

Preprints & scholarly infrastructure



Rachael Lammey
Member &
Community Outreach
@CrossrefOrg

Webinar, 30 Jan 2017



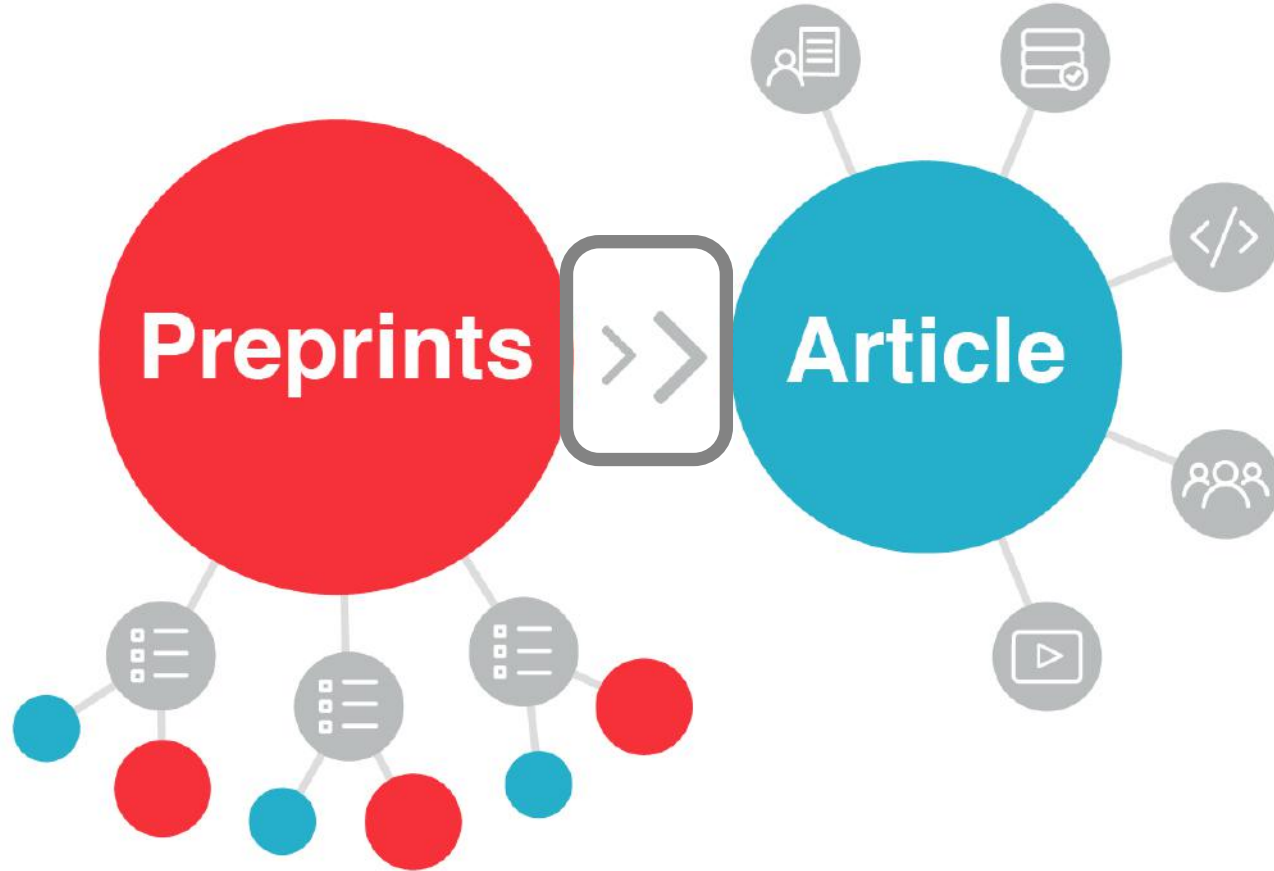
We are Crossref, a not-for-profit membership organization for scholarly publishing, working to make content easy to find, cite, link and assess. We do it in five ways: rallying the community; tagging metadata; running a shared infrastructure; playing with new technology; and making tools and services to improve research communications.

It's as simple—and as complicated—as that.



Today's agenda

- Introduction
- Jessica Polka, ASAPbio
- Martyn Rittman, Preprints, operated by MDPI
- Richard Sever, bioRxiv
- Q&A



Preprints in

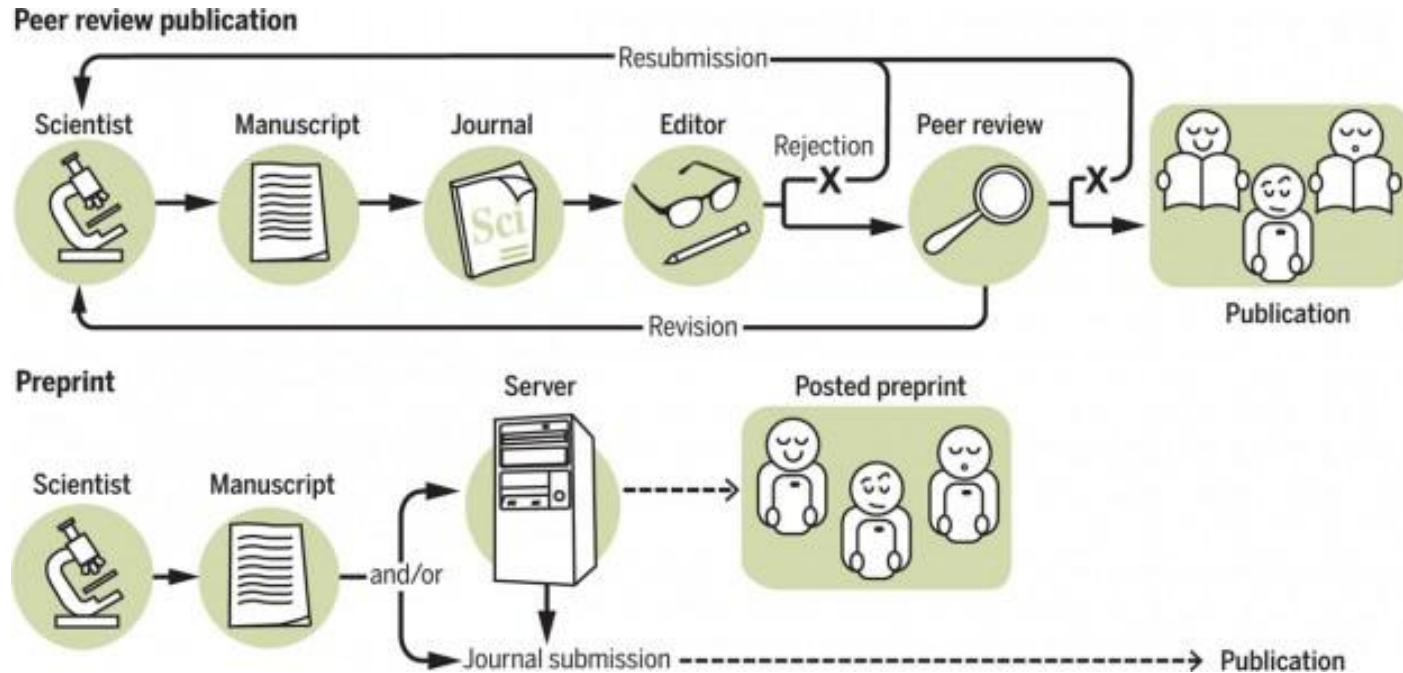
- Crossref membership
- Content registration with custom metadata
- Notification of links between preprints and publications
- ORCID Auto-update
- Identification of funders

