

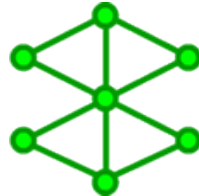
School of Biotechnology and Biomolecular Sciences

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

*Water Research Centre Research Seminar*

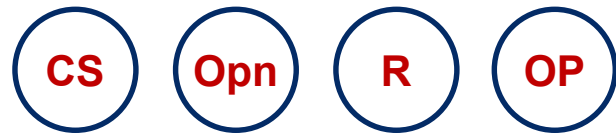
Xabier Vázquez-Campos

27 March 2019



SYSTEMS BIOLOGY  
INITIATIVE

# 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.
    - Now required by many journals and other academic tools (single account to access them all)
- Academic / Research social network profiles

# Social Networks for Researchers



- Academia.edu: highly monetised, a lot of content requires “premium” access...
- [ResearchGate](#): ~LinkedIn for researchers
  - Organise pubs by projects
  - Link researchers by lab
  - Q&A
  - Job Portal
  - Paywalled papers: “Request full-text” feature:
    - One click request
    - Upload paper privately only once (option of private storage)
    - One click send

R<sup>G</sup>

# Twitter



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



# Twitter

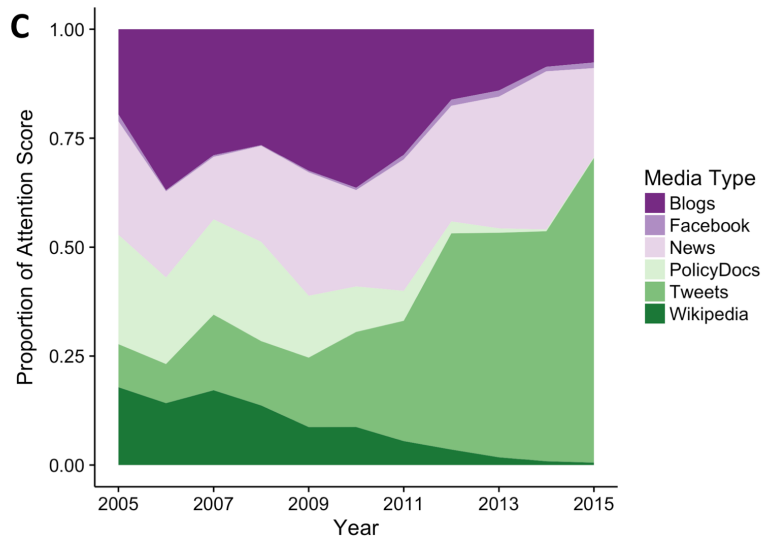


- Screening papers → “save for later”
  - Integration with [Instapaper](#), [Pocket](#)...
- People DO tweet in conferences:
  - Show your Twitter handle in your presentation → raise profile
- Active visibility, even just by mostly retweeting papers  
→ community is aware of you

