#### Know the benefits of data sharing and any requirements for it

… since data sharing may increase the impact of your research and data sharing may be required



Potential benefits of data sharing

* increase the citation rate to your publication ([Piwowar et al.](http://www.plosone.org/article/info%3Adoi/10.1371/journal.pone.0000308), 2007)
* facilitate new scientific inquiry and collaborations
* avoid duplicate data collection
* provide rich, real-life resources for education
* promote scientific transparency and accountability
* archive data in a reliable public database

#### Target your research community and use a reliable and supported system for data sharing

… to help colleagues find, obtain, and use your data

|  |  |
| --- | --- |
| **Approach to data sharing** | **Details** |
| Share-upon-request | Announce that your data is available for sharing and then email a copy to requestors |
| Self-archive | Upload data to your research or institutional website and permit downloads |
| Publish data in a journal | Publish data as supplementary online materials |
| Deposit data into an archive or repository[(?)](https://sites.google.com/site/managescientificdata/archive) at your institution  | For example, [Merritt](http://www.cdlib.org/services/uc3/merritt/index.html) is a cost-effective repository service from the University of California Curation Center (UC3) that allows the UC community to manage, archive, and share its digital content.Additionally, try [Dash](http://dash.berkeley.edu/), a self-service tool for publishing data sets online through the UC Berkeley Library. |
| Deposit data into a public archive or repository that is:* popular with your research community
* discipline- or domain-specific
* has national or global coverage
 | By sharing data on a reliable system that is popular among your research colleagues, you may improve the exposure of your data and maximize research impact.Ask your colleagues where they deposit their data, and share data where they're sharing theirs.You can find subject-specific archives and repositories in these directories:* [Archives and Repositories for Data](http://www.lib.umn.edu/datamanagement/datacenters) (University of Minnesota Libraries)
* [re3data.org](http://www.re3data.org/)
* [Data Repositories](http://oad.simmons.edu/oadwiki/Data_repositories) (Simmons University)
 |

Based on [Vision et al. (2011)](https://docs.google.com/document/pub?id=1JuGwQ93uAAlGYy_KOXB7UzKttooIvHK46cUp0AzooCo)

**Tip**

* If you share data, explain in your publications how readers may obtain a copy.

#### Assign permanent identifiers to data

... to help researchers find your digital files

One option is a DOI

* A DOI generally looks like this: 10.1126/science.331.6018.692
* It is a permanent identification system for your digital files.  Think of it as a unique identification number for your file.

Find a file by its DOI

* In a web browser, enter http://dx.doi.org/ followed by the DOI name.  This URL will direct you to the file location.
	+ For example, <http://dx.doi.org/10.1126/science.331.6018.692>
* This works because DOIs have descriptive details of the file associated with them including the location details.

DOIs are more stable links to your file

* A file's location/URL may change, but its DOI remains the same.
* So when a file is moved, the reader will be re-directed to the new location if the DOI details are updated with its new URL.

Generating DOIs

* UC Berkeley researchers may use the [EZID service](http://www.cdlib.org/uc3/ezid/) to create DOIs.  EZID also generates [ARKs](http://ezid.cdlib.org/home/understanding), which are an alternative permanent identifier system.
* Berkeley researchers can request a free account through [Research Data Management Consulting](http://researchdata.berkeley.edu/consulting).

#### Share data selectively

… so researchers find what’s important



Share the best version of your data or files. Consider whether preliminary analyses or drafts will be necessary or helpful.

Be cautious of sharing confidential, private, personal, or proprietary information.

#### Share data within ethical and legal requirements

… for responsible research practice

* Protect the privacy and confidentiality of research subjects
* Protect national security
* Protect proprietary information
* Comply with regulations under HIPAA, Institutional Review Boards, and other ethical research requirements
* Follow all obligations toward research participants, colleagues, research funders, and institutions

#### Share data through open access

... to maximize access and re-use by other researchers

When data is open access, they are digital, online, free of charge, and free of most copyright and licensing restrictions for other researchers.

This sense of openness may encourage data re-use and improve the citations to your work and the research impact ([Piwowar et al.](http://www.plosone.org/article/info%3Adoi/10.1371/journal.pone.0000308), 2007).

To share your data through open access:

* Store your data in an open access archive or repository
* Alternatively, upload your data online with a statement or license that [grants open access permissions](http://libweb.uoregon.edu/datamanagement/sharingdata.html#three).
	+ To grant unlimited use of your data for any purpose, use a [CC0 Declaration](http://creativecommons.org/choose/zero) or an [Open Data Commons Public Domain Dedication & License](http://opendatacommons.org/licenses/).