Preprints out

- As with all supported content types, we make the metadata available for machine and human access, across multiple interfaces (e.g. REST API, OAI-PMH, Crossref Metadata Search).
- API:
 - <http://api.crossref.org/types/posted-content/works>
 - <http://api.crossref.org/works/10.20944/preprints201608.0191.v1/transform/application/vnd.crossref.unixsd+xml>

A preprint is a manuscript posted online before journal-organized peer review

Preprints & journals are compatible



Preprint servers have existed for 25 years

arXiv: 100,000 manuscripts per year



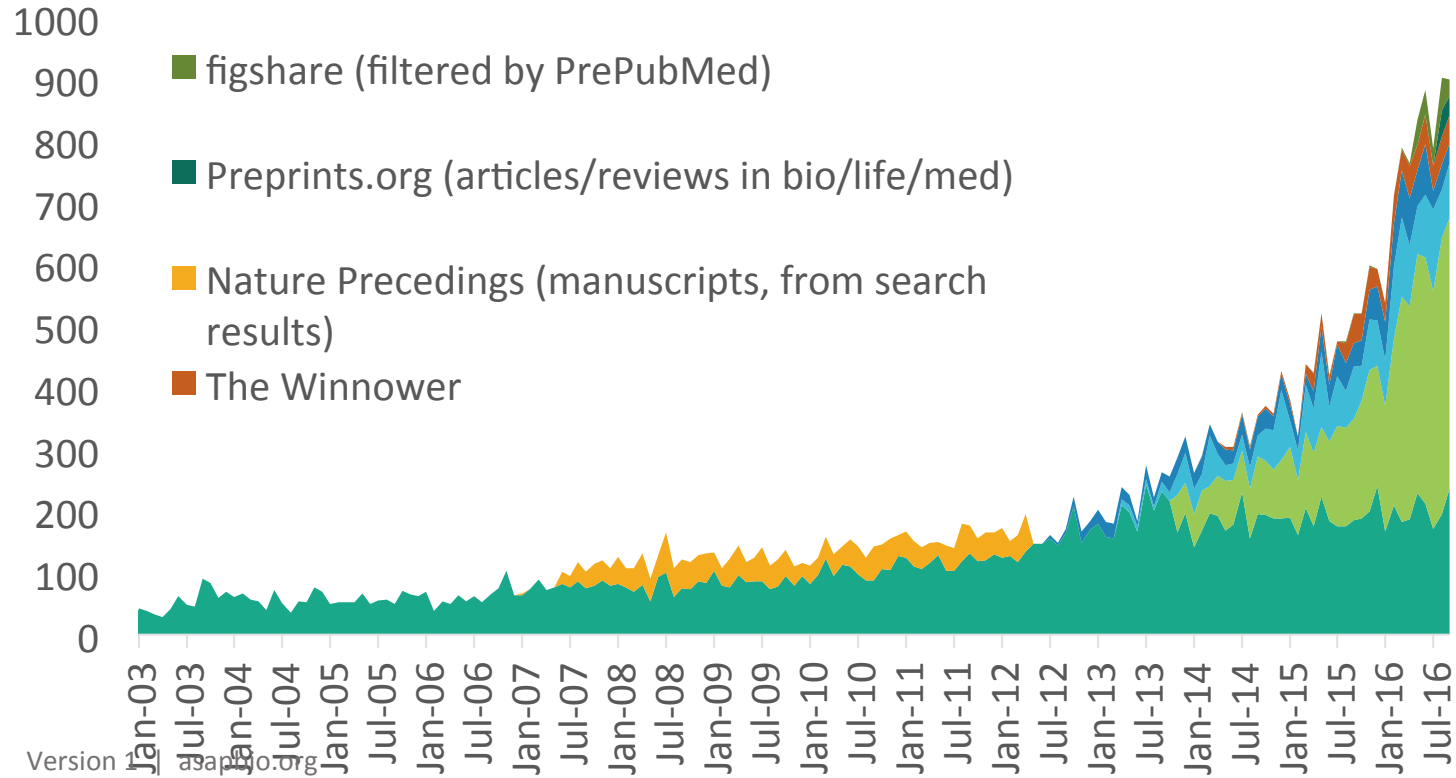
In Biology



Quantitative Biology (since Sep 2003)



Preprints are taking off in biology



Major benefits of preprints

- Immediately openly accessible
- Public disclosure of recent, “invisible” work for PhD thesis, fellowship, jobs
- Get more feedback on your work
- Control when work is made public (timestamp, DOI)
- Advance the pace of science

Posting preprints is a good experience



392 responses. Results at asapbio.org/survey

Funders including preprints in grants



Jan 10, 2017

HELMSLEY

Sept 29, 2016



Long-term postdoc fellowships 2016

SIMONS FOUNDATION

Simons Foundation Policies and Procedures — Revised September 1, 2016



Jan 3, 2017



Dec 12, 2016

Request for information (RFI): Including Preprints and Interim Research Products in NIH Applications and Reports

Notice Number: NOT-OD-17-006

Key Dates

Release Date: October 6, 2016

Response Date: November 29, 2016

Related Announcements

NOT-OD-17-009

Issued by

National Institutes of Health (NIH)

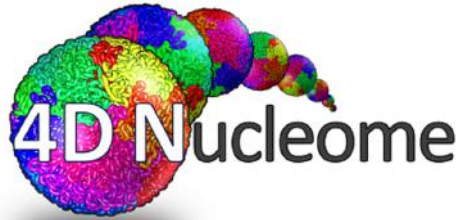
NIH RFI Dec 2016



CHAN
ZUCKERBERG
INITIATIVE

“In the interests of accelerating scientific discovery, the Biohub will establish a publication policy for open and rapid dissemination of research results: all Investigators **will be required to post manuscripts on Arxiv on the date of submission to peer-reviewed journals.**”

https://med.stanford.edu/rmg/funding/chan_zuckerberg.html



*A project of the NIH
common fund*



NATURE | NEWS



Big biology projects warm up to preprints

Consortium backed by US National Institutes of Health is first major biology programme to mandate online publication of results ahead of peer review.

Elie Dolgin

30 November 2016

 [Rights & Permissions](#)

Biologists [have been slow to embrace preprints](#), but for some it's no longer a choice.

The 4D Nucleome, a major research consortium funded by the US National Institutes of Health (NIH), is now requiring that all manuscripts related to its US\$120-million, five-year programme are posted to an online preprint server ahead of peer review. And a privately funded, US\$600-million biomedical research initiative in California is considering whether to demand its investigators do the same.

Twitter: #ASAPbio @jessicapolka

Journals innovating with preprints



October 4, 2016

Editors-in-Chief

Section Editors

Front Section Editors

Associate Editors

Preprint Editors


Consulting Editors

Editorial Board

Over 140 members of the genetics community submitted manuscripts meet the journal's

The editorial process is run as a partnership with experts who act as Associate Editors.

Linking preprints to journals



The Art of Persistence

Crossref

Category: Preprints

Included, registered, available: let the preprint linking commence.

We [began accepting preprints](#) as a new content type last month (in a category known as “posted content” in our XML schema). Over 1,000 records have already been registered in the first few weeks since we launched the service.

By extending our existing services to preprints, we want to help make sure that:

- links to these publications persist over time
- they are connected to the full history of the shared research results
- the citation record is clear and up-to-date.

