How to close the digital divide among scientists

Martin Fenner, Gobbledygook

June 14, 2009

The term digital divide usually describes the troubling gap between those who use computers and the Internet and those who do not (Wikipedia). Many if not most scientists are experienced users of computers and the internet, and use email or public databases such as PubMed on a daily basis. But few scientists regularly use Web 2.0 tools, which would include both general tools such as Twitter, FriendFeed or Facebook, as well as tools specifically targeted at scientists (and this would of course include Nature Network).

Regular readers of this blog know that I am fascinated by technology, especially if this technology makes it easier to publish scientific papers. And like others I sometimes get carried away (Google Wave is a good recent example). Even among those scientists open to blogs, wikis, etc., not everybody wants to follow every technology trend. This could simply be because that would take too much time, but most people probably just don't care that much about technology.

So what can we do about this digital divide among scientists? Science is often very specialized, and sometimes only a few people participate in a discussion about a particular topic. Tim O'Reilly has coined the term alpha geek for people that are the first to use new technologies, and there certainly is a place for science alpha geeks. But Science Online is about science communication, and communication tools that are used by only a handful of people usually don't fulfill their purpose.

One easy solution would be to simply wait 10-20 years until most senior scientists are digital natives (those that have grown up with digital technology such as computers, the Internet or mobile phones), but that seems to be an awfully long time for something this important.

We could build better tools. Good tools simply work and don't need a lot of explanations. For me Papers is such a tool, but strictly speaking not really Web 2.0, because it has no collaboration features. Google Wave could be another example, but only the next few months will tell. What makes a good Web 2.0 tool for scientists? Most importantly, that the tool solves an important everyday problem. Equally important, that there aren't high hurdles in using this tool in terms of cost and learning curve. Another hurdle: some Web 2.0 tools only start to become useful once they have signed up a large enough number of users.

But we also need to do more to communicate the usefulness of online tools for scientists. The original definition of the digital divide has a negative meaning and everybody probably agrees that we should at least try to overcome this divide. Although there certainly is also a digital divide among scientists, the general perception is probably not that those scientists that are not Web 2.0-savvy are at a disadvantage. We should have a much closer look at the tools that are currently available, define the scenarios where they can be useful, and focus on that. We talk too much about the details, technical or otherwise. One example: most scientists probably want to have an idea of when an online reference manager can be helpful rather than the tools they currently use, rather than discuss the subtle differences between the very similar CiteULike, Connotea, and 2collab. Part of the problem is that people want to make money with their Web 2.0 tools for scientists, but forget that collaboration is more important than competition when the market still has to grow and is currently probably too small for viable business opportunities.

This makes closing the digital divide among scientists very much a science education exercise, and I think that science librarians should play a central role in this. Not surprisingly, a seminar last week by our local science librarian in our department and a blog post by science librarian John Dupuis (and the FriendFeed discussion around his blog post) were the inspiration for this post (another FriendFeed discussion started by Bora Zivkovic made be write the post today instead of going to bed early).

Update 06/15/09:
One good strategy to overcome the digital divide among scientists would be a Science 2.0 Cookbook. Similar in format to the O'Reilly Cookbook series for programming problems, the Science 2.0 cookbook would use the format problem/solution/discussion to provide a solution for problems like How do I share references with my coworkers in the lab? This could be started as a Wiki project.

Figure 1: