

School of Biotechnology and Biomolecular Sciences

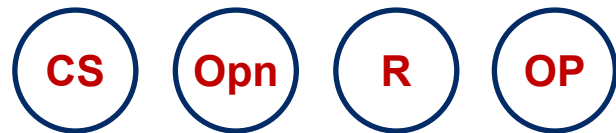
Current trends in academia: online presence, community service and openness

BABS Postdoc/ECR Club

Xabier Vázquez-Campos

28th July 2023

Intro



- Conferences not the absolute primary meeting point for researchers
 - Social networks
 - Unconferences
 - Webinars
- Volume of new publications higher than ever
 - More data per publication
 - More complex data analysis
- Publications not necessarily the main way to make yourself noticed

CS: Community service
OP: Online presence
Opn: Openness
R: reproducibility

Online presence

OP

- We spend a lot of time online
- University/Research group websites often static and/or poorly managed
- EMCR lack of stable positions
- Independent websites/profiles are a must, e.g.
 - [Google Scholar](#): minimal example but provides citations
 - [ORCID](#): can be used as GS
 - needed as unique researcher ID (*ORCID iD*)
 - ORCID iD required by many journals and other tools: single account to access them all!!
- Academic / Research social network profiles

Social Networks for Researchers

OP

- [ResearchGate](#): ~LinkedIn for researchers
 - Link researchers by lab
 - Research spotlights
 - Direct messages
 - Q&A
 - Job Portal
 - Allows self-archiving (privately save a copy of papers):
 - “Request full-text” feature
 - One click request
 - One click send

R^G

Twitter



- Stay up to date with current trends on the field.
Follow:
 - Individual researchers
 - Research groups
 - Journals
 - Topic-specific accounts and TweetBots



Twitter



- Showcase your pubs: thread with key points
- Screening papers → “save for later”
 - Integration with [Instapaper](#), [Pocket](#)...
- People DO tweet in conferences:
 - Show your Twitter handle in your presentation → raise profile
- Active visibility, even just by mostly retweeting papers → community is aware of you

Tara Bartolec @TaraBartolec · Nov 17, 2022
@jasonkklow from @SydneySOLES created a vast resource of XLs for the human cell by XLing organelles with 3 different XLers - generating the largest #XLMS dataset to date for any species - almost 30,000 XLs for over 4000 proteins & 2000 PPIs! 3/14

28,910 unique residue pairs

Category	Count
Inter-protein	2,516
Intra-protein	26,394

2,110 protein-protein interactions

Category	Count
mean 1.8 URPs/interface	2,110

4,084 cross-linked proteins

Category	Count
subcellular location annotation	4,084
2,392 Nucleus	2,392
698 Mitochondrial	698
999 Lysosomal, peroxisomal, golgi	999
2,696 Cytosolic, microsome	2,696
+ 270 other	270

Tara Bartolec @TaraBartolec · Nov 17, 2022
Mapping to ~10000 experimental structures @rcsbPDB = vast majority of in vitro structures validated by our XLs - notably captured in proteins w/ native seqs, abundances, PTMs & cofactors. Those that differed usually represented interplay b/w structure & PTMs or complexes. 4/14