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HELLO

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It's as simple—and as complicated—as that.



Biophysical Journal

Explore Online Now Current Issue Archive Journal Information For Authors Biophysical

Volume 112, Issue 1, pE01–E02, 10 January 2017

Editorial

2017 Ushers in New Editorial Board Members and More

Leslie M. Loew, Beth Staehle

DOI: <http://dx.doi.org/10.1016/j.bpj.2016.12.014> |  CrossMark

 1

Summary Full Text

Main Text

The *Biophysical Journal* welcomes 24 all working scientists who volunteer the invited papers. They seek qualified rev

itor
d h
as i

“Now, to document and help readers trace the complete publication record, authors are invited to voluntarily provide a footnote for their BJ article referencing their preprint in bioRxiv or arXiv, including the DOI number and the date the initial manuscript was deposited.”



Accelerating Science
and Publication in
biology

- **Convening stakeholders**
- **Sharing information:
FAQ & tracking policies**
- **Raising awareness**
- **Proposing additional
preprint infrastructure**



ASAPbio.org
Twitter: #ASAPbio

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The Multidisciplinary Preprint Platform

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- Earth Sciences
- Engineering
- Life Sciences
- Materials Science
- Mathematics & Computer Science
- Medicine & Pharmacology
- Physical Sciences
- Social Sciences

SUBMIT YOUR PREPRINT

Martyn Rittman, Ph.D.
preprints.org

Background



Preprints.org is run by MDPI, an open access publisher



We want to support rapid dissemination of knowledge



Preprints is run on a not-for-profit basis

What is a preprint?

“ A preprint is any article that hasn't yet been peer-reviewed and published in an academic journal. In most cases, you can think of it as a draft or working paper. A preprint can be updated and improved at any time.

”

ARTS & HUMANITIES

Anthropology &
Ethnography
Archaeology
Art History & Restoration
Comparative Literature
General Humanities
History
Linguistics
Literary Studies
Media Studies
Music Studies
Philosophy
Theory of Art
Religious Studies
Other
Architecture and Design

BEHAVIORAL SCIENCES

Applied Psychology
Behavioral Neuroscience
Cognitive & Experimental
Psychology
Clinical Psychology
Developmental Psychology
General Psychology
Social Psychology
Other

BIOLOGY

Anatomy & Morphology
Agricultural Sciences &
Agronomy
Animal Sciences & Zoology
Ecology
Entomology
Forestry
Horticulture
Physiology
Plant Sciences
Other

CHEMISTRY

Analytical Chemistry
Chemical Engineering
Applied Chemistry
Chemical Engineering
Electrochemistry
General & Theoretical
Chemistry
Organic Chemistry
Inorganic & Nuclear
Chemistry
Medicinal Chemistry
Physical Chemistry
Food Chemistry
Other

EARTH SCIENCES

Atmospheric Science
Geochemistry & Petrology
Geoinformatics
Geology
Geophysics
Oceanography
Paleontology
Space Science
Environmental Sciences
Other

ENGINEERING

Automotive Engineering
Biomedical & Chemical
Engineering
Civil Engineering
Control & Systems
Engineering
Electrical & Electronic
Engineering
Energy & Fuel Technology
General Engineering
Industrial & Manufacturing
Engineering
Marine Engineering
Mechanical Engineering
Other

LIFE SCIENCES

Biochemistry
Biophysics
Biotechnology
Cell & Developmental
Biology
Endocrinology &
Metabolomics
Genetics
Immunology
Molecular Biology
Microbiology
Virology
Other

MATERIALS SCIENCE

Biomaterials
General Materials Science
Metallurgy
Nanotechnology
Polymers & Plastics
Surfaces, Coatings & Films
Other

MATHEMATICS & COMPUTER SCIENCE

Algebra & Number Theory
Analysis
Applied Mathematics
Artificial Intelligence &
Robotics
Computational Mathematics
General Mathematics
Geometry & Topology
Information Technology &
Data Management
Logic
Numerical Analysis &
Optimization
General & Theoretical
Computer Science
Other

MEDICINE & PHARMACOLOGY

Allergy
Anesthesiology
Behavioral Neuroscience
Cardiology
Clinical Neurology
Dermatology
Nursing & Health Studies
Gastroenterology
General Medical Research
Nutrition
Ophthalmology
Oncology & Oncogenics
Pediatrics
Pharmacology & Toxicology
Psychiatry & Mental Health
studies
Sport Sciences & Therapy
Urology
Veterinary Medicine
Other
Dentistry
Obstetrics & Gynaecology
Pathology & Pathobiology

PHYSICAL SCIENCES

Acoustics
Applied Physics
Astronomy & Astrophysics
Atomic & Molecular Physics
Condensed Matter Physics
Fluids & Plasmas
General & Theoretical
Physics
Mathematical Physics
Nuclear & High Energy
Physics
Optics
Particle & Field Physics
Radiation & Radiography
Other

SOCIAL SCIENCES

Accounting
Economics
Econometrics & Statistics
Education Studies
Finance
Geography
Law
Library & Information
Science
Marketing
Microeconomics and
Decision Sciences
Organizational Economics &
Management
Political Science
Sociology
Other
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- See related articles.
- Altmetrics.

preprints.org > life_sciences > virology > doi: 10.20944/preprints201610.0119.v1

Preprint Article Version 1 NOT YET PEER-REVIEWED

Resistance to Rose Rosette Virus and Transmission Attributes

Patrick L. Di Bello ¹, Thanuja Thakke-Veetil ¹, Tobiasz Druclarek ¹, Ioannis E. Tzanetakis ^{1,*}

Department of Plant Pathology, Division of Agriculture, University of Arkansas, Fayetteville, AR 72701, USA

Version 1 | Received: 26 October 2016 / Approved: 27 October 2016 / Online: 27 October 2016 (11:50:52 CEST)

How to cite: Di Bello, P.; Thakke-Veetil, T.; Druclarek, T.; Tzanetakis, I. Resistance to Rose Rosette Virus and Transmission Attributes. *Preprints* 2016, 2016100119 (doi: 10.20944/preprints201610.0119.v1).

Abstract

Rosette caused by the rose rosette virus (RRV) is the most devastating malady of rose in the United States. Because of the recent discovery of the virus and the completion of Koch's postulates all assumptions about the disease are based on visual observations of material that may or may not have been infected by the virus. This study addresses several aspects of virus and disease epidemiology. Twenty rose genotypes were screened for mita and/or virus resistance. *Phylloctopus fructiphilus* the only known vector of RRV, was able to establish, lay eggs and develop to nymphs and adults in all genotypes. 'Stormy Weather' shows resistance to the virus as assessed by both mita and cleft-grafting transmission experiments. The acquisition/latent and inoculation access periods were studied revealing long acquisition/latent periods but rapid inoculation time frames. The outputs of this study will assist in the better management of the vector and the disease. The resistant genotype identified could be used in areas with high disease pressure to minimize spread and for identification of the mechanisms behind resistance or as breeding material to incorporate virus resistance to new cultivars. The short inoculation access period indicates that chemical control for the vector may be a challenging undertaking.

