Preprints: a discipline-specific perspective

Richard Sever, PhD
Chief Science & Strategy Officer, openRxiv
Co-Founder, bioRxiv & medRxiv

openRxiv

A non-profit putting scientists in control

openRxiv

Executive Officers

Richard Sever (CSSO)
Tracy Teal (CEO)

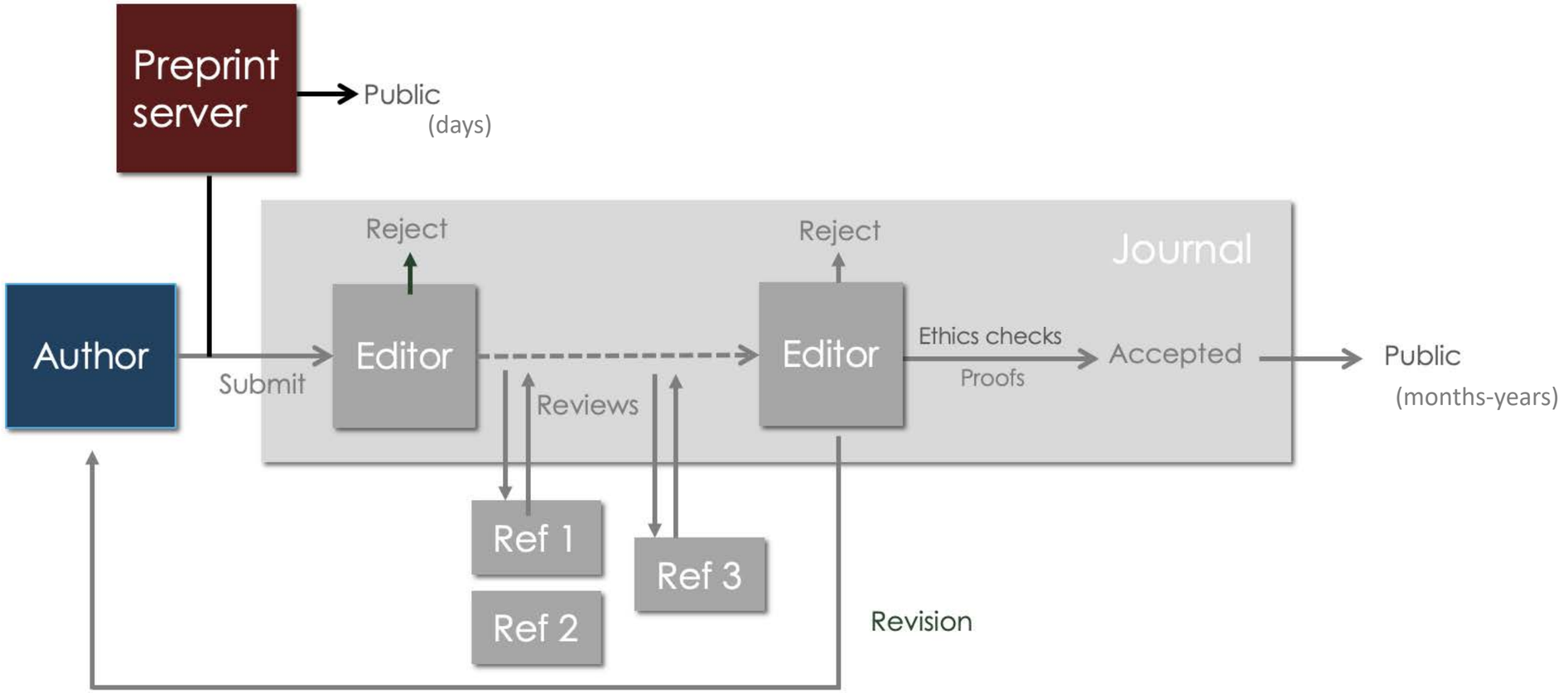
Board of Directors

Scott Fraser (Chair)
Edith Heard
Jeff Huber
Harlan Krumholz
Marcia McNutt
Bruce Stillman
Shirley Tilghman

Scientific & Medical Advisory Board

John Inglis (Chair)
Theo Bloom (Deputy Chair)
Needhi Bhalla
Hopi Hoekstra
Wolfgang Huber
Daniel Macarthur
Javier Mancilla Gallindo
Joseph Ross
Jay Shendure
Shuba Tole
Leslie Vosshall
Fiona Watt

