

The bioRxiv preprint service and its integration with journals

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EMUG meeting, Boston, June 17, 2016



Preprint (*n*): a complete but unpublished manuscript yet to be certified by peer review that's freely available online





bioRxiv preprint service for biology launched Nov 2013

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- Authors' PDFs no typesetting/mark-up
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- Revised versions can be posted any time



What scientists were saying in 2013

"It's ridiculous I have to wait months to read a paper while it goes through peer review...let me decide for myself whether it's any good"

"Think how much time is wasted!"

"I am writing a grant but the paper is not going to be published by the time I submit. The solution is a pre-print server that can be referenced"

"I'm posting my manuscript on arXiv"

6H Cold Spring Harbor Laboratory

arXiv: preprints in physics, maths, statistics, computer science, quantitative biology



- Established 1991
- Mechanism for sharing findings prior to publication & establishing priority
- Non-profit funded by Cornell, libraries & various foundations
- >1 million preprints



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Benefits

- Rapid transmission of results
- Pre-publication feedback/discussion
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Abstract		Cancer Biology			
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EGFR. So it is very important to predict the candida	lung cancer. MicroRNAs are dysregulated in lung cancer, and microRNAs can regulate Animal Behavior and Cognition EGFR. So it is very important to predict the candidate microRNAs that target mutated Biochemistry EGFR and to investigate the role of these candidate microRNAs in lung cancer. Biochemistry				
Materials and methods: In this study, we investigat	-	Bioengineering			
expression between lung adenocarcinoma cell lines (H1650 and PC9) and its wild-type (H1299 and A54		Bioinformatics Biophysics			
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Progress since 2013

- ~4500 submissions (>90% approved)
- ~30% revised (many more than once)
- >50% of papers subsequently published
- >300 journals have published papers preprinted on bioRxiv



Progress since 2013

- Behavior change: more biologists posting/reading preprints
- Policy change: more journals allowing preprint posting
- Rule change: NIH grant applications can now cite "non-peerreviewed publications"
- Community change: awareness raised by two meetings -

THE ROYAL SOCIETY2015ASAPbio2016



ASAPbio

- 1-day meeting for representative stakeholders, Feb 2016
- Consensus that preprints solve an important problem...timely sharing of publicly funded research

"Preprints decouple journal publication from dissemination of knowledge. By sharing results when they are ready to be shared, science can move forward while the slow wheels of peer review turn." Stephen Floor, UC Berkeley

- Criticism of journals that will not consider preprints
- Strong support for one service in biology
- Plans to lobby NIH & other funders



ASAPbio impact







ASAPbio impact



20 MAY 2016 • VOL 352 ISSUE 6288

SCIENTIFIC COMMUNITY

Preprints for the life sciences

The time is right for biologists to post their research findings onto preprint servers

By Jeremy M. Berg,¹ Needhi Bhalla,² Philip E. Bourne,³ Martin Chalfie,⁴ David G. Drubin,⁵ James S. Fraser,⁶ Carol W. Greider,⁷ Michael Hendricks,⁸ Chonnettia Jones,⁹ Robert Kiley,⁹ Susan King,¹⁰ Marc W. Kirschner,¹¹ Harlan M. Krumholz,¹² Ruth Lehmann,¹³ Maria Leptin,¹⁴ Bernd Pulverer,¹⁴ Brooke Rosenzweig,¹⁵ John E. Spiro,¹⁶ Michael Stebbins,⁷ Carly Strasser,¹⁸ Sowmya Swaminathan,¹⁹ Paul Turner,²⁰ Ronald D. Vale,²¹ K. VijayRaghavan,²² Cynthia Wolberger²³

ACADEMICS' PERSPECTIVE

J. M. Berg, N. Bhalla, M. Chalfie, J. S. Fraser, C. W. Greider, M. Hendricks, M. W. Kirschner, R. Lehmann, P. Turner, C. Wolberger Motivated by frustrations in the slow speed of publishing (1), we and other junior and senior life scientists participated in the ASAPbio meeting. Physicists have embraced sharing their work as preprints for 25 years. Paul Ginsparg, founder of arXiv, described how physicists, mathematicians, and computer scientists check arXiv when



ASAPbio survey

Are you satisfied with the current state of publishing in biology?