Subject Areas

transmission; resistance; detection; Emaravirus

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Readers' Comments and Ratings (2)

Soundness of evidence/arguments presented:

Conclusions well supported	<div style="width: 100%; height: 10px; background-color: #28a745;"></div>	100%
Most conclusions supported (minor revision needed)	<div style="width: 0%; height: 10px; background-color: #6c757d;"></div>	0%
Incomplete evidence (major revision needed)	<div style="width: 0%; height: 10px; background-color: #6c757d;"></div>	0%
Hypothesis, unsupported conclusions, or proof-of-principle	<div style="width: 0%; height: 10px; background-color: #6c757d;"></div>	0%

Comment 1

Received: 29 October 2016

Commenter: Henry Kuska

Commenter's Affiliation: retired, University of Akron

The commenter has declared there is no conflict of interests.

Comment: There appears to be a typing error on page 2.

"Acquisition and inoculation access periods (IAP and AAP respectively)) should have instead (AAP and IAP respectively.....)

+ Respond to this comment

Comment 2

Received: 29 October 2016

Commenter: Peter Harris

Commenter's Affiliation: retired English professor, WVU Tech

The commenter has declared there is no conflict of interests.

Comment: The experiment seems well designed, with satisfactory controls. I noticed some errors in spelling/punctuation/sentence structure. The ones I noticed are listed below. Since I was not looking for these things, there may be others I did not notice. I do wonder why you use "rose" instead of "roses".

Bellind's Dream (p. 5) > Belinda's Dream, Veterans Honor (p.5) > Veterans' Honor, "Grafts where kept" (p.4) > "Grafts were

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How does it work?

- Basic criteria that we check:
 - Title, abstract, keywords present
 - Document structure
 - Author affiliations and background
 - Recent citations
 - Controversial topics/junk papers
 - Use of human/animal/plant subjects

Working with Crossref



A screenshot of a search result on the Crossref preprints platform. At the top, a search bar contains the query "10.20944/preprints201612.0021.v1". Below the search bar, there are sorting options: "SORT BY: RELEVANCE PUBLICATION YEAR". A yellow highlight indicates "Showing DOI matching 10.20944/preprints201612.0021.v1". The main content area displays the title "Value Assigned to Employees who Preserve the Social and Organizational Environment", the status "Posted Content published 3 Dec 2016", and the authors "Authors: Crisanta-Allina Mazilescu, Bernard Gangloff". At the bottom, there is a link to the DOI "https://doi.org/10.20944/preprints201612.0021.v1" and an "Actions" button.

- Straightforward implementation: same process as for journals.
- Easy to cite and link to published versions.
- Grace period for removal of preprints before DOI registration.
- New DOI for each preprint version.

Outlook

- Can preprints become standard in more disciplines?
- Get review/peer support into the publication process at an earlier stage.
- Speed up the reporting of research.
- Support grant/job applications, especially for ECRs.



<http://www.preprints.org>



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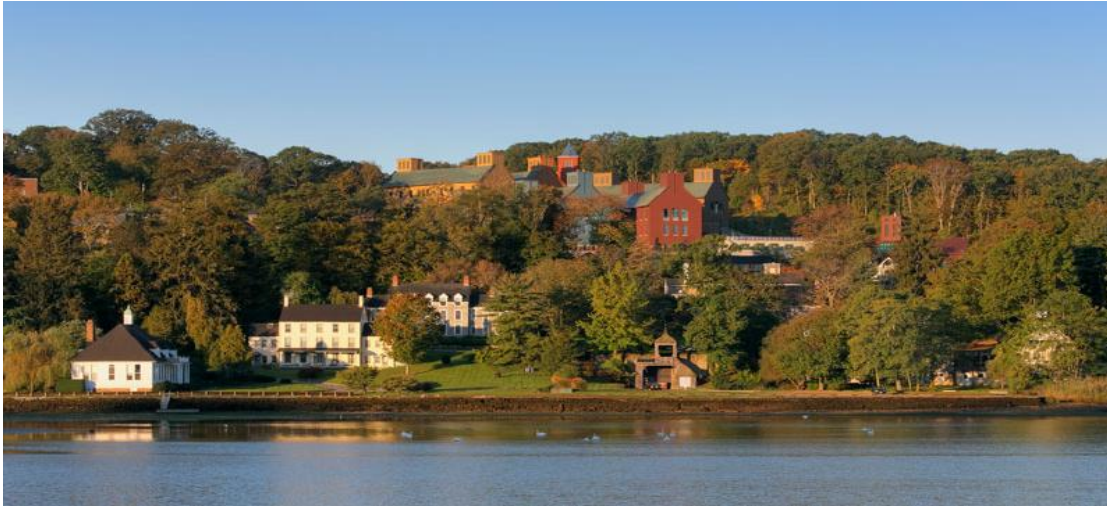
info@preprints.org

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Richard Sever, PhD
Assistant Director, Cold Spring Harbor Laboratory Press

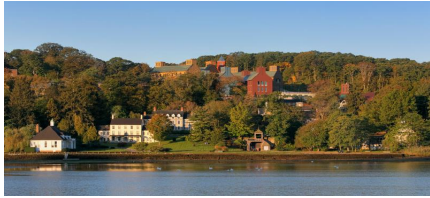
Twitter: @cshperspectives

Research at Cold Spring Harbor Lab



- 600 scientific staff
- 50 research groups
 - Molecular biology and genetics
 - Cancer
 - Neuroscience
 - Plant biology
 - Genomics and bioinformatics
 - Quantitative biology
- Ranked #1 worldwide in molecular biology & genetics

Science communication at Cold Spring Harbor



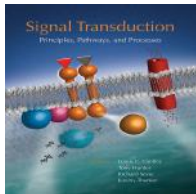
Conferences

- Meetings
- The Banbury Center
- Cold Spring Harbor Asia, Suzhou, China



Teaching

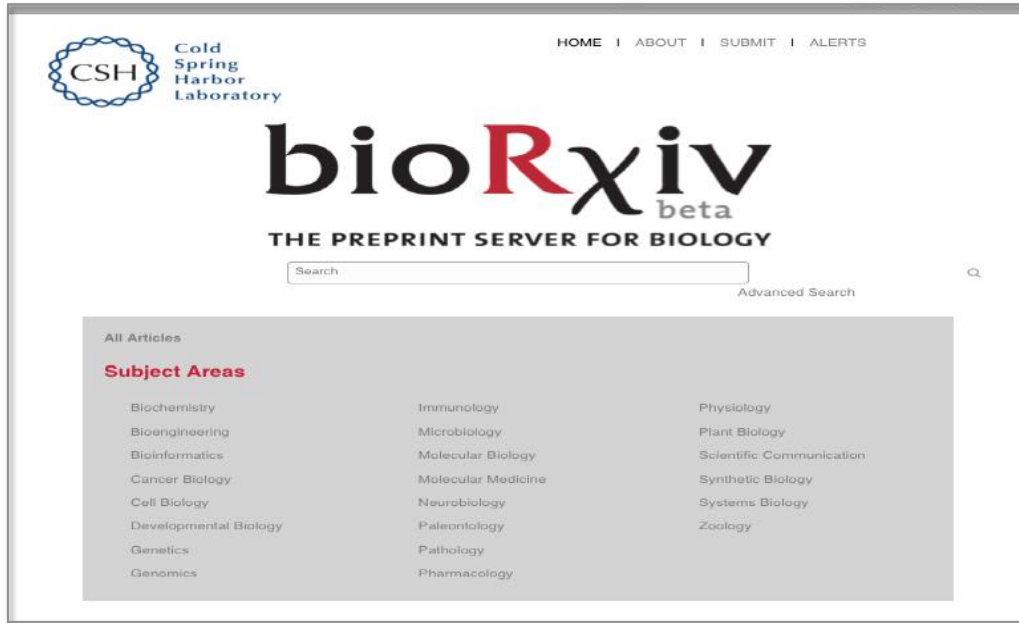
- Watson School of Biological Sciences
- Residential lab and lecture courses
- DNA Learning Center