Preprints decouple dissemination & evaluation

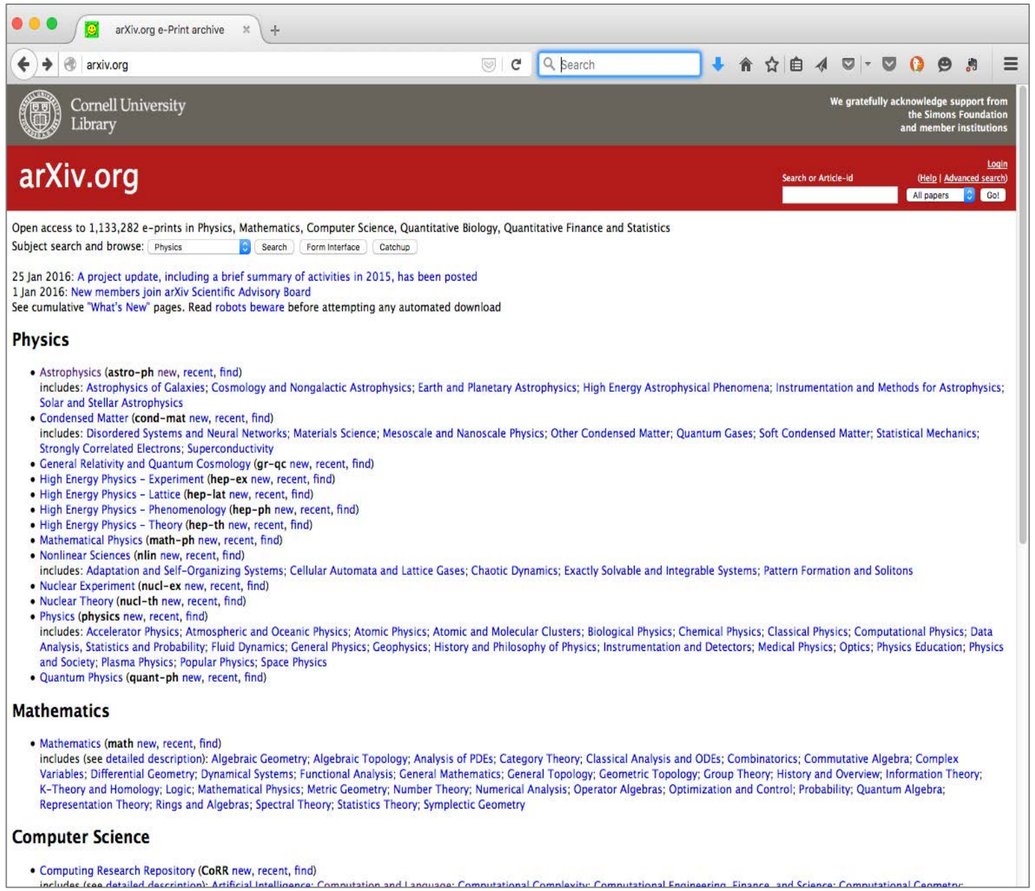


openRxiv

Benefits

- Rapid transmission of results
- Free access
- Pre-publication feedback/discussion
- Immediate availability to grant/hiring/tenure committees
- Decoupling promotes evolution of publishing

