

Easy steps towards open scholarship

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Knowing how and where to share your research may still seem a daunting task given the variety of channels. [Ross Mounce](#), Community Coordinator for Open Science at the [Open Knowledge Foundation](#), presents the best ways to ensure discoverable access to research outputs. He highlights the metadata power of institutional repositories and other services like Zenodo. With a combination of preprint & postprint postings, it is easy to make your research freely available.



Recently I tried to explain on twitter in a few tweets how everyone can take easy steps towards open scholarship with their own work. It's really not that hard and potentially very beneficial for your own career progress – open practices enable people to read & re-use your work, rather than let it gather dust unread and undiscovered in a limited access venue as is traditional. For clarity I've rewritten the ethos of those tweets below:

Step 1: before submitting to a journal or [peer-review service](#) upload your manuscript to a public preprint server

Step 2: after your research is accepted for publication, deposit all the outputs – full-text, data & code in subject or institutional repositories

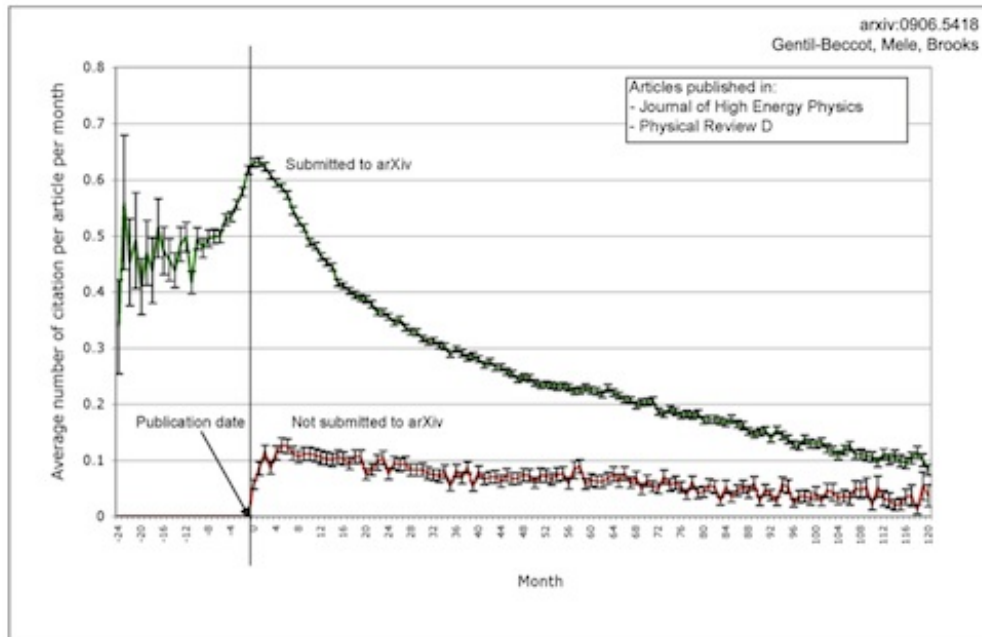
The above is the concise form of it, but as with everything in life there is devil in the detail, and much to explain, so I will elaborate upon these steps in this post.

Step 1: Preprints

Uploading a preprint before submission is *technically* very easy to do – it takes just a few clicks, but the barrier that prevents many from doing this *in practice* is cultural and psychological. In disciplines like physics it's completely normal to upload preprints to [arXiv.org](#) and their submission to a journal in some cases has [more to do with satisfying the requirements of the Research Excellence Framework](#) exercise than any real desire to see it in a journal. Many preprints on arXiv get cited and are valued scientific contributions, even [without them ever being published in a journal](#). That said, even within this community [author perceptions differ as to the exact practice of when to upload a preprint](#) in the publication cycle.

Within biology it's relatively unheard of to upload a preprint before submission but that's likely to change this year because of an [excellent well-put article advocating their use in biology](#) and the [very many different outlets available for them](#). My own experience of this has been illuminating – I recently co-authored a paper openly on [github](#) and the preprint was made available with a citable DOI via [figshare](#). We've received a nice comment, more than 250 views and a citation from another [preprint](#). All *before* our paper has been 'published' in the traditional sense. I hope this illustrates well how open practices really do accelerate progress.

This is not a one-off occurrence either. As with [open access papers](#), freely accessible [preprints have a clear citation advantage](#) over traditional subscription access papers:



Outside of the natural sciences the situation is also similar; Martin Fenner [notes](#) that in the social sciences (SSRN) and economics (RePEc) preprints are also common either in this guise, or as ‘working papers’ – the name may be different but the pre-submission accessibility is the same. Yet I suspect, like in biology, this practice isn’t yet mainstream in the Arts & Humanities – perhaps just a matter of time before this cultural shift occurs (more on this later on in the post...)?