Books & Journals

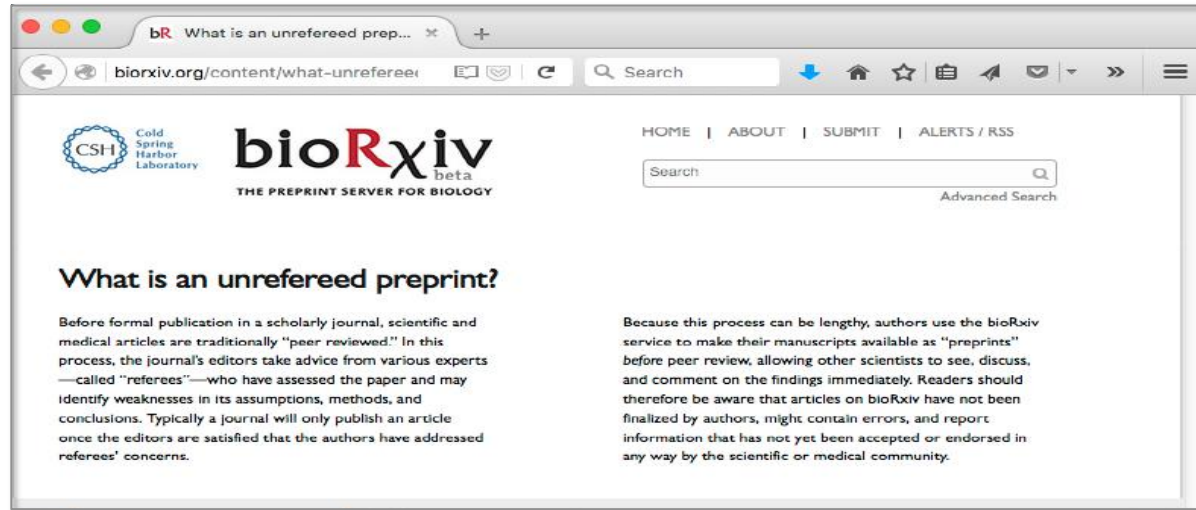
- Cold Spring Harbor Laboratory Press

2013: CSHL launched the preprint server for biology



- Non-profit service of CSHL
- Submission + access free
- Biological/medical sciences
- Complements arXiv

Preprint (n): an unpublished manuscript yet to be certified by peer review



The screenshot shows a web browser window with the address bar displaying `bioRxiv.org/content/what-unrefereed`. The page header includes the CSH Cold Spring Harbor Laboratory logo, the bioRxiv beta logo with the tagline "THE PREPRINT SERVER FOR BIOLOGY", and navigation links for HOME, ABOUT, SUBMIT, and ALERTS / RSS. A search bar is present with the text "Search" and a magnifying glass icon, with a link to "Advanced Search" below it. The main content area features the heading "What is an unrefereed preprint?" followed by two columns of text.

What is an unrefereed preprint?

Before formal publication in a scholarly journal, scientific and medical articles are traditionally "peer reviewed." In this process, the journal's editors take advice from various experts—called "referees"—who have assessed the paper and may identify weaknesses in its assumptions, methods, and conclusions. Typically a journal will only publish an article once the editors are satisfied that the authors have addressed referees' concerns.

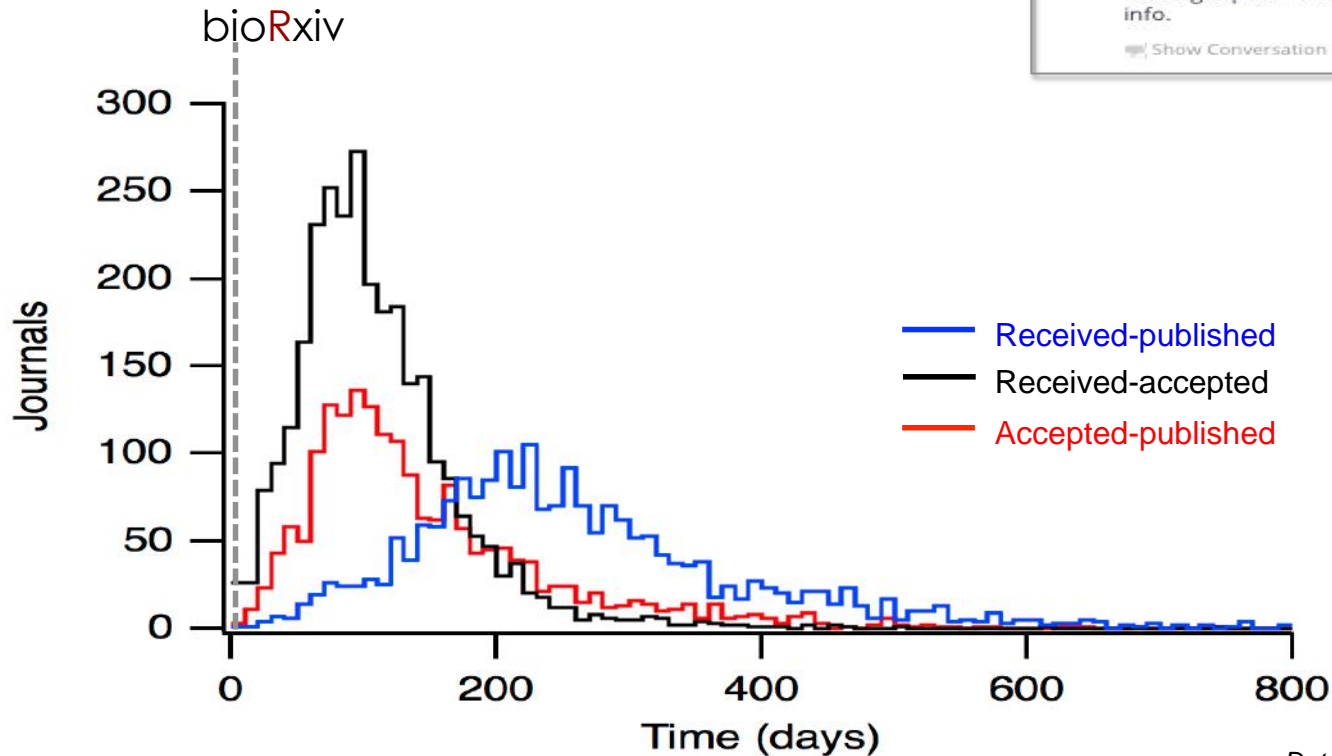
Because this process can be lengthy, authors use the bioRxiv service to make their manuscripts available as "preprints" before peer review, allowing other scientists to see, discuss, and comment on the findings immediately. Readers should therefore be aware that articles on bioRxiv have not been finalized by authors, might contain errors, and report information that has not yet been accepted or endorsed in any way by the scientific or medical community.

Benefits

- Rapid transmission of results
- Pre-publication feedback/discussion
- Visibility, especially for early-career scientists
- Immediate availability to grant/hiring committees



Accelerating communication



clathrin

1:44pm via Twitter for Android

@SimonBullock11 @biorxivpreprint pace of this = astounding. Preprinting a must for fast moving topics + wide dissemination of imprtnt info.