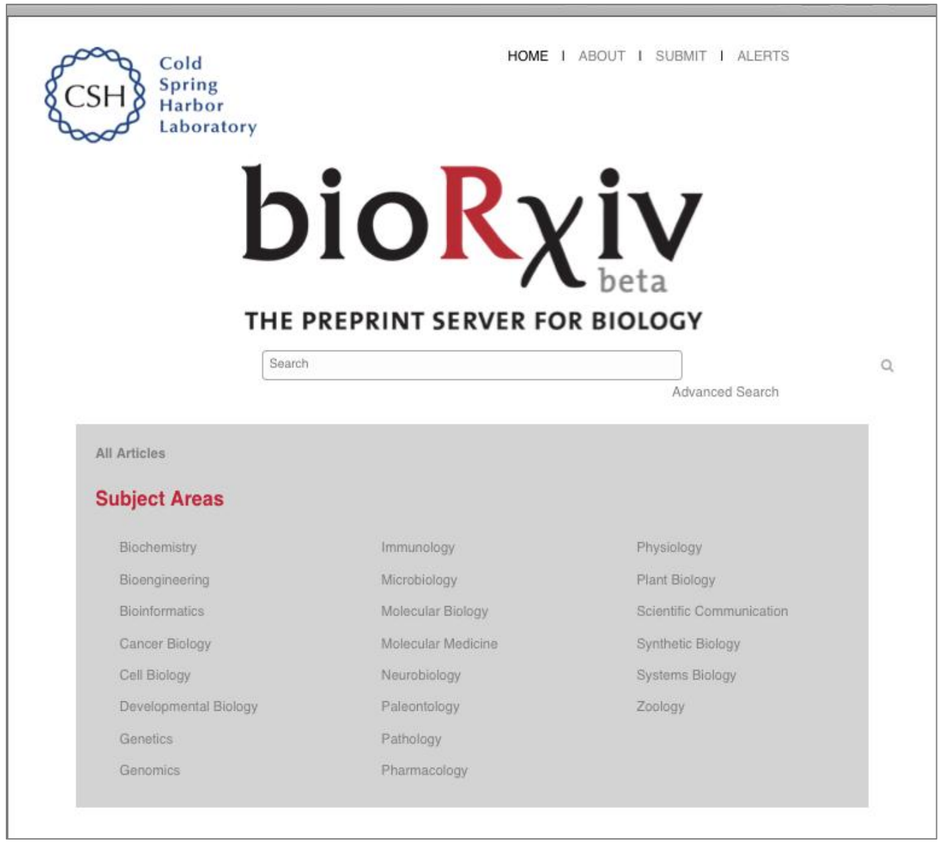
arXiv: the archetype



- arXiv established 1991
- Los Alamos, Cornell, independent
- Free, non-profit
- Physics, math, computational science
- >3 million preprints

openRxiv

Preprint server for biology (2013)



- Launched at Cold Spring Harbor Laboratory
- openRxiv 501(c)(3) est. 2025
- Free, Non-profit
- Screening but no peer review

openRxiv

Emergence of other discipline servers

AgriXiv

MindRxiv

PsyArXiv

SportRxiv

SOCARXIV
open archive of the social sciences

dentRxiv

ChemRxiv™

LawArXiv

engrxiv

Earth ArXiv

NutriXiv

Preprint server for medicine (2019)

- Health sciences
- Free, non-profit
- *BMJ–CSHL–Yale founders*
- ***Enhanced screening***
- openRxiv 501(c)(3) est. 2025

openRxiv

Informed screening

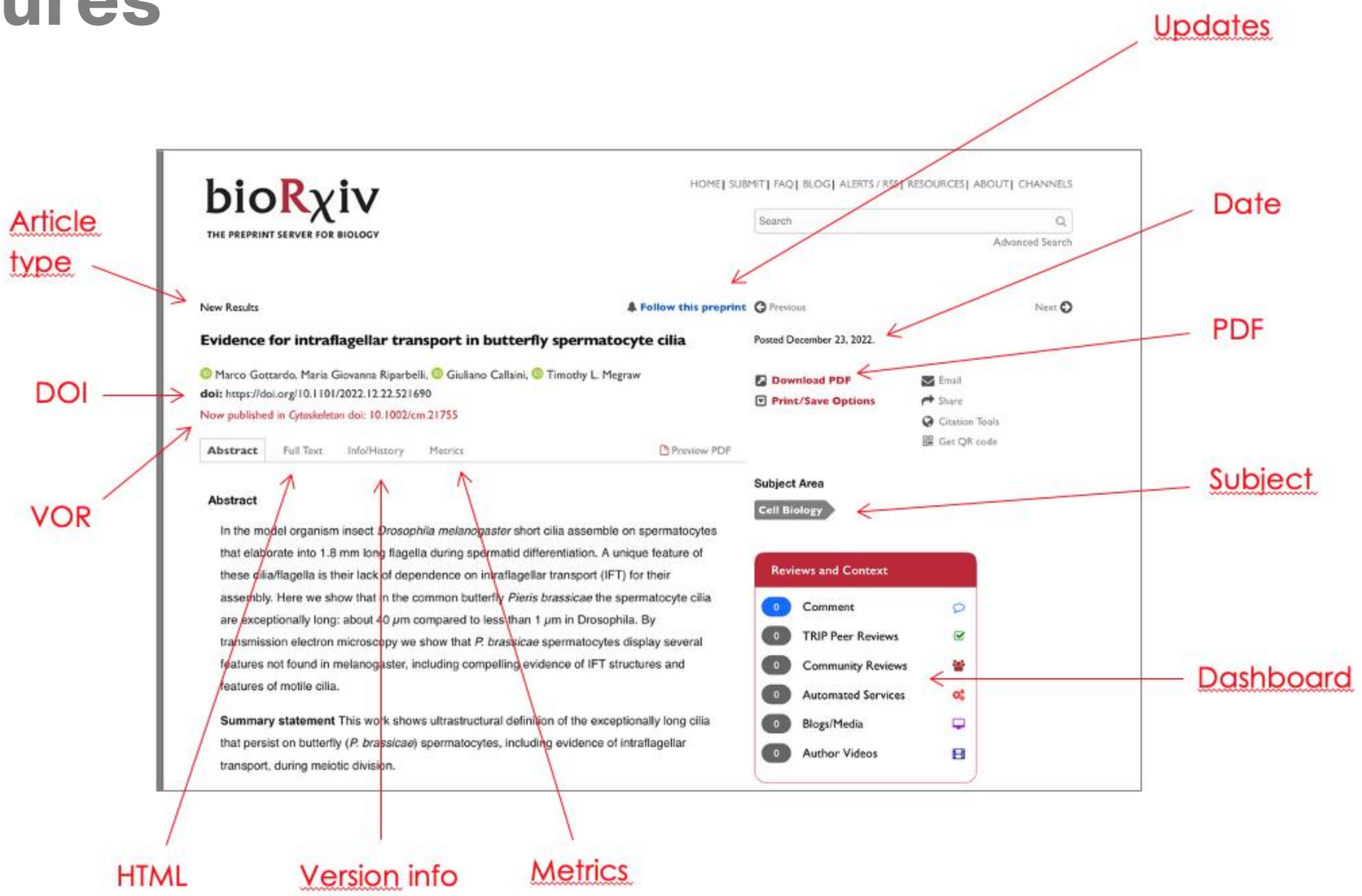
- Is it nonsense
- Is it non-science?
- Is it a research paper?
- Is it noise?
- Is it plagiarized?
- Is it dangerous