# 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))

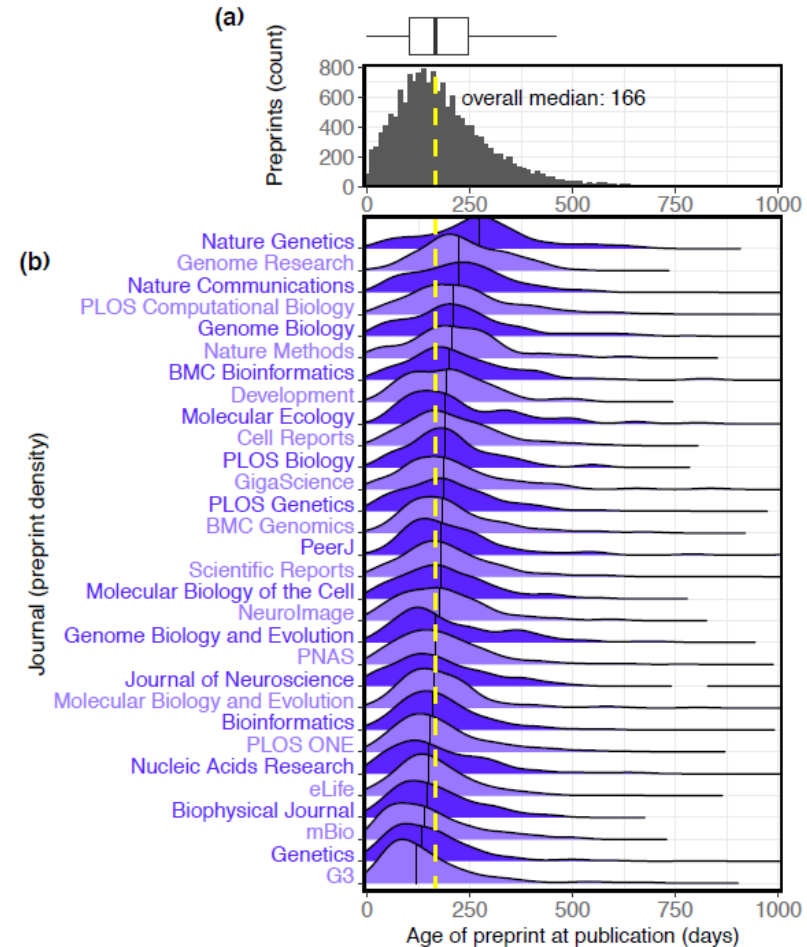


# Preprints

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)
  - ECR 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:
  - Often easier than direct submission through publishers
- Open access without paying:
  - Broader potential reader range
    - No paywall for readers
    - No OA fees for authors
- Link to the final paper once published



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**Response of microbial community function to fluctuating geochemical conditions within a legacy radioactive waste trench environment**

Xavier Vázquez-Campos, Andrew S. Kinsela, Mark W. Bligh, Jennifer J. Harrison, Timothy E. Payne, T. David Waite

doi: <https://doi.org/10.1101/121376>

Now published in *Applied and Environmental Microbiology* doi: 10.1128/AEM.00729-17

# ***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

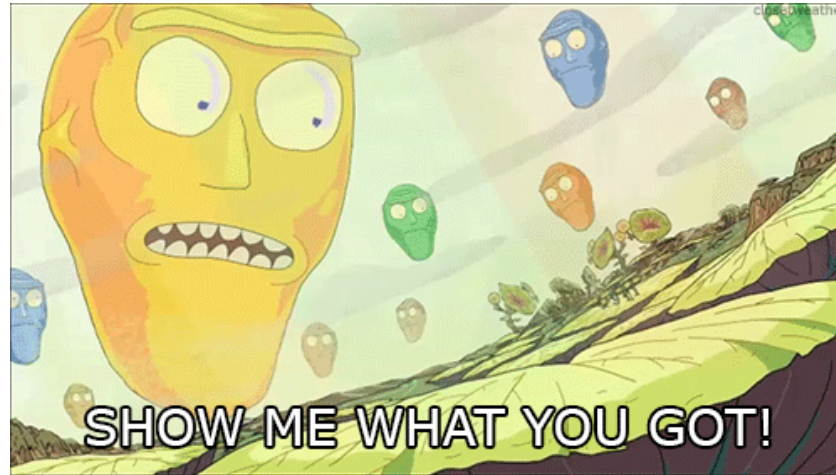
OP

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
  - DOI and link to publication if available



# Materials and Methods matter

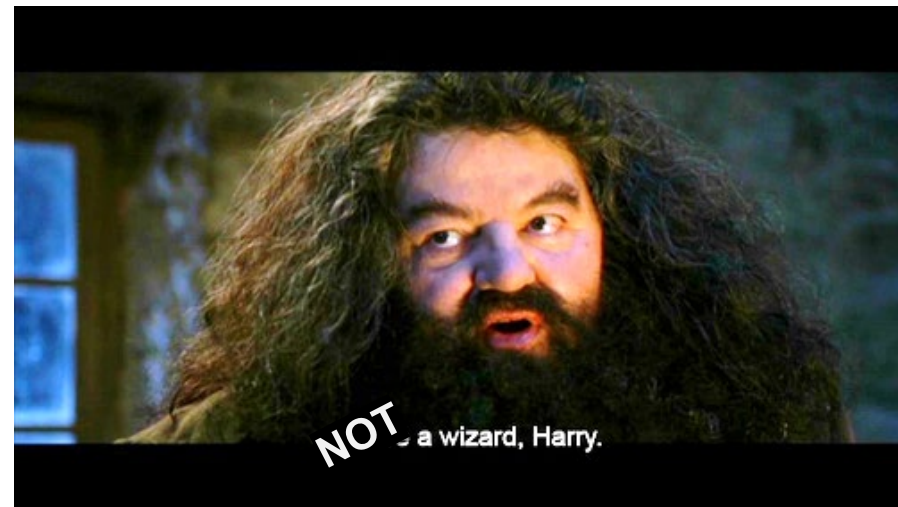
OP

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, i.e. 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
  - Reviews confirmed by publishers → Provides evidence of your service
  - Tracks the journals you have reviewed for
  - Tracks the papers you reviewed:
    - You can get notified when they are finally published



# Summary

- Plenty of online resources to make 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 Tweeter:
  - 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>