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All Articles

NOVEMBER 3, 2014

FinisherSC : A repeat-aware tool for upgrading de-novo assembly using long reads
Ka Kit Lam, Kurt LaButti, Asif Khalak, David Tse
bioRxiv doi: <http://dx.doi.org/10.1101/010215> Revised version **New Results**

Production of systemically circulating Hedgehog by the intestine couples nutrition to growth and development
Jonathan Rodenfels, Oksana Lavrynenko, Sophie Ayciriex, Julio L Sampaio, Maria Carvalho, Andrej Shevchenko, Suzanne Eaton
bioRxiv doi: <http://dx.doi.org/10.1101/002626> Revised version **New Results**

NOVEMBER 2, 2014

E. coli populations in unpredictably fluctuating environments evolve to face novel stresses through enhanced efflux activity
Shraddha Madhav Karve, Sachit Daniel, Yashraj Chavhan, Abhishek Anand, Somendra Singh Kharola, Sutirth Dey
bioRxiv doi: <http://dx.doi.org/10.1101/011007> **New Results**

Subject Areas

All Articles

- Animal Behavior and Cognition
- Biochemistry
- Bioengineering
- Bioinformatics
- Biophysics
- Cancer Biology
- Cell Biology
- Developmental Biology
- Ecology
- Evolutionary Biology
- Genetics
- Genomics
- Immunology
- Microbiology
- Molecular Biology

bioRxiv.org/content/early/2013/12/01/000042

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New Results

Routes for breaching and protecting genetic privacy

Yaniv Erlich, Arvind Narayanan
doi: <http://dx.doi.org/10.1101/000042>
Now published in *Nature Reviews Genetics* doi: 10.1038/nrg3723

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Subject Area
Genomics

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Cell Biology
Developmental Biology
Ecology
Evolutionary Biology

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ABSTRACT

We are entering the era of ubiquitous genetic information for research, clinical care, and personal curiosity. Sharing these datasets is vital for rapid progress in understanding the genetic basis of human diseases. However, one growing concern is the ability to protect the genetic privacy of the data originators. Here, we technically map threats to genetic privacy and discuss potential mitigation strategies for privacy-preserving dissemination of genetic data.

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Routes for breaching and protecting genetic privacy

Yaniv Erlich, Arvind Narayanan
doi: <http://dx.doi.org/10.1101/000042>
Now published in *Nature Reviews Genetics* doi: [10.1038/nrg3723](https://doi.org/10.1038/nrg3723)

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Yaniv Erlich¹ (yaniv@wi.mit.edu) and Arvind Narayanan²

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Genomics

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- Developmental Biology

bioRxiv.org/content/early/2014/03/21/003517.article-metrics

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Towards a new history and geography of human genes informed by ancient DNA

Joseph Pickrell, David Reich
doi: <http://dx.doi.org/10.1101/003517>

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Evolutionary Biology

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- Bioengineering
- Bioinformatics

biorniv.org/content/early/2014/04/05/001552

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New Results

Ancient human genomes suggest three ancestral populations for present-day Europeans

Iosif Lazaridis, Nick Patterson, Alissa Mittnik, Gabriel Renaud, Swapan Mallick, Karola Kirsanow, Peter H. Sudmant, Joshua G. Schraiber, Sergi Castellano, Mark Lipson, Bonnie Berger, Christos Economou, Ruth Bollongio, Qiaomei Fu, Kirsten Bos, Susanne Nordenfelt, Heng Li, Cesare de Filippo, Kay Prüfer, Susanna Sawyer, Cosimo Posth, Wolfgang Haak, Fredrik Hallgren, Elin Fornander, Nadin Rohland, Dominique Delsate, Michael Francken, Jean-Michel Guinet, Joachim Wahl, George Ayodo, Hamza A. Babiker, Graciela Baillet, Elena Balanovska, Oleg Balanovsky, Ramiro Barrantes, Gabriel Bedoya, Haim Ben-Ami, Judit Bene, Fouad Berrada, Claudio M. Bravi, Francesca Brisighelli, George B.J. Busby, Francesco Cali, Mikhail Churnosov, David E.C. Cole, Daniel Corach, Larissa Damba, George van Driem, Stanislav Dryomov, Jean-Michel Dugoujon, Sardana A. Fedorova, Irene Gallego Romero, Marina Gubina, Michael Hammer, Brenna Henn, Tor Helvig, Ugur Hodoglugil, Aashish R. Jha, Sena Karachanak-Yankova, Rita Khusainova, Elza Khusnutdinova, Rick Kittles, Toomas Kivisild, William Klitz, Vaidutis Kučinskas, Alena Kushniarevich, Leila Laredj, Sergey Litvinov, Theologos Loukidis, Robert W. Mahley, Bela Melegh, Ene Metspalu, Julio Molina, Joanna Mountain, Klemetti Näkkäljärvi, Desislava Nesheva, Thomas Nyambo, Ludmila Osipova, Jüri Parik, Fedor Platonov, Olga L. Posukh, Valentino Romano, Francisco Rothhammer, Igor Rudan, Ruslan Ruizbakiev, Hovhannes Sahakyan, Antti Sajantila, Antonio Salas, Elena B. Starikovskaya, Ayele Tarekegn, Draga Toncheva, Shahlo Turdikulova, Ingrida Uktveryte, Olga Utevska, René Vasquez, Mercedes Villena, Mikhail Voevoda, Cheryl Winkler, Levon Yepiskoposyan, Pierre Zalloua, Tatjana Zemanik, Alan Cooper, Cristian Capelli, Mark G. Thomas, Andres Ruiz-Linares, Sarah A. Tishkoff, Lalji Singh, Kumarasamy Thangaraj, Richard Villems, David Comas, Rem Sukernik, Mait Metspalu, Matthias Meyer, Evan E. Eichler, Joachim Burger, Montgomery Slatkin, Svante Pääbo, Janet Kelso, David Reich, Johannes Krause

doi: <http://dx.doi.org/10.1101/001552>

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ABSTRACT

We sequenced genomes from a ~7,000 year old early farmer from Stuttgart in Germany, an ~8,000 year old hunter-gatherer from Luxembourg, and seven ~8,000