Variably satisfied
Never satisfied
Always satisfied

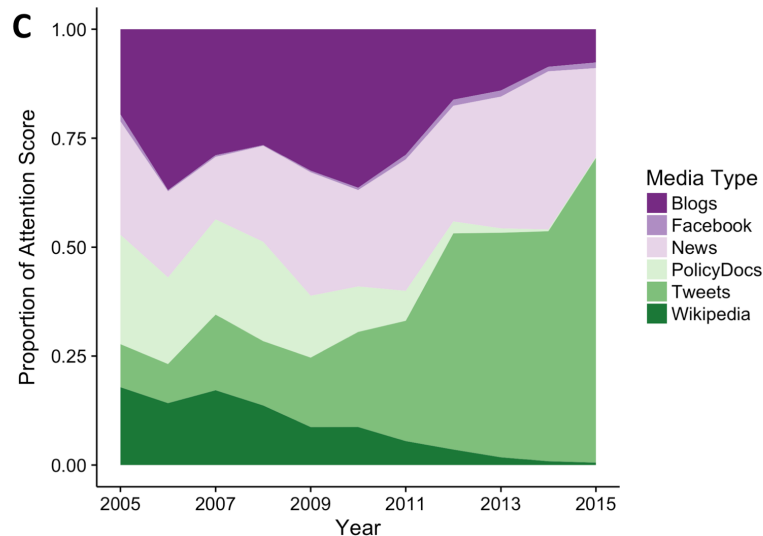
Protein PTM density

Tara Bartolec @TaraBartolec · Nov 17, 2022
But most XLs could NOT be mapped to the @rcsbPDB as most proteins are yet to be studied (or are recalcitrant to traditional structural biology techniques). The advent of #AlphaFold from @DeepMind has resulted in a significant expansion of the predicted structural proteome. 5/14

Twitter



- Tweets are the main component of Altmetrics Attention Score:
 - AAS correlated with number of citations



“**altmetrics** are non-traditional bibliometrics proposed as an alternative or complement to more traditional citation impact metrics, such as impact factor and h-index.”

Conference materials



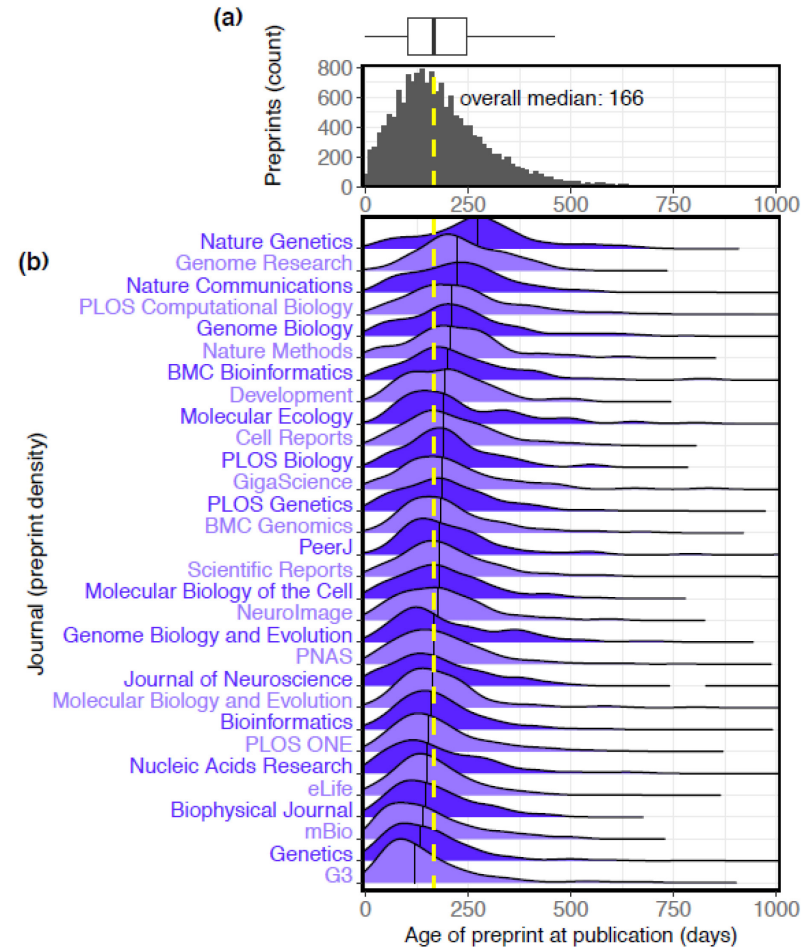
- “*What happens in the conference stays in the conference*”
- You can now “publish” your presentations and posters:
 - [F1000Research](#) ([presentation example](#)), [figshare](#) ([poster example](#))...
 - Make them public
 - Get a permanent, citable DOI
- Not necessary to make them available at time of conference
- Also for lectures, invited talks...
 - This presentation now publicly available ([10.6084/m9.figshare.7892453](https://doi.org/10.6084/m9.figshare.7892453))

Preprints

CS

Opn

- “review times at journals published by the Public Library of Science (PLOS) have doubled over the last decade (Hartgerink 2015)”
- Median time preprint to journal publication ~5.5 months (bioRxiv)
 - ECRs need to prove output in short times
- Specialised preprint repositories by discipline, e.g.:
 - [AgriXiv](#), [BioRxiv](#), [PaleorXiv](#), [PsyArXiv](#), [ChemRxiv](#), [EarthArXiv](#), [EngrXiv](#)...