#### Try online collaboration services to share data within your research team

... it will be easier for your team to view and edit the data together

There are online services that let you upload research materials so that they are viewable in a web browser.  You can then create accounts for your team members so they can make changes to these files collaboratively.

Sample online collaboration services

* [bDrive and the bConnected suite](http://bconnected.berkeley.edu/) at UC Berkeley
* [Box](https://berkeley.app.box.com/login) at UC Berkeley
* Third party [online data sharing services](http://www.readwriteweb.com/biz/2011/06/8-simple-ways-to-share-data-on.php)
(With third party online services, avoid loading personal, confidential, or sensitive information.)

## What is?

[ORCID](http://orcid.org/) = **Open Researcher and Contributor ID**. Free registration of nonproprietary name code for contributor / author identification. On 16 October 2012, ORCID launched its registry services and started issuing user identifier.

The aim of ORCID is to aid "the transition from science to e-Science, wherein scholarly publications can be mined to spot links and ideas hidden in the ever-growing volume of scholarly literature". Can be used to provide each researcher with "a constantly updated ‘digital curriculum vitae’ providing a picture of his or her contributions to science going far beyond the simple publication list."

It has been noted in an [editorial](http://en.wikipedia.org/wiki/Editorial) in [*Nature*](http://en.wikipedia.org/wiki/Nature_%28journal%29) that ORCID, in addition to tagging the contributions that scientists make to papers, "could also be assigned to data sets they helped to generate, comments on their colleagues’ blog posts or unpublished draft papers, edits of Wikipedia entries and much else besides"

[Digital Object Identifier: DOI.](http://www.doi.org/)

**What is a digital object identifier, or DOI?**

[APA Style website.](http://www.apastyle.org/learn/faqs/what-is-doi.aspx)

A digital object identifier (DOI) is a unique alphanumeric string assigned by a registration agency (the International DOI Foundation) to identify content and provide a persistent link to its location on the Internet. The publisher assigns a DOI when your article is published and made available electronically.

All DOI numbers begin with a *10* and contain a prefix and a suffix separated by a slash. The prefix is a unique number of four or more digits assigned to organizations; the suffix is assigned by the publisher and was designed to be flexible with publisher identification standards.

We recommend that when DOIs are available, you include them for both print and electronic sources. The DOI is typically located on the first page of the electronic journal article, near the copyright notice. The DOI can also be found on the database landing page for the article.

**A Beginner’s Guide to Establishing a Professional Online Presence**

While it may seem like everyone is connected with all the “musts” of online networking and social media, there are plenty of stragglers who are not there yet. I know, because I recently was one of them.

At GradHacker, we’ve written about digital identity and online presence many times (linked throughout this article) and even held a[bootcamp](http://www.gradhacker.org/2011/06/01/gradhackers-first-bootcamp/) on the topic, because it’s that important! I’ve put together an overview of some of the most popular social networks used by academics and other ways for establishing an online presence—and if you aren’t sure why you should even be creating an online identity, start[here](http://www.gradhacker.org/2013/03/20/manage-your-digital-identity/).

**Twitter**

My naïve impression of Twitter was that it existed as a minute-by-minute record of people’s everyday lives. While it can be that for some, it can also be a lot more. Somehow I thought that by not joining, I was resisting the urge of our digital culture’s desire to be ever-connected. For anyone who has been turned off by Facebook and thinks Twitter is just more of the same—trust me, it’s so much better! When I finally joined a couple months ago I realized that, by refusing to join, I was missing out on being a part of an online community that was talking about interesting ideas, asking questions, and sharing awesome research. GradHacker has written previously about a lot of[great uses for Twitter](http://www.gradhacker.org/2011/06/13/twitter-literate/) in grad school. Once you sign up (because you really should), read this[previous GradHacker post](http://www.gradhacker.org/2012/03/07/your-academic-twidentity-or-more-about-twiter-and-academic-identity/) on how you can use Twitter to increase your online presence and interact with others in your field. If you aren’t crazy about the idea of sending your thoughts out to the Twitterverse, that’s ok. Follow the accounts of colleagues, leaders in your field, and news sources as a great way to keep up with current trends in media and stay connected with what others are talking about.

