

Open science at PLOS:

Continuous progress at scale

INTRODUCTION:

Much metascience around open science focuses on surveyed attitudes and self-reported future behaviors. In this poster we show examples of open science policies and practices, and their scale of adoption, at PLOS, and we hope that future research can also be based data such as these, to help predict future behaviors and guide appropriate policies.

METHODS

1. March 2014: mandatory open Data Policy
2. Jan 2015: promotion of Research Resource IDs (RRIDs)
3. Jan 2016, *PLOS Biology*: introduction of Meta-Research article type
4. July 2016: introduction of CRediT taxonomy
5. Dec 2016: ORCIDs required from all corresponding authors
6. April 2017: collaboration with [protocols.io](https://www.protocols.io)
7. May 2018: bioRxiv preprint submission partnership
8. May 2019: introduction of published peer review
9. June 2019, *PLOS Biology*: trial of minimal reporting standards checklist for Materials, Design, Analysis, and Reporting (MDAR)
10. June 2019: integration of ORCID for Reviewers enabling credit for peer review
11. May, July 2019, *PLOS ONE* & *PLOS Biology*: recommendation for deposition and reporting of reagents; new blot and gel data requirements
12. 2019/20, *PLOS Biology*: introduction of new article types
13. 2019/20: requirement for code deposits in repositories
14. 2020, *PLOS ONE* & *PLOS Biology*: implementation of Registered Reports (*PLOS ONE* rolled out Registered Reports in Sep 2017 in conjunction with Children's Tumor Foundation)

RESULTS

All data from July 24, 2019

255,845 OA articles published (since *PLOS Biology* 2003)

- 118,998 Data Availability Statements [Methods: 1]
- 170 PLOS articles citing RRIDs [2]
- c.70,000 articles with CRediT Taxonomies [4]
- c.57,000 articles with mandatory ORCIDs for corresponding authors [5]
- 488 protocols published at [protocols.io](https://www.protocols.io) associated with PLOS articles [6]
- 3,257 bioRxiv preprints via integrated partnership [7]
- 13 Papers opted in to Published Peer Review, 4 already published [8]
- 421 (~35%) eligible reviewers claimed credit for their peer reviews via ORCID [10]
- 8 Registered Reports submitted, 5 with "In Principle Acceptance" (with more Registered Reports to come as program expands beyond funder partnerships, in both *PLOS ONE* and *PLOS Biology*) [14]

Open Science practices are happening **at scale** at PLOS, via policies, experiments, and partnerships with the research community. We have helped to **normalize** these practices, and will **continue** to do so.

SELECTED RESULTS

255,845 Open Access articles published

118,998 Data Availability Statements

c.70,000 articles published with CRediT Taxonomies

488 protocols published at [protocols.io](https://www.protocols.io) associated with PLOS articles

3,257 bioRxiv preprints via integrated partnership

full results to the left

FURTHER READING

All of PLOS is available at...

<https://github.com/PLOS/allofplos>
Mine! Study! Report!

Meta-research Collection at PLOS

<https://collections.plos.org/s/meta-research>

PLOS ONE and *PLOS Biology* blot and gel data policy

<https://journals.plos.org/plosone/s/figures#loc-blot-and-gel-reporting-requirements>

ORCID for Reviewers at PLOS

<https://blogs.plos.org/plos/2019/06/youve-completed-your-review-now-get-credit-with-orcid/>

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Federer LM, Belter CW, Joubert DJ, Livinski A, Lu Y-L, Snyders LN, et al. (2018) *Data sharing in PLOS ONE: An analysis of Data Availability Statements*. PLoS ONE 13(5): e0194768.
<https://doi.org/10.1371/journal.pone.0194768>

Piwowar HA, Day RS, Fridsma DB (2007) *Sharing Detailed Research Data Is Associated with Increased Citation Rate*. PLoS ONE 2(3): e308.
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