



Advocating Open Science at PLOS

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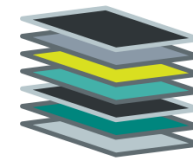
18 September 2017

Who We Are: Public Library of Science

PLOS is a nonprofit publisher and advocacy organization with a mission to accelerate progress in science and medicine by leading a transformation in research communication.

100 PERCENT
OPEN ACCESS

13⁺ YEARS
AS A LEADER IN OPEN ACCESS PUBLISHING



7 PEER-
REVIEWED
JOURNALS



Open Access allows everyone to access research. Open Science allows everyone to do research

All aspects of published research need to be open in order to replicate, reproduce and build upon. Licenses such as CC-BY allow free reuse with attribution.

How publishers can support open science

1. Open Data
2. Detailed, open methods and protocols
3. Early publication, community review (preprints)
4. Author credit based on individual contributions, not journal brands

Open Data

What is the value of open research data?

Data needs to be shared according to the FAIR principles for findable, accessible, interoperable and reusable data. This allows:

- Replication/Validation
- New analysis
- Better interpretation
- Inclusion in meta studies
- Facilitate reproducibility
- Scrutiny post-publication
- Better financial and intellectual return on research investment

PLOS Data Policy

PLOS journals require authors to make **all data underlying the findings** described in their manuscript fully available without restriction, with rare exception.

When submitting a manuscript online, authors must provide a **Data Availability Statement** describing compliance with PLOS's policy.

Since March 2014



At PLOS only, since 2014:

>65,000

Articles published with a data availability statement at PLOS

<0.1%

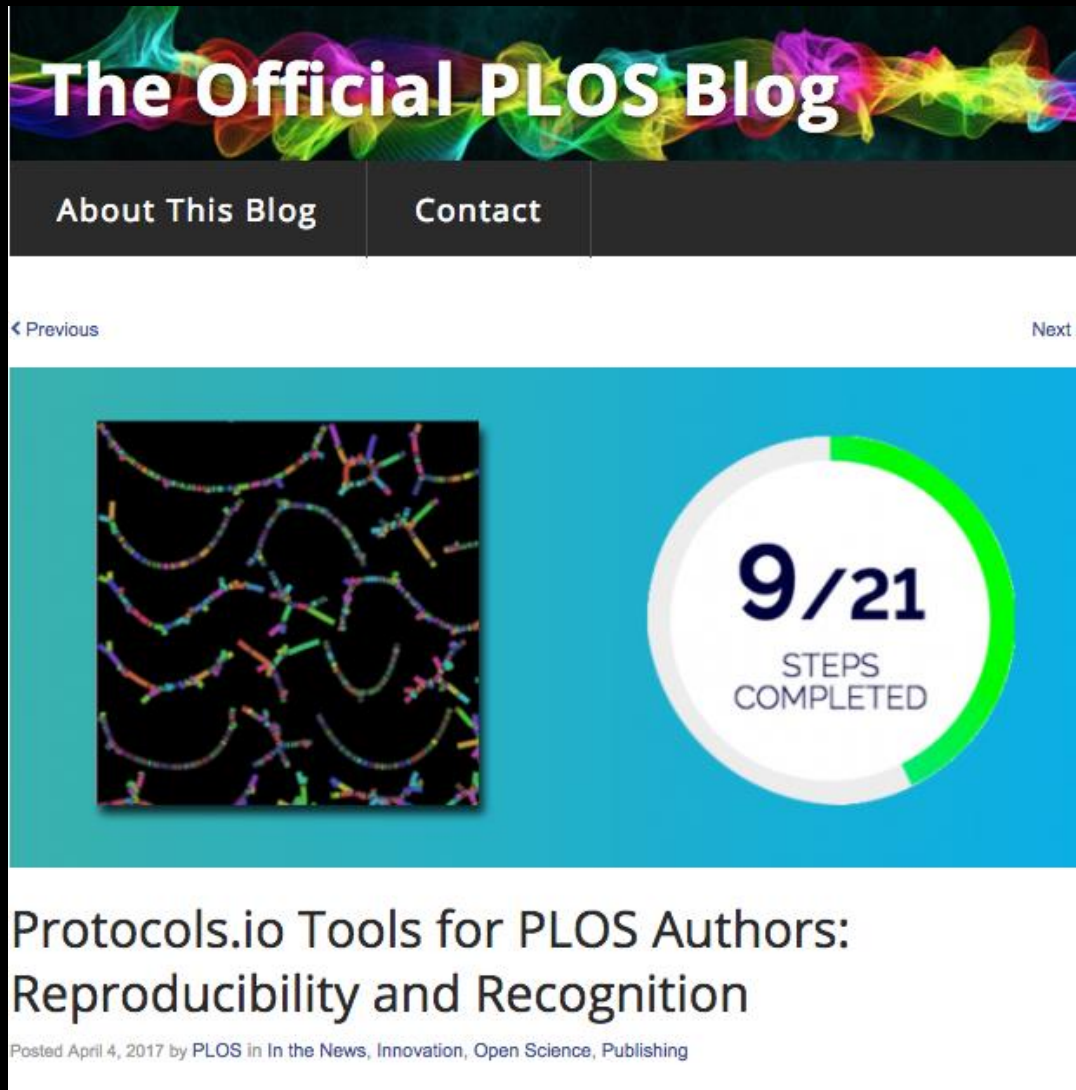
of submissions rejected due to authors' unwillingness or inability to share data