There is one important caveat to mention with respect to posting preprints – a small minority of conservative, traditional journals will not accept articles that have been posted online prior to submission. You might well want to check [Sherpa/RoMEo](#) before you upload your preprint to ensure that your preferred destination journal accepts preprint submissions. There is an increasing grass-roots led trend apparent to [convince these journals that preprint submissions should be allowed](#), of which some have already [succeeded](#).

If even much-loathed publishers like [Elsevier allow preprints, unconditionally](#), I think it goes to show how rather uncontroversial preprints are. Prior to submission it’s your work and you can put it anywhere you wish.

Step 2: Postprints

Unlike with preprints, the postprint situation is a little trickier. Publishers like to think that they have the exclusive right to publish *your* peer-reviewed work. The exact terms of these agreements will vary from journal to journal depending on the [exact terms of the copyright or licencing agreement](#) you might have signed. Some publishers try to enforce ‘embargoes’ upon postprints, to maintain the artificial scarcity of your work and their monopoly of control over access to it. But rest assured, at some point, often just 12 months after publication, you’ll be ‘allowed’ to upload copies of your work to the public internet (again [SHERPA/RoMEO](#) gives excellent information with respect to this).

So, assuming you already have some form of research output(s) to show for your work, you’ll want these to be discoverable, readable and re-usable by others – after all, what’s the point of doing research if no-one knows about it! If you’ve invested a significant amount of time writing a publication, gathering data, or developing software – you want people to be able to read and use this output. [All outputs are important, not just publications](#). If you’ve published a paper in a traditional subscription access journal, then most of the world can’t read it. But, you *can* make a postprint of that work available, subject to the legal nonsense referred to above.

If it’s allowed, why don’t more people do it?

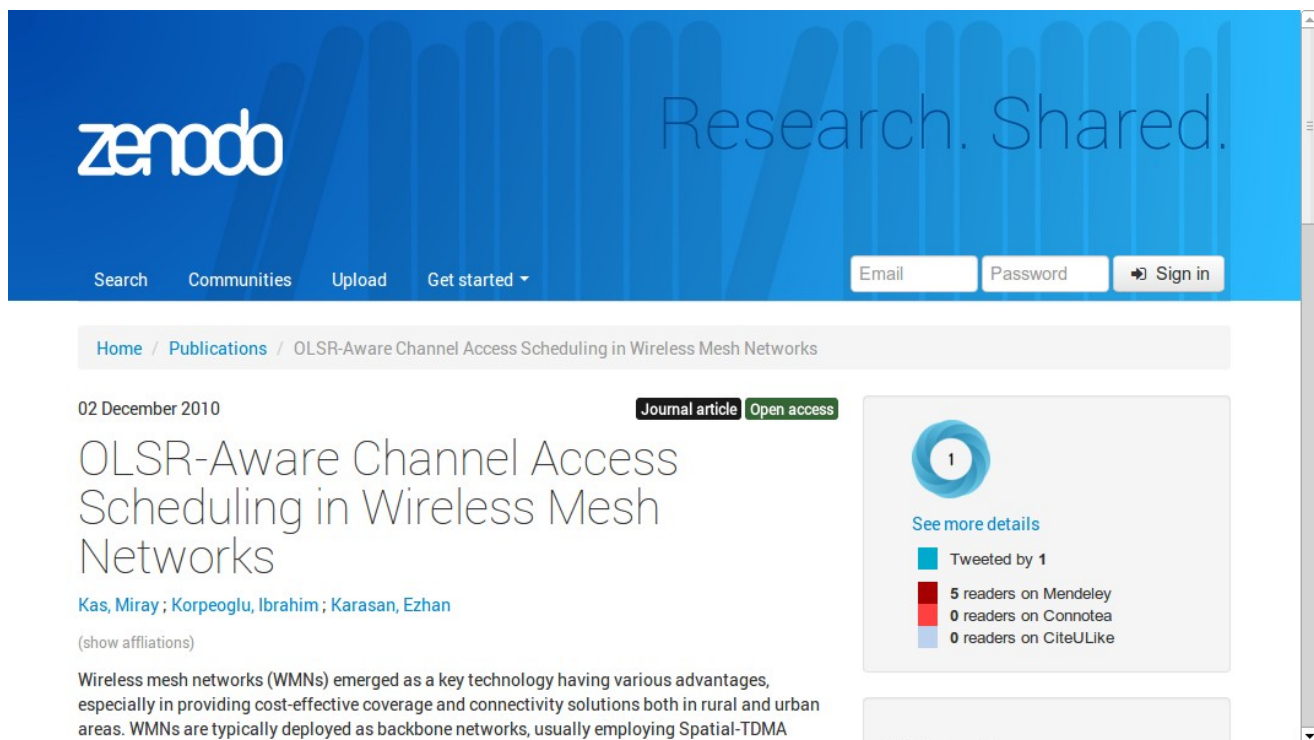
Similar to the cultural issues discussed with preprints, for some reason, researchers on the whole don’t tend to use

institutional repositories (IR) to make their work more widely available. [My IR](#) at the University of Bath lists metadata for over 3300 published papers, yet relatively few of those metadata records have a fulltext copy of the item deposited with them for various reasons. Just ~6.9% of records have fulltext deposits, as published [back in June 2011](#).

