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Biologists Using Social-networking Sites to Boost Collaboration

Among scientists, there is a growing awareness of the value of social networking for advancing scientific research. From Facebook to LinkedIn to online niche scientific communities (e.g., Lab Meeting, Ologeez, Vivoweb, Academia.edu, ESnet, NetSci), scientists are using social-networking tools to foster collaboration and to accelerate the rate of discovery. Most science-networking sites offer some level of social networking, data sharing, searchable literature databases, and opportunities to create dialogue that may lead to collaborative research.

One of the newest scientific-networking platforms that appears to be drawing biologists is ResearchGate, launched in 2008. Since January 2009, ResearchGate has experienced a 4000-percent growth rate, from 25,000 users to over 1 million today. The second-largest discipline represented, after medicine, is biology. Some 210,000 biologists have provided over 9 million publication links (mainly metadata from published articles but also some full texts and conference proceedings).

In August 2010, Sigma Xi, The Scientific Research Society, endorsed ResearchGate as a preferred networking platform. More than 30,000 of its members—students, researchers, and scientists—are now using the Web site.

The site also reflects a growing international interest and a wide base of disciplines, both scientific and nonscientific. “I think the diversity of disciplines we have is important in generating new ideas and new methods,” says ResearchGate cofounder and CEO Ijad Madisch.

While he was conducting research at Massachusetts General Hospital in Boston in 1997, Madisch was struck by “how inefficient the scientific process was at the time,” he says. “Most research was being conducted by multiple scientists in a vacuum, without data being shared. Collaboration was

typically limited to the network the scientist had built over the years or to a particular institution. However, even in this minimal network, methods were often not shared. Not only were redundant experiments taking place, but ineffective methods were being used.”

After much discussion, Madisch and German researchers Soeren Hofmayer and Horst Fickenscher decided to develop a scientific social-networking platform for sharing results, projects, methods, and innovations. It would also allow crowdsourcing to enable users to ask questions that might lead to better results and possible research partnerships. “The mission is to reduce the time to discovery by facilitating cooperation and collaboration among scientists and researchers worldwide,” says Madisch.

He adds that ResearchGate continues “to expand our capabilities and improve functionality and collaboration.” One of these capabilities is the “Methods Group,” a place where users can share lab experiences and discuss technical problems. “It is not uncommon for a subscriber to post a deep and very technical question and have near-immediate responses from all over the country and the world,” comments Paul C. Kettler, a ResearchGate user and visiting research scholar in mathematics at the University of Oslo.

Soenke Bartling, an experimental radiologist with the German Cancer Research Center in Heidelberg, Germany, is one of the earliest members of ResearchGate. “Through its novel search algorithms I have located important papers and publications. My blog is my personal news feed and a quick and easy method to publish results and opinion[s] on other research and findings.”

Private groups can also be created online to discuss more confidential matters, share data, or coedit docu-

ments. Open groups are available for posting ideas for collaborations. The internal search and the literature search engine enables members to search both the membership base and publications simultaneously through the submission of a research abstract.

Anyone can join ResearchGate. Users create free profiles that include a research curriculum vitae, current projects, and publications list. The biology section of the site offers dozens of groups in which members can participate. Although most are open, some are invitation-only work groups, such as Translator Proteins, Microbial Resistance, and the Molecular Biology Unit. Members write in from all over the world, the vast majority of them in English.

An Indian researcher recently asked the Bioinformatics group how sequence motifs related to the regulation of gene expression. In the Animal Behavior group, a US graduate student in entomology was looking for others who study pheromones in insects. Researchers in Great Britain and Poland responded to him.

According to Madisch, the globalization of science is long overdue. Improving the ability to collaborate reduces the chances of scientists starting long experiments that others are about to complete—eliminating redundant research and saving valuable research funds.

“Being able to selectively crowdsource also helps researchers create new projects, improve methods, confirm results, and broadcast their findings to the larger community in a fraction of the time it took only a decade ago,” adds Madisch.

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