91%

Posting preprints is a positive experience (though few have done it)

9%











Posts

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Usage

bioRxiv Usage (HW stats) by Month





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bioRxiv Comments by Month



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review

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Cameron Turner · 3 months ago Do you think the contamination may have entered the samples and negative controls during laboratory processing? It doesn't seem like the extraction kits can be isolated as the source of contamination. Ancient DNA labs using massively parallel sequencing are extremely vigilant against contamination originating from PCR or other high-DNA sources in their laboratories (DOI: 10.1016/j.aanat.2011.03.008). Could ambient bacterial DNA in the lab have entered during, for example, library preparation?

If that were the source of contamination then it could perhaps be solved more easily (e.g., rigorous laboratory precautions) than if it were in the commercial kits. Difficult situation though, given how the ubiquity of bacteria. ∧ ∨ • Reply • Share >

Alan Walker 🖈 Cameron Turner 🔹 3 months ago Figure 2 gives the best answer to this query I think. Four different extraction kits







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20.



Got great comments on my preprint (by email) and an invitation to submit it to a real journal. biorxiv.org/content/early/...



Publication

>320 journals have published bioRxiv preprints

Nature, Science, Cell, PNAS, eLife, Nature Genetics, Nature Neuroscience, Cell Reports, Nature Communications, Genome Research, Genetics, Evolution, Biophysical Journal, PLoS One, PLoS Genetics, PLoS Pathogens, Biology Open, Bioinformatics, American Journal of Human Genetics, Journal of Neuroscience, etc



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Disciplines



Changing preprint policies





Casey Greene @GreeneScientist 110d @phylogenomics @ara_anderson @mbeisen @leonidkruglyak @AACR I'm also going to stop reviewing for journals that don't allow preprints.

-

"Currently we do not permit our authors to deposit their work in pre-print servers, ...we have recently received feedback from researchers that they will not publish with us on this basis."

"you can easily imagine a situation... where having your journal not be preprint-friendly is an active disincentive to publishing there"

Changing citation policies

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14 Cell 165, 1–15, April 21, 2016

Manuscript recruitment





Pelling Lab @pellinglab

For any doubters, 2 of our recent @biorxivpreprint's received submission invitations from 3 well respected journals #ASAPbio #OpenScience

8:45am · 31 May 2016 · Twitter for iPhone Quadeloupe, Guadeloupe

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- Enabling authors to simultaneously submit a manuscript to a journal and to bioRxiv (J2B)
- Enabling authors to submit a preprint directly to a journal from bioRxiv (B2J)







- B2J requires a journal's manuscript management system to coordinate with bioRxiv's Bench>Press system
- Transfer of manuscript and metadata is done via FTP
- Currently 40 journals available for B2J manuscript transfer
- Many more are lining up
- ~100 transfers have taken place





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(Submitted on behalf of the authors)

BIORXIV/2013/000299

Deletions of recessive disease genes: CNV contribution to carrier states and disease-causing alleles

Andrew Sussman ^(D), Matthew M. Campbell ^(D), Brett C. Baggett, Zachary T. Soens, Mitchell M. Rao, Patricia M. Hixson, Ankita Patel, Weimin Bi, Sau Wai Cheung, Seema R. Lalani, Arthur L. Beaudet, Pawel Stankiewicz, Chad A. Shaw, and Janet Gomez





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Editorial Manager and bioRxiv

- Integration with Editorial Manager will be available in July
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- Questions? inglis@cshl.edu



Making bioRxiv an essential hub in the communication ecosystem





Acknowledgements

The bioRxiv Team Jan Argentine Linda Sussman Ted Roeder

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