Preprints

CS

Opn

- No need to wait for *ready-to-submit* version
 - OK for first polished drafts / alpha versions → journal invitation for submission
- Many journals accept submission via preprint service:
 - Some publishers will deposit the preprint during submission (if you want)
 - Some have created their own preprint servers
- Open access without paying:
 - Broader potential reader range
 - No paywall for readers
 - No OA fees for authors
- Link to the final paper once published



bioRxiv
THE PREPRINT SERVER FOR BIOLOGY

New Results

[Follow this preprint](#)

Genomic insights into the Archaea inhabiting an Australian radioactive legacy site

Xabier Vázquez-Campos, Andrew S. Kinsela, Mark W. Bligh, Timothy E. Payne,
Marc R. Wilkins, T. David Waite

doi: <https://doi.org/10.1101/728089>

Now published in *Frontiers in Microbiology* doi: 10.3389/fmicb.2021.732575



Materials and Methods matter

OP

CS

Opn

R

- Whatever you do to your samples, data... will affect your results
- M&M often overlooked 😞
 - Word limits by journals
 - Hard to follow or not explicit enough
 - Missing steps
- Explicit protocols / M&M more likely to be cited
 - *Easy* solution: Supplementary Information
 - Not always easy to access
 - SI often overlooked

Materials and Methods matter

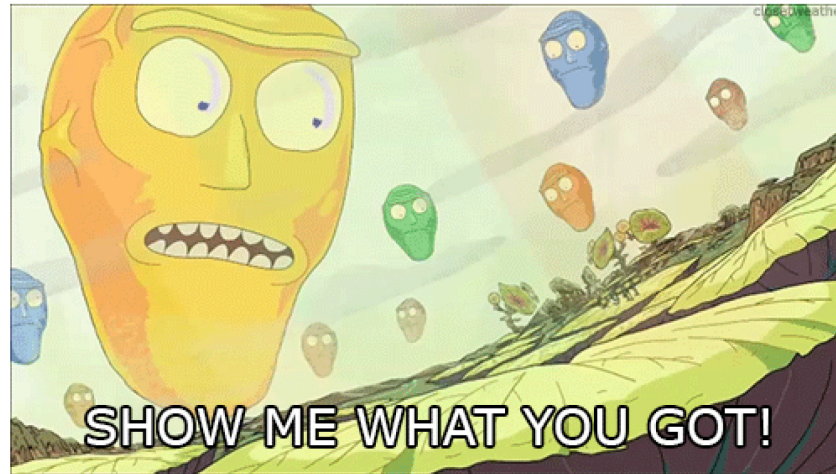
OP

CS

Opn

R

Solution:



Source: *Rick and Morty*, ep. 2x05 (2015)

