 200 journals use RR format

•Null findings get published



https://www.cos.io/initiatives/registered-reports



Journal articles with preprints 🛑 Journal articles without preprints

See the full preprint on biorXiv

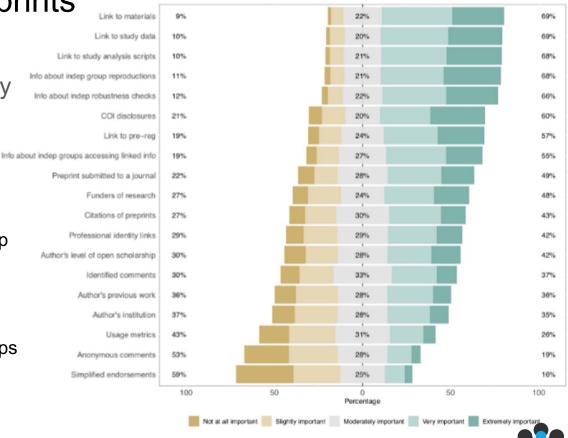


Signals of Trust on Preprints

Collaboratively developed Survey of community (n=3755)

Extremely important to have this information:

- Link to materials
- Link to study data
- Link to analysis scripts
- Information about independent group reproductions
- Information about independent robustness checks
- Conflict of interest disclosures
- Link to pre-registration
- Information about independent groups accessing linked information



Materials and survey data open on OSF: <u>https://osf.io/6kz2j/</u>

When assessing the credibility of a preprint how important would it be to have each of the following pieces of information?

Author assertions toward badges to signal trust