~20%

of submissions use data repositories

Methods/Protocols

PLOS partnership with protocols.io

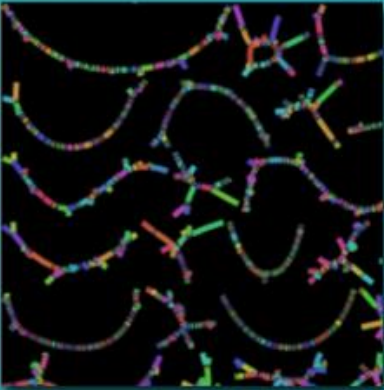


The screenshot shows the top of a PLOS blog page. The header features the text "The Official PLOS Blog" in white on a dark background with colorful, wavy, smoke-like patterns. Below the header is a dark navigation bar with two links: "About This Blog" and "Contact". Underneath the navigation bar is a white bar with navigation links: "← Previous" on the left and "Next →" on the right. The main content area has a light blue background. On the left is a square image showing a complex network of colorful, curved lines. To the right of this image is a large circular progress indicator. The indicator is a white circle with a thick green border. Inside the circle, the text "9/21" is displayed in a large, bold, dark blue font, with "STEPS COMPLETED" in a smaller, dark blue font below it. Below the main content area is a white section containing the article title "Protocols.io Tools for PLOS Authors: Reproducibility and Recognition" in a bold, black font. At the bottom of this section, in a smaller font, is the text "Posted April 4, 2017 by PLOS in In the News, Innovation, Open Science, Publishing".

The Official PLOS Blog

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← Previous Next →



9/21
STEPS
COMPLETED

Protocols.io Tools for PLOS Authors: Reproducibility and Recognition

Posted April 4, 2017 by PLOS in In the News, Innovation, Open Science, Publishing

OPEN ACCESS PEER-REVIEWED

RESEARCH ARTICLE

Commensal bacteria and essential amino acids control food choice behavior and reproduction

Ricardo Leitão-Gonçalves , Zita Carvalho-Santos , Ana Patrícia Francisco , Gabriela Tondolo Fioreze, Margarida Anjos, Célia Baltazar, Ana Paula Elias, Pavel M. Itskov, Matthew D. W. Piper, Carlos Ribeiro 

Published: April 25, 2017 • <https://doi.org/10.1371/journal.pbio.2000862>

Article

Authors

Metrics

Comments

Related Content



Abstract

Author summary

Introduction

Results

Discussion

Materials and methods

Supporting information

Acknowledgments

References

Reader Comments (0)

Media Coverage (11)

Figures

Abstract

Choosing the right nutrients to consume is essential to health and wellbeing across species. However, the factors that influence these decisions are poorly understood. This is particularly

Materials and methods

Methods and protocols for *Drosophila* rearing, media preparations, and microbial manipulations are available as a collection in protocols.io [dx.doi.org/10.17504/protocols.io.hdtb26n](https://doi.org/10.17504/protocols.io.hdtb26n).

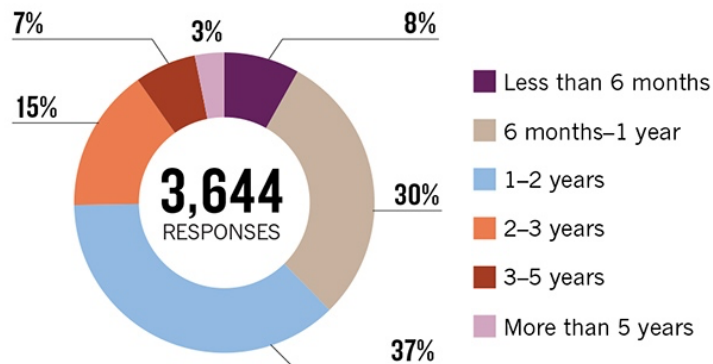
and reproductive output. This demonstrates how the interaction of specific nutrients with the microbiome can shape behavioral decisions and life history traits.