‘Do harm considerations’

- Dual-use research
- Vaccine/drug safety
- Disease transmission
- Toxicity/carcinogenicity
- Misinformation

Sever et al. (2021) https://blogs.bmj.com/bmj/2021/04/27/pandemic-preprints-a-duty-of-responsible-stewardship/

Features


Updates
Article type
Date
PDF
DOI
VOR
Subject
Dashboard
HTML
Version info
Metrics
bioRχiv
THE PREPRINT SERVER FOR BIOLOGY
HOME| SUBMIT| FAQ| BLOG| ALERTS / RSS| RESOURCES| ABOUT| CHANNELS
Search
Advanced Search
New Results
Follow this preprint
Previous
Next
Evidence for intraflagellar transport in butterfly spermatocyte cilia
Posted December 23, 2022.
Marco Gottardo, Maria Giovanna Riparbelli, Giuliano Callaini, Timothy L. Megraw
doi: https://doi.org/10.1101/2022.12.22.521690
Now published in Cytoskeleton doi: 10.1002/cm.21755
Download PDF
Print/Save Options
Email
Share
Citation Tools
Get QR code
Abstract
Full Text
Info/History
Metrics
Preview PDF
Subject Area
Cell Biology
Abstract
In the model organism insect Drosophila melanogaster short cilia assemble on spermatocytes that elaborate into 1.8 mm long flagella during spermatid differentiation. A unique feature of these cilia/flagella is their lack of dependence on intraflagellar transport (IFT) for their assembly. Here we show that in the common butterfly Pieris brassicae the spermatocyte cilia are exceptionally long: about 40 μm compared to less than 1 μm in Drosophila. By transmission electron microscopy we show that P. brassicae spermatocytes display several features not found in melanogaster, including compelling evidence of IFT structures and features of motile cilia.
Summary statement This work shows ultrastructural definition of the exceptionally long cilia that persist on butterfly (P. brassicae) spermatocytes, including evidence of intraflagellar transport, during meiotic division.
Reviews and Context
0 Comment
0 TRIP Peer Reviews
0 Community Reviews
0 Automated Services
0 Blogs/Media
0 Author Videos

