Academic social networks: it's time to change the way we do research

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Abstract
Web 2.0 logics are changing the way scientists connect, share and collaborate. There are some effective examples of academic social networks which encompass these logics and the Open Access paradigms, changing also the way you can search, access or disseminate your scientific work.

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"Collaboration" has long been one of the fundamental components of science, since the raising of scientific journals in 1665. "Web 2.0" is participative, inclusive and collaborative, so the two logics can perfectly match, moving scholarly communication into the Web. Web 2.0 can be considered as a user centred set of principles and practices whose paradigms are, among the others, «The Web as a platform»; «Trust the users»; «Harnessing collective intelligence»; «The Wisdom of the crowds» [1]. "Participation" and "sharing" are two common keywords in this context: Wikis and social networks might be the best known examples of new means and ways people use to connect. The concepts of Web 2.0 can be adapted to different realms, so "Science 2.0" is a promising vision: communication between scientists will accelerate the creation and distribution of new knowledge; interaction is the basis of a successful research. On this path, some social networks have been created and tailored to scientists' needs, in order to make them find researchers with similar interests or expertise, to keep in touch with their peers, to share their information. When the social network encompasses the Open Access logics, it allows you also to search, access and disseminate your scientific work.

ResearchGate: keep in touch with scientists all over the world

ResearchGate (http://www.researchgate.net/), founded in 2008, has reached 800,000 researchers in 192 countries. The site is aimed at creating a working and discovering network among scientists: "Discover", "Communicate" and "Collaborate" are its main purposes, as you can see in homepage (Fig. 1).

Fig. 1 ResearchGate homepage.

ResearchGate has an interface with other diffused social networks as Facebook, Twitter, FriendFeed, of LinkedIn, so you can connect through your yet existing profiles. Once freely registered, you can share with colleagues the titles of your publications, your field of interest (more than one keyword allowed), your expertise, so anyone can discover you. According to the Open Access paradigms, if copyright policies allow, you can also upload the full text of your published works, in the **Publications** section. ResearchGate features a semantic search within the available material: it has developed a semantic search engine that works on internal resources and major external free research databases, including PubMed, CiteSeer, arXiv, and others to find research papers. The search engine analyzes a wider string of terms than is used in standard keyword searches, in order to return more precise results.
You can also sign in into virtual **Groups** in different topics, or create your own subject group: as of March 2011 there are more than 1,000. The platform itself will suggest groups, other members and literature with similar research interests that the user might be interested in. "Following" these groups, researchers can put in common their perspective in a Forum, they can post updates or discuss methods and also create actual collaboration sharing files and writing together via

collaborative web software. Other tools include an appointment scheduler and a polling/survey option. The platform supports also private Subcommunities for larger organizations, open only to members of the respective institution.

In the **Event** section you can find conference, meetings, workshops and so on clustered by topics. You can create and share your event; and you can personalize into a "My Event" section with your saved conferences of interest.

ResearchGate also offers a **Job** section in which you can find research job applications: jobs can be filtered by keyword, position, field and country. You can directly apply if interested or share it with potentially interested colleagues.

As a sort of spin-off, in 2009 **ResearchGate Blog** was launched (http://blog.researchgate.net/). Members of the scientific network can submit postings from their individual ResearchGate profile. The highest-quality submissions are then selected and published. Made up of these quality postings, ResearchGate Blog is a reputable source for science news, commentary, research and innovation from all academic disciplines. You can browse by discipline; you can also subscribe via RSS feed to be kept informed each time a new post in your topic is submitted.

In addition to writing articles for their individual blogs, all members can use the **Microarticle template** to summarize a published, peer-reviewed article or to present recent findings and important concepts. The "micro" of microarticle refers to the 306 character maximum that is allowed for these kind of posts.