Preprints

Responding to a need

THE WAITING GAME

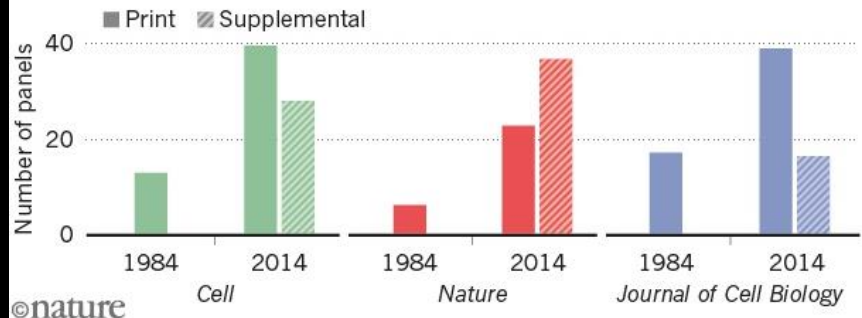
Around 10% of *Nature's* readers say that their longest wait to get a paper published in a journal has been 3 or more years.



Poll question: What is the longest time that you have waited for a research paper to be published?

DATA PER PAPER

An analysis of biology papers published in 3 journals showed that the number of panels in experimental figures jumped between 1984 and 2014, a hint that the amount of data per paper is increasing.



Disruptive potential of preprints

- Decouples the publication of research from other considerations such as importance
- Establishes priority
- Accelerates research communication
- Allows the possibility of credit before journal publication
- Combats publication bias

PLOS allows and encourages the
use of preprint servers

Author Credit

Incentives

The growing number of research output makes it difficult to assess individual contributions to research. Sharing of research contributions as part of Open Science requires mechanisms to credit individual researchers.

A credit framework

Only open standards are can achieve a fair and transparent credit for individual contributions.

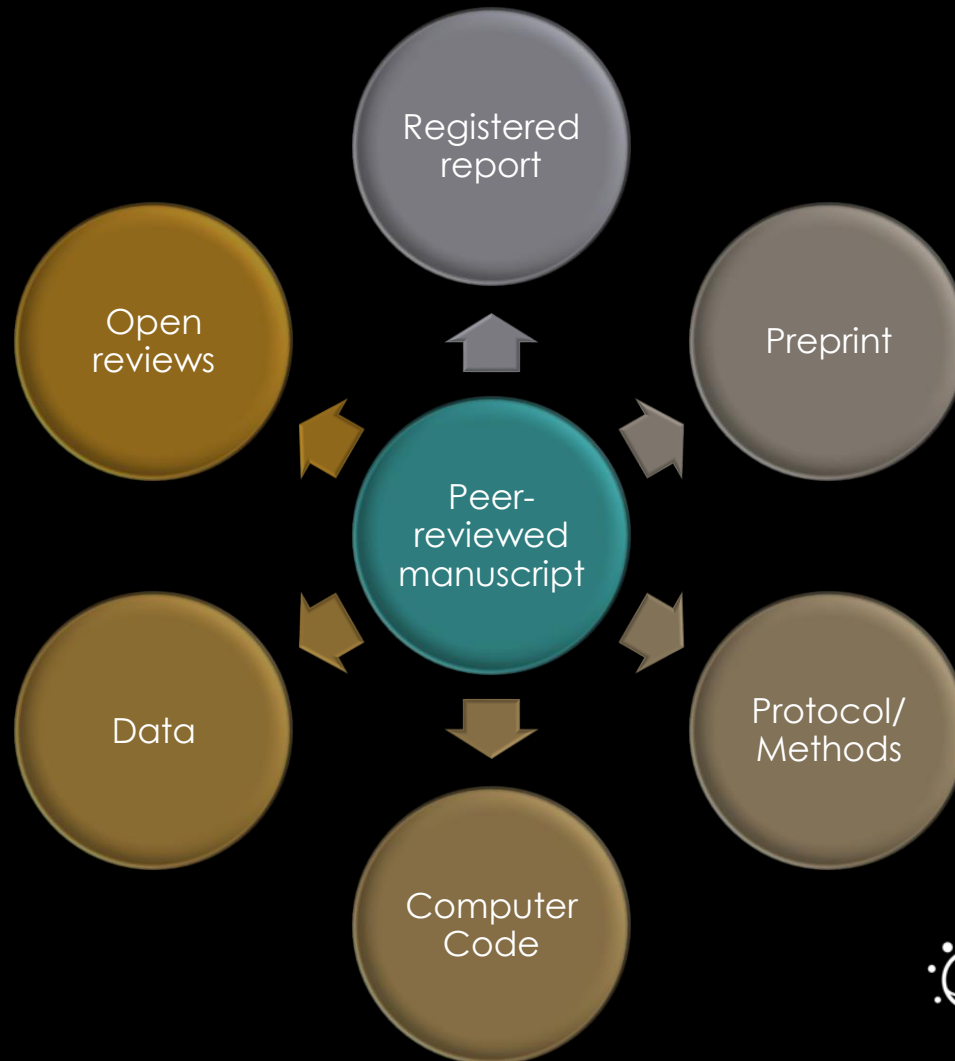


Looking ahead

Moving further towards open science means:

- Ongoing work with early posting (preprints)
- Open review + community review
- Registered reports ensure best practice without bias
- Ongoing work on open data, protocols, code
- Providing article-level credit for all research objects for publishing participants – authors, editors, reviewers, etc.

Open science in publishing





Thank you!