

Analysis of Scientific Papers

ANAT900

Fall 2016

Thursdays 2-3pm (excluding Sept 8)

2030 Hemenway

Theme: Preprints

Course Goals

- Become familiar with preprints
- Learn how to analytically dissect a manuscript
- Learn how to create a written review for a manuscript that has not been previously peer-reviewed (as a journal referee would)
- Get comfortable with your decisions having weight (your reviews will be posted online)
- Provide much needed feedback to preprint authors (your review will also be emailed to corresponding authors)
- Make connections with the larger scientific community

Preprints are non-peer reviewed manuscripts posted for free on servers open to the world-wide scientific community and the public.

The image shows the homepage of bioRxiv, a preprint server for biology. At the top left is the Cold Spring Harbor Laboratory (CSH) logo. To the right of the logo are navigation links: HOME | ABOUT | SUBMIT | ALERTS / RSS. The main title 'bioRxiv' is prominently displayed in the center, with 'beta' underneath it. Below the title is the tagline 'THE PREPRINT SERVER FOR BIOLOGY'. A search bar is located below the tagline, with a magnifying glass icon on the right and the text 'Advanced Search' below it. A large grey box contains a list of 'Subject Areas' under the heading 'Subject Areas'. The list includes: All Articles, Animal Behavior and Cognition, Biochemistry, Bioengineering, Bioinformatics, Biophysics, Cancer Biology, Cell Biology, Clinical Trials, Developmental Biology, Ecology, Epidemiology, Evolutionary Biology, Genetics, Genomics, Immunology, Microbiology, Molecular Biology, Neuroscience, Paleontology, Pathology, Pharmacology, Physiology, Plant Biology, Scientific Communication and Education, Synthetic Biology, Systems Biology, and Zoology. At the bottom of the grey box is the text 'View by Month'.

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Epidemiology
Evolutionary Biology
Genetics
Genomics
Immunology
Microbiology
Molecular Biology
Neuroscience

Paleontology
Pathology
Pharmacology
Physiology
Plant Biology
Scientific Communication and Education
Synthetic Biology
Systems Biology
Zoology

View by Month

Where can you find preprints?

- [bioRxiv.org](https://www.biorxiv.org)
- preprints.org
- [arXiv.org](https://arxiv.org)
- peerj.com/preprints
- f1000research.com (prior to review)

Course Organization

- Sign up for a date to present and post an online review.
- You will be automatically signed up to provide a written review 2 weeks after your presentation date.

	Presenter	Co-Author
Week 1	Person A	Person D
Week 2	Person B	Person C
Week 3	Person C	Person A
Week 4	Person D	Person B

Course Requirements

- You are responsible for:
 1. presenting one time during the course
 2. working with co-author to post a written review to thewinnower.com (by 3pm Monday after your presentation)
 3. emailing corresponding author your review
 4. preparing a written review and co-leading a discussion for an additional preprint 2 weeks later

Presentation Breakdown

- Spend no more than 30 minutes covering an introduction and basics of figures in the preprint. (Less if possible!)
- Spend remaining time reviewing the preprint as you would for a journal.

How to Review a Manuscript

1. Overview:

- Summarize the major finding in the paper to show you understand.
- What does this finding add to the field (put the finding in context of what is was previously known and discuss the impact of the new information)?
- Summarize your opinion of the paper and whether you want particular points addressed in a revision.

2. Major Points:

- List major points that must be addressed (by rewriting) by the authors in order to proceed with publication.
- List major points that must be addressed (by further experiments) by the authors in order to proceed with publication.

3. Make any suggestions that might significantly improve the manuscript

4. Minor Points:

- List minor points that must be addressed (typos, incorrect labeling of figures etc.)
- List minor points that might improve the manuscript (rewording for clarity, additional work/citations that are relevant to the discussion)

5. Recommendation:

- Accept without revision?
- Accept with minor revision?
- Accept with major revision?
- Reject?

Written Review

- Include only Overview and Major Points in review to be posted online.
- Presenter and co-author will work on finalized written review together (incorporating comments from class discussion) and post on thewinnower.com by 3pm Mondays.
- Both presenter and co-author listed as authors for online review.
- Presenter will email corresponding author with posted review.

Preprint to present next week

Loss of a doublecortin (DCX) domain containing protein causes structural defects in a tubulin-based organelle of *Toxoplasma gondii* and impairs host cell invasion.

Eiji Nagayasu¹, Yu-Chen Hwang², Jun Liu³, John M. Murray³, Ke Hu³

doi: <http://dx.doi.org/10.1101/069377>

Preprint to present October 13

Chytrid fungi construct actin-rich pseudopods, implicating actin regulators WASP and SCAR in an ancient mode of cell motility

Authors: Lillian K. Fritz-Laylin,^a Samuel J. Lord,^a and R. Dyche Mullins^{a,1}

doi: <http://dx.doi.org/10.1101/051821>

How to Contact Me

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Questions?