Academia.edu: follow the research in real time

A similar project is Academia.edu (http://www.academia.edu/), aimed at helping academics follow the latest research in their field (fig. 2)

Fig. 2 Academia.edu homepage

Once freely registered, you can set your profile and fill in your publication list and your field of interest, finding at the same time researchers with a matching profile. Then you can follow what academics in your field are working on, i.e. the latest papers they are publishing, the talks they are giving or the blog posts and status updates they are writing. Subscribing via RSS News, you will be notified when anyone is updating his status.

You can create your own webpage on Academia.edu, and share your research, listing your interests, uploading your papers and talks.

An important tool that Academia.edu offers is the statistic of your downloads and page views; it also allows you to know what keywords people use to search for you on Google.

Mendeley: a comprehensive tool for researchers

Mendeley (http://www.mendeley.com/) is a web service which combines the features of the abovementioned academic social networks and those of a reference manager tool (see this column, on EJPMR 2010, 46(2), 301-307), freely downloadable at http://www.mendeley.com/download-mendeley-desktop/. Please notice that it is available also for iPhone and iPad (Fig. 3).

Fig. 3 Mendeley homepage, Papers feature, Groups feature

As **reference manager tool**, Mendeley can import/export citations to other similar tools (Zotero, CiteULike, EndNote) in various formats, and, more important, can then synchronize with them. A striking feature is the automatic citation extraction from pdf files: you certainly have lots of research papers in PDF format, and Mendeley helps you turn them into a bibliography database without manual data entry, just by dragging and dropping the pdf into Mendeley Desktop. It imports

citations from the results page of Google Scholar, PubMed, Web of Science, EBSCO, ScienceDirect, Wiley Online Library, Amazon, and over 50 databases more, or directly from a Web page. As other tools, this system generates bibliography and reference lists in more than 1,000 different styles. Moreover, Mendeley allows you to manage your bibliographic database, indexes it by keywords, and allows also reading, annotating and sharing the pdf files with your peers.

As **academic social network**, Mendeley lets you build your academic profile with your areas of expertise to be discovered by others; you can increase your visibility by sharing your profile as a CV. Once freely registered, you set your preferences and indicate your field of interest, and then you can create your personal network of research contacts for current and future research collaboration. Aim of such a network is finding the top experts on any subject, seeing who's researching what, and staying up to date about your colleagues' work.

The **Papers** section, clustered into topics, is an archive in which you can upload your works, according to the copyright policy of your editor. It is to be underlined that Mendeley in the first quarter 2011 reached 800,000 free downloadable papers from 300,000, growing of 171%: as Heather Morrison underlines, «there is a considerable appetite for self-archiving, once the researcher has a service that appeals to *them*» [2].

The **Group** section can be both public and private, closed to a lab or a project group. It allows assigning tasks, or discussing your research projects. Project updates are delivered to your personalized Mendeley Dashboard in real-time.

Mendeley is becoming one of the biggest research databases in the world; it has the added-value of a layer of social information about the readership demographics and user-generated tags for each research paper.

To let you have a real-time insight into trends in research, Mendeley recommends you scholarly papers matching your current research interests. You can also see real-time statistics about the hottest research papers, authors, topics, and journals in your academic discipline, measured by readership in the Mendeley research network. Each paper's readership metrics are further broken down into unique demographic and geographic segments, allowing you unprecedented insight into research trends as they happen.

Mendeley generates your personal research impact data: you can find out about the readership of your own publications as it develops in real-time, with figures about your readers, their country and affiliation, their academic status, and their academic fields. As a sort of record of your research history, the system lets you discover how your research interests evolved over time. It visualizes statistics about your most frequently read authors and journals, and the tags you most frequently used in your document library each week.

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[1] O'Reilly, T. What is Web 2.0, blog post, available at http://oreilly.com/pub/a/web2/archive/what-is-web-20.html?page=1.

[2] Morrison, H Dramatic growth of Open Access, blog post, available at http://poeticeconomics.blogspot.com/2011/03/dramatic-growth-of-open-access-march-31.html.