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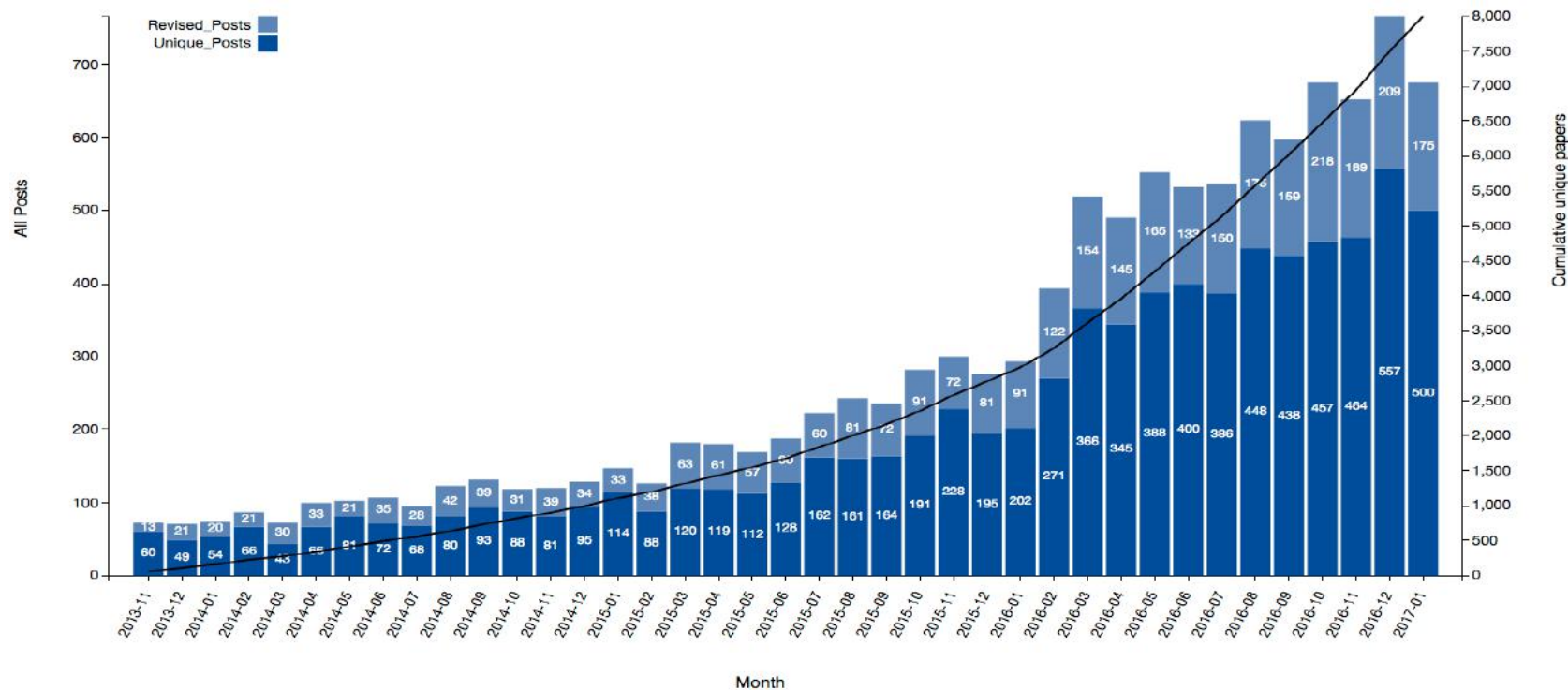
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- ~8000 submissions (~90% approved)
- ~30% revised (many more than once)
- ~30,000 authors
- >60% of papers subsequently published
- >400 journals have published papers preprinted on bioRxiv

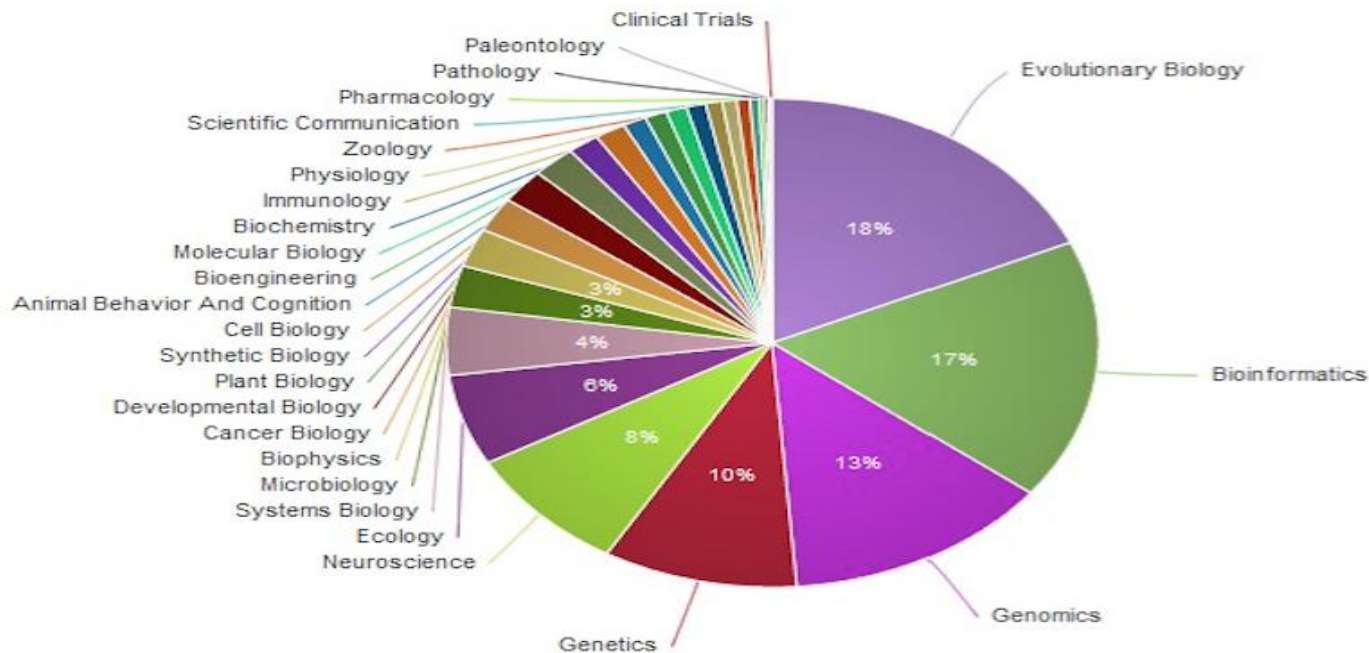
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- Policy change: more journals allowing preprint posting
- Rule change: funding bodies allow citing of preprints in grants

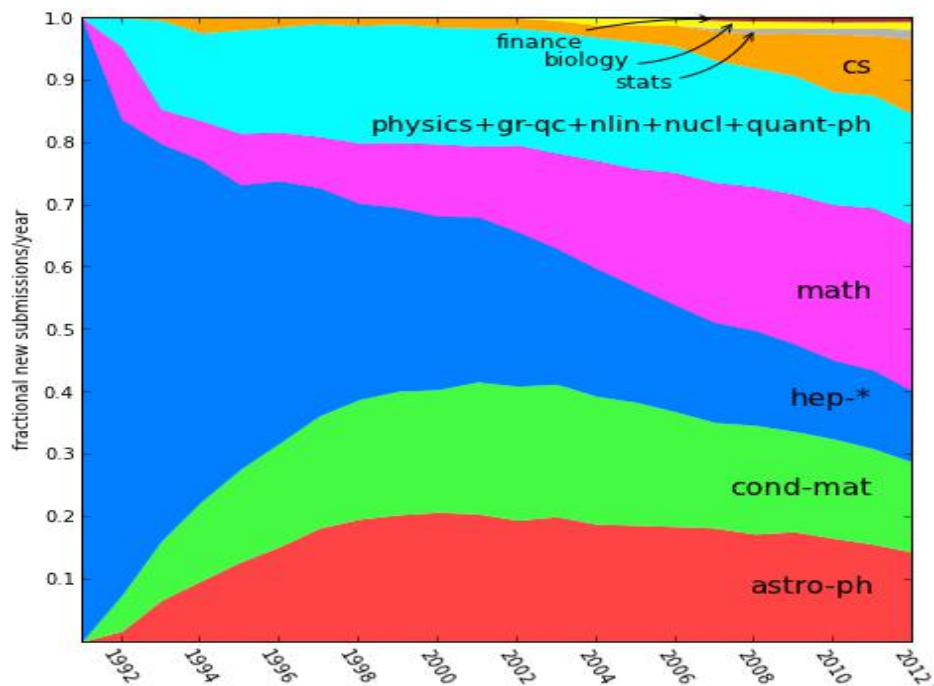
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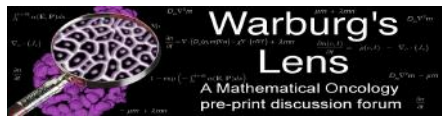
- Citations

Navawongse, R., Choudhury, D., Raczowska, M., Stewart, J.C., Lim, T., Rahman, M., Toh, A.G.G., Wang, Z., and Claridge-Chang, A. (2015). *Drosophila* learn efficient paths to a food source. bioRxiv. <http://dx.doi.org/10.1101/033969>.