bioRxiv & medRxiv progress

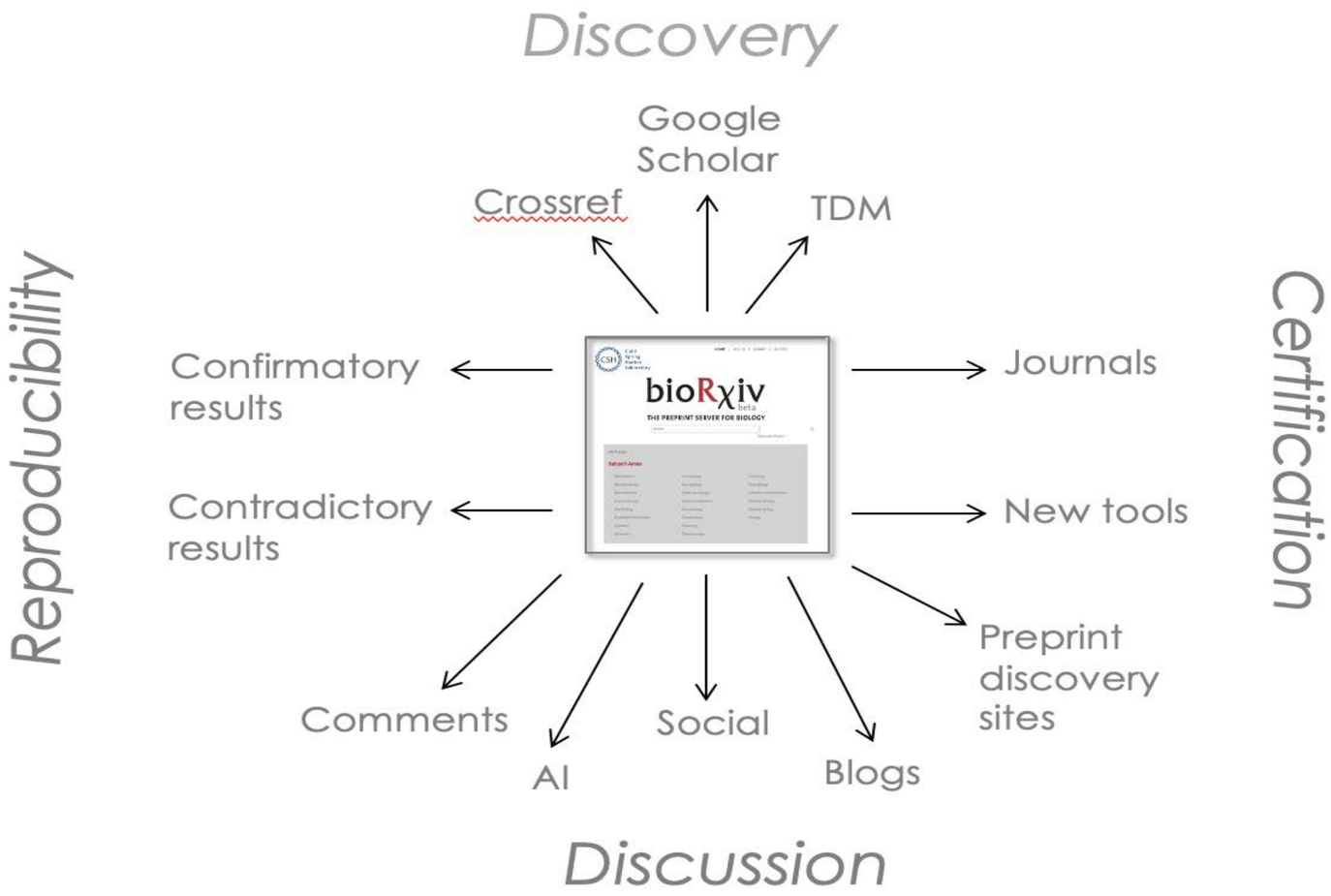
- >440K preprints (bioRxiv + medRxiv)
- ~26% revised
- ~10M views/month (bioRxiv + medRxiv)
- >80% of papers published in journals

Benefits not hypothetical

- >30,000 COVID papers
- Early epidemiological observations
- Structural and molecular biology
- RECOVERY trial (dexamethasone, etc.)
- Viral variants