Materials and Methods matter

OP

CS

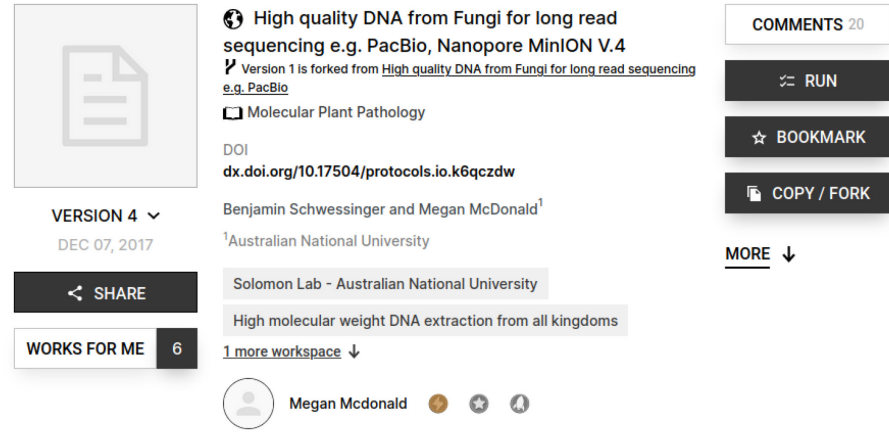
Opn

R


- [Protocols.io](https://protocols.io)

- Ideal for wet-lab
- Step-by-step protocols
- “Run” option: checklist of steps, built-in timer if required...
- Protocols can be forked and versioned
- Citable DOI and can link to publication if available

 protocols.io





The screenshot shows a protocol entry on the Protocols.io platform. On the left, there is a placeholder icon for a document and a 'VERSION 4' dropdown menu with the date 'DEC 07, 2017'. Below this is a 'SHARE' button and a 'WORKS FOR ME' button with a count of '6'. The main content area on the right features a title 'High quality DNA from Fungi for long read sequencing e.g. PacBio, Nanopore MinION V.4', a version note, a DOI link, the author 'Benjamin Schwessinger and Megan McDonald', and the affiliation 'Solomon Lab - Australian National University'. It also includes a description of the protocol, a '1 more workspace' link, and a list of users who have interacted with the protocol, including Megan McDonald. On the far right, there are buttons for 'COMMENTS 20', 'RUN', 'BOOKMARK', and 'COPY / FORK', along with a 'MORE' dropdown arrow.



VERSION 4 ▾
DEC 07, 2017

SHARE

WORKS FOR ME 6

 High quality DNA from Fungi for long read sequencing e.g. PacBio, Nanopore MinION V.4
Version 1 is forked from [High quality DNA from Fungi for long read sequencing e.g. PacBio](#)
 Molecular Plant Pathology





DOI
dx.doi.org/10.17504/protocols.io.k6qczdww

Benjamin Schwessinger and Megan McDonald¹
¹Australian National University

Solomon Lab - Australian National University

High molecular weight DNA extraction from all kingdoms


[1 more workspace](#) ▾

 Megan McDonald   

COMMENTS 20

RUN

☆ BOOKMARK

 COPY / FORK

MORE ▾

Materials and Methods matter

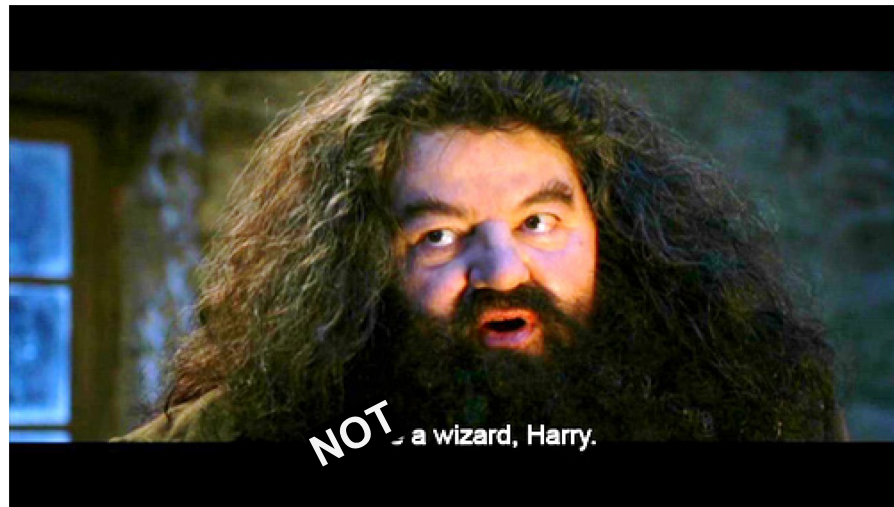
OP

CS

Opn

R

- Computational code:
 - [GitHub](#), [Bitbucket](#)...
 - Code in SI not easy to access, some journals don't like "plain text" files
- No reason to say in the methods:
"with a custom-made script"