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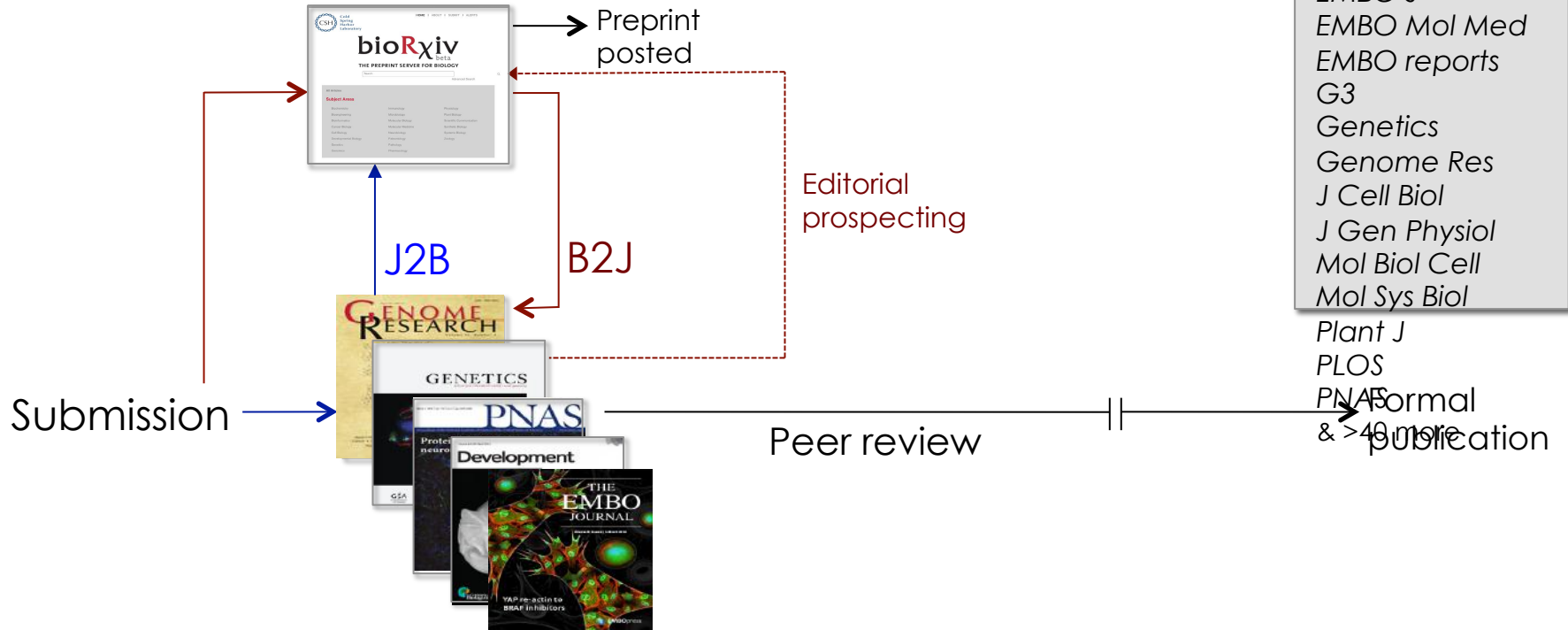
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Meeting organizers:
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 Barbeira, A.; Shah, K. P.; Torres, J. M.; Wheeler, H. E.; Torstenson, E. S.; Edwards, T.; Garcia, T.; Bell, G. I.; Nicolae, D.; Cox, N. J.; Im, H. K.
 10.1101/045260 — Posted: 2016-03-23

Survey of the Heritability and Sparsity of Gene Expression Traits Across Human Tissues
 Wheeler, H. E.; Shah, K. P.; Brenner, J.; Garcia, T.; Aquino-Michaels, K.; GTE Consortium, ; Cox, N. J.; Nicolae, D. L.; Im, H. K.
 10.1101/043653 — Posted: 2016-03-15

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 Shah, K.; Wheeler, H. E.; Gamazon, E. R.; Nicolae, D. L.; Cox, N. J.; Im, H. K.



Hand-drawn notes by Alex Cagan on gene regulation and expression. The notes are organized into sections with colored backgrounds and include diagrams of a person reading and a person writing. Key topics include:

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 - Regulatory elements
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images by Alex Cagan @ATL_Cagan

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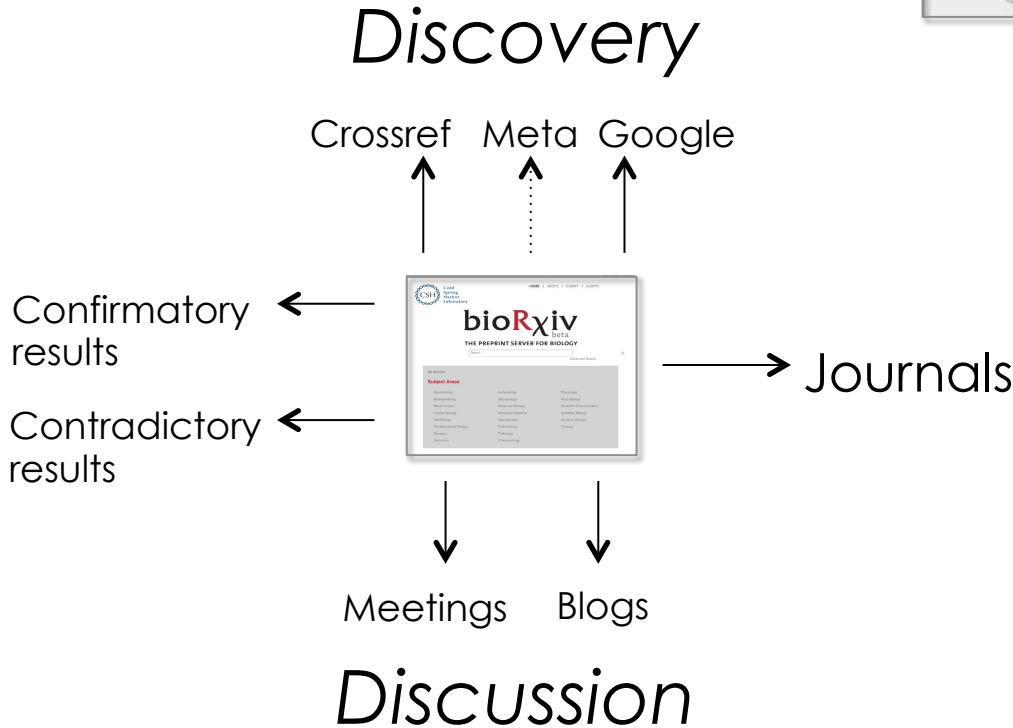
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