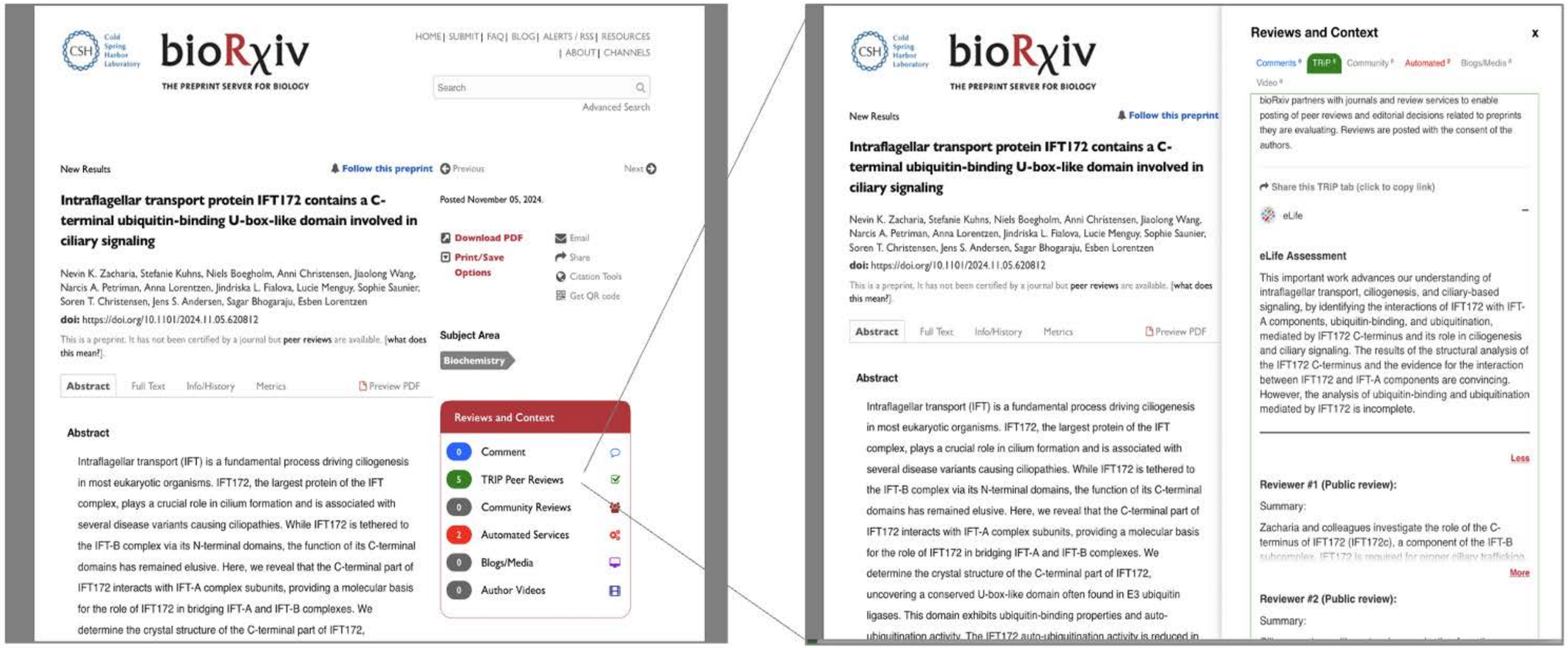
medRxiv user: *“There are people alive today who would not otherwise have been, thanks to preprints”*

A hub


Discovery
Google Scholar
Crossref
TDM
Reproducibility
Certification
Confirmatory results
Contradictory results
bioRχiv
THE PREPRINT SERVER FOR BIOLOGY
Journals
New tools
Preprint discovery sites
Comments
AI
Social
Blogs
Discussion