Source: *Harry Potter and the Sorcerer's Stone*
(2001)

Results, SI and raw data



- More Results in papers
 - *“another [study] found a two- to four-fold increase in the amount of data required for publication in top journals between 1984 and 2014 (Vale 2015).”*
- Much of the results are never discussed in detail in papers or not at all!
 - Might be of interest for other researchers
- SI can be limiting, or just annoying to upload to journals
- Raw / pre-processed data might not fit any database for its deposit

Results, SI and raw data



- Depending on journals for SI not flexible
- Solution: upload your stuff independently somewhere else, e.g.
 - **figshare**, Zenodo...
 - Version controlled
 - Preview for some file types
 - Can store snapshots of code repositories, e.g. GitHub

Results, SI and raw data



- [figshare](#):
 - Ideal for typical SI
 - Used by some journals, e.g. PLOS
- [Zenodo](#):
 - Large capacity: up to “50GB per dataset”
 - Ideal for complex SI, “high” volume of data, raw data...
 - Non-publication stuff, e.g. workshop data/materials ([example](#))



Reviews

OP

CS

Opn

- Classic research / academy community service:
 - Hard to provide evidence or keep track of your activity
- [Publons](#):
 - Profile as reviewer (use your ORCID iD!!)
 - Now integrated in Web of Science
 - Publishers send your activity directly to WoS → Provides evidence of your service
 - Tracks the journals you have reviewed for
 - Tracks the papers you reviewed

publons

▼ Peer review (32 reviews for 13 publications/grants)

► Review activity for **Astrobiology**. (3)

► Review activity for **BMC bioinformatics**. (2)

► Review activity for **Environmental science & technology**. (14)

Documents

Peer Review

Verified peer reviews

8 **Environmental Science & Technology**

3 **Astrobiology**

2 **Microbiome**

Summary

- Plenty of online resources to make your research and yourself noticed in a research context
- Preprints accelerate output of results (key for ECR)
- Academic community service:
 - More than reviewing or being part of academic societies

Thank you for your attention

Questions / Open discussion

Other resources

- On Twitter and related:
 - Henrique da Mota, L. M., Marques Negrisolli, M. L., de Azevedo Lopes, E., & Pires de Albuquerque, C. (2023). Turning your paper into a digital influencer. *Joint Bone Spine*, 90(4), 105573. <https://doi.org/10/gsh782>
 - Power, B. J. (2022). How to use Twitter at a Scientific Conference. *mSphere*, 7(3), e00121-22. <https://10/gsh782>
 - Eysenbach, G. (2011). Can tweets predict citations? Metrics of social impact based on twitter and correlation with traditional metrics of scientific impact. *Journal of Medical Internet Research*, 13(4). <https://doi.org/10.2196/jmir.2012>
- On preprints:
 - Sarabipour *et al.* (2019). On the value of preprints: An early career researcher perspective. *PLOS Biology*, 17(2), e3000151. <https://doi.org/10.1371/journal.pbio.3000151>
- On post-publication peer reviews:
 - Experts' Take on Post-publication Peer Review. (2015, November 2). *Enago Academy* website: <https://www.enago.com/academy/experts-take-on-post-publication-peer-review/>
 - PubPeer 2.0: Post-Publication Peer Review. (2017, October 30). *Enago Academy* website: <https://www.enago.com/academy/pubpeer-2-0-post-publication-peer-review/>
- On preprint peer reviews:
 - Burgess, S. (2019, January 8). On preprints and journal clubs. *ecrLife* website: <http://ecrlife.org/2019/01/08/on-preprints-and-journal-clubs/>
 - Preprint journal clubs. (2016, December 11). *ASAPbio* website: <https://asapbio.org/preprint-journal-clubs>
 - Avasthi, *et al.* (2018). Journal clubs in the time of preprints. *ELife*, 7, e38532. <https://doi.org/10/gdm89h>