**LinkedIn**

[LinkedIn](https://www.linkedin.com/) is another site that I am new to in the past few months. I’d heard of it, but didn’t figure that anyone actually used it. After going to two different career workshops within a week of each other where the panelists recommended LinkedIn, I figured I’d finally see what it was all about. Like Twitter, once I finally connected I realized there was a lot more to it than I had previously assumed. If you aren’t sure what the website is, your profile is basically an online resume. LinkedIn is geared toward all professions, but is mostly business-oriented. You can connect with others to build a network, join groups of common interests, and also follow organizations or institutions to keep up with job postings or events. I have searched for people on the site and been surprised to find we have a common connection in our networks that could facilitate an introduction. People have differing opinions on how generous to be with your network as far as accepting or sending invites to individuals you don’t personally know—read about tips for when to[accept](https://www.linkedin.com/pulse/article/20140506113910-43645946-why-you-should-connect-with-people-you-don-t-know-on-linkedin) or[send](http://www.huffingtonpost.com/andrea-smith/5-tips-for-connecting-linkedin_b_4890867.html) invites to strangers. But remember that LinkedIn is not Facebook (remember bragging rights for the biggest friends list?), and who you are connected to may reflect on you professionally.

**ResearchGate**

[ResearchGate](http://www.researchgate.net/) is a network specifically created for scientists—it was actually referred to as “Facebook for scientists” in a recent Science Careers[article](http://sciencecareers.sciencemag.org/career_magazine/previous_issues/articles/2014_08_25/caredit.a1400214). Its goal is to help researchers connect with each other, share publications, and ask questions. The website boasts over 5 million members, so chances are your colleagues are already using it. You must have an active university email account to sign up, so it is limited to active researchers. One of the great things about ResearchGate is its Q&A forums. Users can post questions about techniques, theory, ethics, or anything else science related and get input from other researchers from around the world. Members on ResearchGate are fairly active and engage in the online discussions, and I have used tips from the forums in my own research in the past. Also useful, ResearchGate provides you with profile stats—it lets you know who has looked at and cited your papers, and how many times your publications have been downloaded.

**Academia.edu**

With over 17 million users,[Academia.edu](http://www.academia.edu/) is one of the largest academic social networks. It allows anyone to join, unlike ResearchGate, and is more popular for the humanities. Its goal is to create a way for academics to share their work—to seek peer review for manuscript drafts, and to provide the paper for others once it’s published. It also lets you track profile views, downloads, and learn what search terms landed someone on your profile. Academia.edu also offers the ability to post questions on the site, though it isn’t as active as the ResearchGate forums. While the goal of the website is to offer free, open-access publications, you do have to sign up before you can download any files.

**Mendeley**

[Mendeley](http://www.mendeley.com/) shouldn’t be mistaken for just a reference manager—it is one of the world’s largest research databases and is also a social network for scientists. Its simple profile page lets you list publications, grants, and info from your CV. Similar to the other sites, Mendeley lets you upload papers, and follow and connect with people in your field. It also suggests papers that might interest you based on your own library. Mendeley is a great way to stay up-to-date on research trends in your field—by joining a topic group, you can get updates on interesting papers and discuss them with other academics.

**Personal website/blog**

Personal websites or blogs can also be great tools for establishing a professional presence online[for both faculty and grad students](https://labandfield.wordpress.com/2013/06/19/personal-academic-websites-for-faculty-grad-students-the-why-what-and-how/). The flexibility of designing it yourself allows you to decide what information you would like to share. Having your own website can also improve your chances of being found by employers searching for you online, which seems to be happening more and more. It lets you create a space where you can provide a biography, a professional objective statement, links to papers, and other resources to supplement and personalize your CV or resume. It can also be a central source for links to all of your other online networks such as those listed above. This can be a static (but up-to-date) website, but a blog can also be a great way to show active engagement in your scientific community or with the rest of the public.

Of course, it’s not necessary to have a profile on every possible website. It’s much more effective to have a couple updated and active networks than a bunch of neglected ones. Combine a couple to make the most of their different tools. The best sites will likely differ depending on what field you are in. A recent[Nature news article](http://www.nature.com/news/online-collaboration-scientists-and-the-social-network-1.15711) explored how each of these sites are used by scientists and how their popularity differs across fields.

There are a few things to keep in mind regardless of which networking tools you use:

1.       **Be professional** – You may already have a Twitter account for personal use, but what impression would it give to a potential grad school or post-doc mentor?

2.       **Follow copyright laws** – Many of these sites allow you to upload publications, but it is up to you to be aware of whether or not this violates rules of your publisher.

3.       **Be consistent** – With so many options for building your online presence, it is important to be consistent across sites. Learn more about branding yourself online in a previous GradHacker[post](http://www.gradhacker.org/2012/01/20/branding-yourself-not-as-painful-as-you-think/).

4.       **Maintain control**– Once you establish your online identity, make sure you[keep it protected](http://www.gradhacker.org/2014/02/24/reassessing-my-digital-identity/).

How do you use the websites above to maintain a professional presence online?