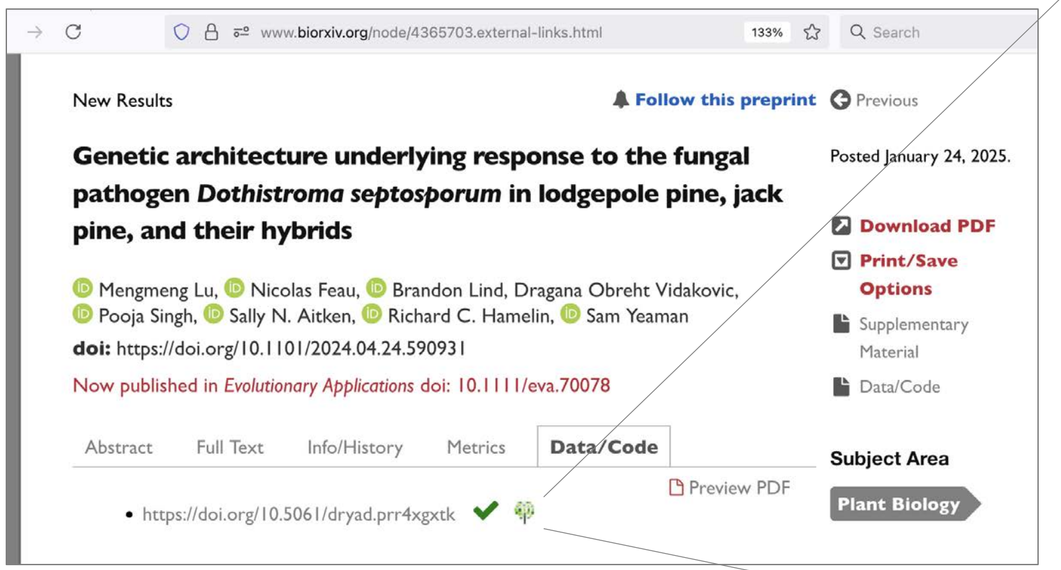
Decoupling promotes innovation

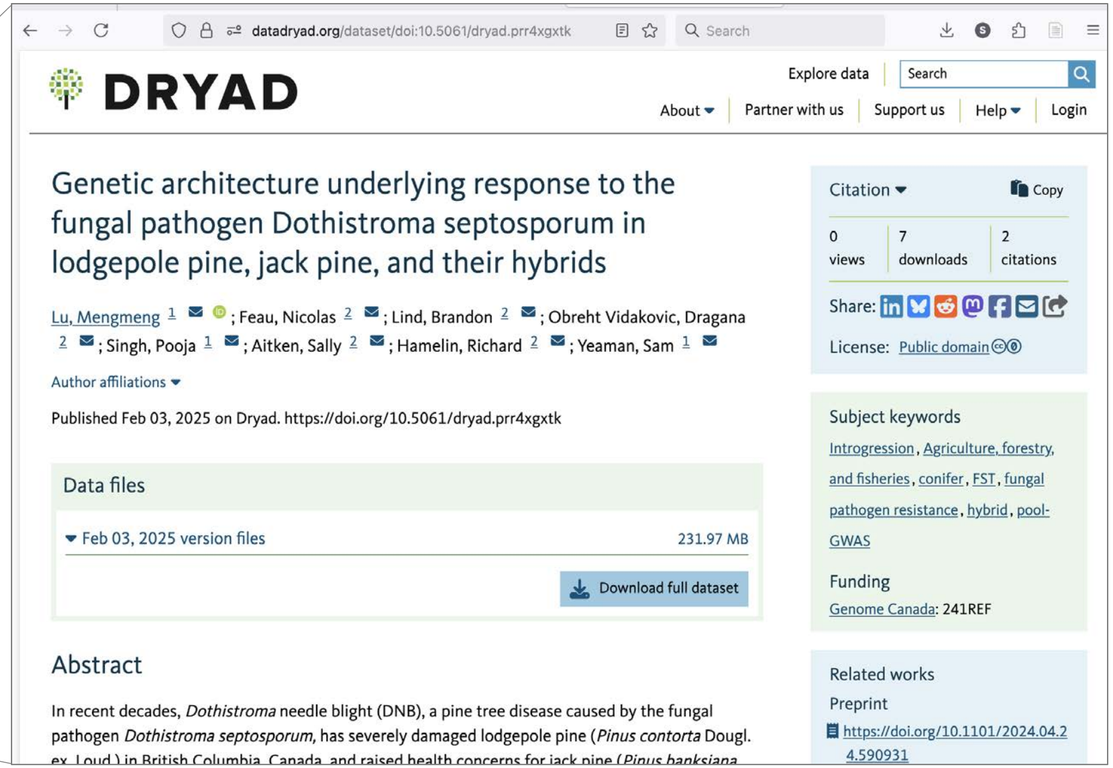
Linking the ecosystem: reviews



openRxiv

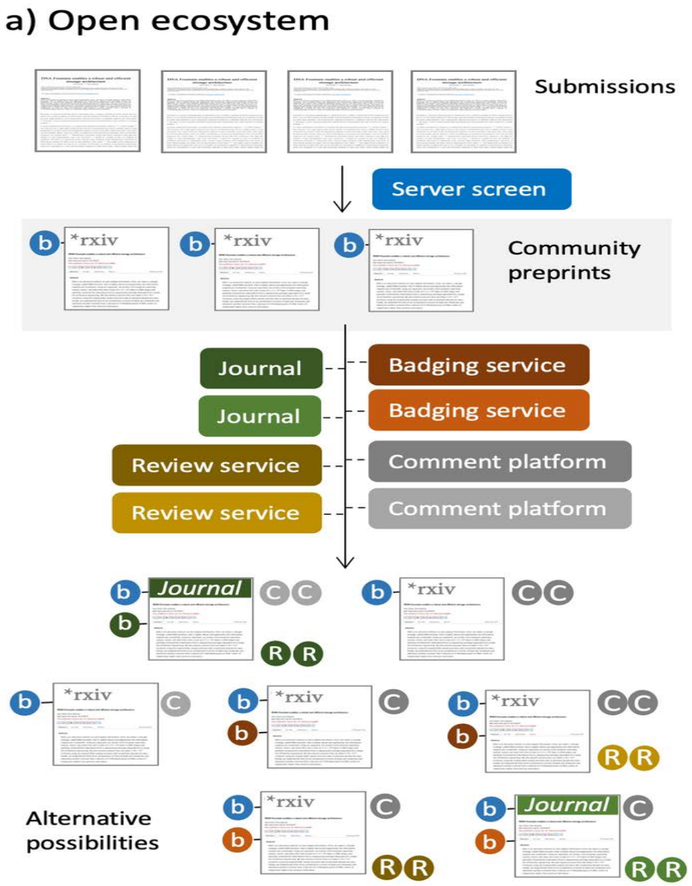
Linking the ecosystem: data





openRxiv

Better trust signals



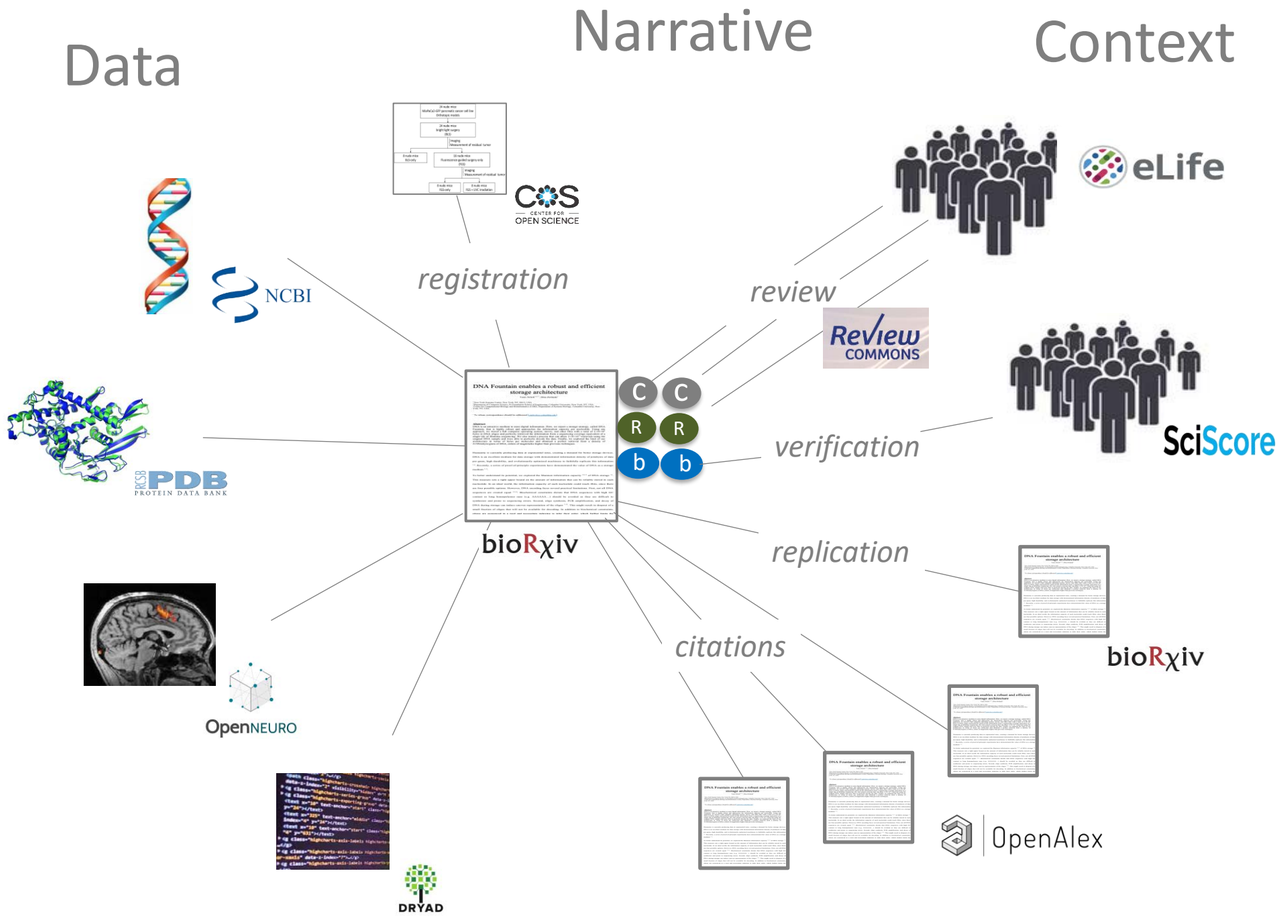
"We now have the opportunity to adopt a new approach with better trust signals, in which judgments of an article's merits are not made at a single point in time"

"Content checks can take place at various stages in the life cycle of an article."

Sever (2023) *PLOS Biol* doi: 10.1371/journal.pbio.3002234

openRxiv

The article of the future — a constellation



"we should strive for a constellation of linked web objects that include narrative, data in appropriate repositories, code…protocols or research plans, amid a cloud of review and evaluation elements that accumulate over time."

Sever (2023) *PLOS Biol*
doi: 10.1371/journal.pbio.3002234

openRχiv

Thank you!

Richard Sever,
Chief Science & Strategy Officer, openRxiv
Email: sever@openrxiv.org