How I interact with the scientific literature

Bill Jackson
Assistant Professor
Microbiology and Immunology
Medical College of Wisconsin
Milwaukee, WI

Slides available on Google+ (wtjackson)
Thank You!

We need you!

We review about 20-25 papers/year.

I read numerous scientist blogs.

I read my own first drafts.

We are your customers and your partners. Why don't we see it that way?
About Me:

• S.B. Biology MIT ’93

• Ph.D. Molecular and Cell Biology UC Berkeley ’99 (Yeast Genetics)

• Postdoctoral Fellowship Stanford School of Medicine (Viruses and Cell Biology)

• Assistant Professor since 2007 Medical College of Wisconsin
How I find papers
How I organize and archive papers
How I read papers
How I publish papers
How I found papers, 1993
How I find papers, now
How I want to find papers, 2013
How I want to find papers, 2013

Oh no, he’s one of those Open Source Hard Liners!

Nope. I don’t make every experiment available to the public the second it’s confirmed and repeated.

A six-month paid window prior to open access is reasonable. But there are exceptions…

(Such as if access is needed to complete a review for a paid access article)
Is there a real problem?

How can publishers demonstrate that they value academic customer-partners?
Don’t email “help” – provide value and promote it!
There is a real problem

Modest suggestions:

• Access to a limited number of paid articles per year for .edu email addresses

• Access to a set number of paid articles for each review completed.

Would require revamp and consolidation of journal websites. (As much as I enjoy having 30+ separate username / password combinations)
How I find papers

How I organize and archive papers

How I read papers

How I publish papers
How I organized and archived papers

1993

2003

2012
• Polished interface (iTunes-like)
• Database searches are excellent (Both PubMed and local)
• Renames and organizes PDFs
• Strips and recognizes paper metadata
• Easy to email PDFs, leave notes/markups

Papers (Mekentosj)

• Purchased: No subscription model

Important because you have a customer population trained to expect change and volatility!
Why I still need a separate reference manager

Papers (and Zotero and Mendeley) use a standard called the Citation Style Language (CSL) CSL does not yet support PubMed Central ID numbers as a field.

The NIH requires PMCID in all grants.

Options: Hand-enter PMCID, use two reference managers, or stick to a commercial product with a proprietary but quickly updated citation format.
How I find papers

How I organize and archive papers

How I read papers

How I publish papers
# How I read papers

<table>
<thead>
<tr>
<th>Method</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Binder Clipped</td>
<td>Paper carefully analyzed, critiqued.</td>
</tr>
<tr>
<td>Stapled</td>
<td>Paper perused, main points understood.</td>
</tr>
<tr>
<td>PDF</td>
<td>File opened. Much useless highlighting. Then, many angry birds slain.</td>
</tr>
</tbody>
</table>
Why are PDFs so terrible for scientific papers?

- Pre-set text and image sizes
- Cumbersome separation of figure from the relevant text
- Limited interactivity / dynamism

What about the HTML versions?

- Not portable
- Require active connection or multi-file download
- May require subscription login / IP address check
- Still not formatted in an easy-to-read fashion
What would a great file format for scientific papers look like?

**Challenge:**

**Requirements:**

- Optimized for screen reading (dynamic text size etc)
- Main text and figures are independent
- Downloadable as single file
- No special software required
- Searchable, indexable
- Usable by many platforms (desktop/mobile)
What would a great file format for scientific papers look like?

• Challenge:

• Single HTML5 files with embedded images for figures
• Readable in any modern desktop browser, iPad, etc.
• Ability to be dynamic and customizable – text size, floating figure window, multiple frames, etc.
• Used by many publishers: either have a summit to design it together, or give away the format under a Creative Commons license!

• Suggestion:
How I find papers
How I organize and archive papers
How I read papers
How I publish papers
How I publish papers

I upload them…

I schedule a full work day for formatting and uploading.

This is not an experience worth paying for!

But of course I don’t complain while I’m hoping my paper will be considered by an editor and reviewers. Once it’s accepted I’m not going to complain about it either, so the publisher never hears about it…
How I decided where to publish papers

2003

- Impact Factor
- Availability (NIH-funded institutions)
- Perception: significance judgement

Note: NIH is increasing the emphasis on judging significance as journals are reducing it. (See also: irony)
In Conclusion:

• Provide real and obvious value to your academic customer-partners

• Make the screen reading experience as good as the on-paper experience

• Unify and improve the websites your customer-partners use to interact with your journals
Thank You

International Association of Scientific, Technical & Medical Publishers
Image Sources

http://www.brooklynvegan.com (hippies)
http://www.historiann.com/ (preppies)
  http://wfgr.com (cheeseheads)
http://notesaboutnothing2010.wordpress.com/ (monkey)
http://www.guardian.co.uk/books/ (Hemingway)
http://refdb.sourceforge.net/cli.html (xterm)
http://hlug.wordpress.com/2007/07/ (library)
  http://libraries.mit.edu (copy card)
http://www.aofoundation.org/ (old Pubmed)
http://www.steves-digicams.com/ (old printer)
  http://deálnay.com/ (new printer)
http://www.handymancraftywoman.com/ (file cabinet)
http://en.wikipedia.org/wiki/The_Scream (Munch)