I think it's because institutional repositories have an image problem: some are functional but [extremely drab](#). I also hear of researchers full of disdain who say of their IR's (I paraphrase):

“Oh, that thing? Isn't that just for theses & dissertations – you wouldn't put proper research there”

All this is set to change though as researchers are [increasingly being mandated](#) to deposit their fulltext outputs in IR's. One particular noteworthy driver of change in this realm could be the newly-launched [Zenodo](#) service. Unlike [Academia.edu](#) or [ResearchGate](#) which are for-profit operations, and are really just websites in many respects; Zenodo is a proper repository – it supports [harvesting of content via the OAI-PMH](#) protocol and all metadata about the content is [CC0](#), and it's a not-for-profit operation. Crucially, it provides a repository for academics less well-served by the existing repository systems – not all research institutions have a repository, and independent or retired scholars also need a discoverable place to put their postprints. I think the attractive, modern-look, and altmetrics to demonstrate impact will also add that missing 'sex appeal' to provide the extra incentive to upload.



The screenshot shows the Zenodo website interface. At the top, the Zenodo logo is on the left, and the tagline "Research. Shared." is on the right. Below the logo are navigation links: Search, Communities, Upload, and Get started. On the right side of the header are input fields for Email and Password, and a Sign in button. The main content area shows a breadcrumb trail: Home / Publications / OLSR-Aware Channel Access Scheduling in Wireless Mesh Networks. Below this is the date "02 December 2010" and labels "Journal article" and "Open access". The title of the article is "OLSR-Aware Channel Access Scheduling in Wireless Mesh Networks" by "Kas, Miray ; Korpeoglu, Ibrahim ; Karasan, Ezhan". There is a link "(show affiliations)". A short abstract follows: "Wireless mesh networks (WMNs) emerged as a key technology having various advantages, especially in providing cost-effective coverage and connectivity solutions both in rural and urban areas. WMNs are typically deployed as backbone networks, usually employing Spatial-TDMA". On the right side, there is a circular badge with the number "1" and a "See more details" link. Below this are social media statistics: "Tweeted by 1", "5 readers on Mendeley", "0 readers on Connotea", and "0 readers on CiteULike".

Providing Access to Your Published Research Data Benefits You

A new [preprint on PeerJ](#) shows that papers with associated open research data have a citation advantage. Furthermore other research has shown that [willingness to share research data is related to the strength of the evidence and the quality of the results](#). Traditional repository software was designed around handling metadata records and publications. They don't tend to be great at storing or visualizing research data. But a new development in this arena is the use of [CKAN software for research data management](#). Originally CKAN was developed by the [Open Knowledge Foundation](#) to help make open government data more discoverable and usable; the [UK](#), [US](#), and governments around the world now use this technology to make data available. Now research institutions like the

[University of Lincoln](#) are also using this tool for *research* data management, and like Zenodo the interface is clean, modern and provides excellent discoverability.



Repositories are superior for enabling discovery of your work

Even though I use Academia.edu & ResearchGate myself. They're not perfect solutions. If someone is looking for *your* papers, or a *particular* paper that you wrote these websites do well in making your output discoverable for these types of searches from a simple Google search. But interestingly, for more complex queries, these simple websites don't provide good discoverability.

An example: I have a fulltext copy of [my Nature letter on Academia.edu](#), it [can't be found from Google Scholar](#) – but the copy in my institutional repository at Bath [can](#). This is the immense value of interoperable and open metadata. Academics would do well to think closely about how this affects the discoverability of their work online.

The technology for searching across repositories for freely accessible postprints isn't as good as I'd want it to be. But repository search engines like [BASE](#), [CORE](#) and [Repository Search](#) are improving day by day. Hopefully, one day we'll have a working system where you can paste-in a DOI and it'll take you to a freely available postprint copy of the work; Jez Cope has an excellent demo of this [here](#).

Open scholarship is now open to all

So, if there aren't any suitable fee-free journals in your subject area (1), you find you don't have funds to publish a gold open access article (2), and you aren't eligible for an OA fee waiver (3), fear not. With a combination of preprint & postprint postings, you too can make your research freely available online, even if it has the misfortune to be published in a traditional subscription access journal. Upload your work today!

Note: This article gives the views of the author, and not the position of the Impact of Social Science blog, nor of the London School of Economics.

About the Author

Ross Mounce is Community Coordinator for Open Science at the Open Knowledge Foundation and a PhD student at the University of Bath. He blogs at <http://rossmounce.co.uk/> and can be found on Twitter at [@rmounce](#).

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