A Scientist's Guide to Social Media

Social networking sites like Facebook, LinkedIn, and Twitter can be intimidating for introverted scientists—all that interaction, 24/7. But actually, online communities are perfect for people who want to cogitate before they comment. Social networks also give extroverts a channel for real-time global intercommunication. No matter your personality type, career advisors recommend that postdocs use online networking tools to make connections, exchange scientific ideas, and advance a career. This guide is designed to nudge reluctant networkers to get started with an online professional profile and help social media experts get even more out of social networking. **By Chris Tachibana**

"You simply must have an online presence."
—Karen Peterson

In 2009, **Kaan Akşit** (@kaanaksit) found himself surrounded by Dutch Facebook enthusiasts. Akşit was a visiting student at Philips Research in the Netherlands at the time and "not the kind of guy to use social media." After initially resisting invitations to online communities from coworkers, Akşit says, "my supervisor finally said, 'at least use LinkedIn.'" The professional networking site was his social media gateway.

Today, Akşit is finishing an electrical engineering Ph.D. at Koç University in Istanbul, Turkey, and using social media to explore his postdoctoral options. He also shares about his work and life on Facebook, Twitter, Instagram, Google+, and his own blog. He has 500+ LinkedIn connections and self-describes as "kind of a sharefreak."

But even researchers who aren't daily visitors to online social spaces benefit from occasionally dropping by. Networking sites can help scientists stay current in their field, keep track of colleagues, and build a community of advisors and collaborators. Social media lets researchers participate in conferences remotely, sparing travel time and budgets. Professional networking services make it easy for reluctant scientific networkers to create an online profile, which career consultants say is a professional obligation.

IS IT FOR EVERYBODY?

"You simply must have an online presence," says **Karen Peterson,** director of Scientific Career Development at Fred Hutchinson Cancer Research Center; in fact, she adds, you already have one (just try an Internet search of your name), so you might as well curate it. This advice is especially important for researchers who are thinking ahead to a transition: graduate to postgraduate work, postgraduate to job, or perhaps a career change.

Peterson recommends that, like Akşit, researchers start with LinkedIn. A complete, updated LinkedIn profile conveys your background, experience, and accomplishments to potential employers and people with common interests. Peterson says that LinkedIn is especially useful for setting up informational interviews, which are informal conversations with experts in careers or research areas in which you're interested. Use LinkedIn to find personal or institutional connections to someone you want to talk with and use those ties to ask for an introduction. (Or use SciVal Experts if your institution has a subscription.) Set up a meeting or phone conversation and be prepared with a short summary—an elevator pitch—about your research and some specific, open-ended questions. Ask about others you might talk with and follow up with a written thank-you note. This is a classic way to grow your network, says Peterson. LinkedIn and similar services just make the initial contact easier because the major networking sites have a surprisingly vast membership representing all scientific careers and both young and established researchers.

A common assumption is that early career scientists are the most enthusiastic users of social media. However, preliminary results hint that established researchers are also quite active. A study of computer scientists, which mainly focused on methods for determining online activity, found that many scientists with an online presence were tenure-level, judging from their high-impact publications; they also used multiple networking sites. Plus, participation in online communities is growing. "The scientific discourse is moving online," says **Paul Groth** (@pgroth), assistant professor, Department of Computer Science, VU University Amsterdam, and one of the study's coauthors. "And it's going to keep continued>

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"I use social media to get scientific inspiration," —Kaan Akşit

moving in that direction." This means that networking sites are virtual venues where students and postdocs can connect to leaders in their field.

People of all ages, experience levels, and career paths are embracing online tools, says **Karyn Traphagen** (@kTraphagen), cofounder and executive director of ScienceOnline, a nonprofit organization for science outreach, networking, and community building. She sees advanced networkers, novices, media mavens, students, postdocs, and professors at national and local ScienceOnline meetings and says that social media sites can create genuine, interactive, and far-reaching communities. Social media is a great equalizer.

Most social networking sites are global, so they are excellent tools for making and maintaining international connections. For early career scientists trying to make a splash with their work, no platform has a greater reach than the big three networking sites: LinkedIn, Facebook, and Twitter. Compare a talk at a conference attended by a thousand people to the potential online audience: LinkedIn has nearly 260 million members and Facebook and Twitter have hundreds of millions of users a month.

FACEBOOK AND TWITTER FOR SCIENTISTS? REALLY?

Social network services emerge, evolve, and go extinct like influenza viruses. But right now, researchers use Facebook for personal contacts. Early career scientists, who move often, might use Facebook to maintain friendships with former lab members. Facebook can reveal fun, nonprofessional insights about a colleague—maybe a potential collaborator is an especially good fit because of a common love of fly fishing, knitting, or manga. Universities, corporations, and even research groups have public Facebook pages that can be useful for news about former and potential employers. However, Facebook is static compared to the real-time interaction of Twitter.

"The number one area for the ScienceOnline community is Twitter," says Traphagen. Twitter use is growing in academia, across disciplines, for scholarly and nonscholarly use. And if you think Twitter is just for celebrity gossip, you might be surprised at the range of professional applications.

"I use social media to get scientific inspiration," says Akşit. His thesis project is improving motion capture, for example for films, so he follows the electronics industry on Twitter to hear about new products and developments. Other scientists follow research groups to avoid overlapping projects or to find collaboration opportunities. Twitter is supplementing or replacing automated search and alert services, for example for relevant literature. "I often hear about important papers on Twitter as soon as they are released or even before," says **Jonathan Jacobs** (@bioinformer), principal scientist in biosurveillance at MRI Global, a nonprofit contract research organization. "Especially in the bioinformatics community, tweeting communicates not just news but actual science."

"The easiest way to see the power of Twitter," says Traphagen, "is to follow a conference hashtag." (For example, search for #AAASmtg for news about the annual American Association for the Advancement of Science conference.) If you are attending a meeting, Twitter and other networking tools can connect you, before arrival, to people who share your research interests. If you can't attend, Twitter can tell you what talks and posters caught people's attention and where to find shared resources such as websites or slides. Jacobs says he gets almost as much information from following a conference via Twitter as actually attending. If you're presenting, Groth advises having a Twitter account and putting your handle on slides and posters. That helps people tweet about your presentation, which increases your impact, maybe even attracting the attention of potential collaborators or group and department leaders.

Somewhat unexpectedly, Twitter is recommended for shy people. "The Internet lets you follow a conversation without physically stepping into a group of people," says Traphagen. "You can sit back and listen and get involved when you're ready by inserting a comment and seeing how people respond." New Twitter users are often intimidated by the billions of tweets, but Traphagen says that if you want specific information, use a hashtag search (e.g., #sharks). If you are still overwhelmed, says Traphagen, think of Twitter as a river: "Every now and then, go put your feet in and see what is flowing by right now."

BUT WAIT, THERE'S MORE?

If Facebook and Twitter are for conversations and LinkedIn presents your credentials, what are the benefits of up-and-coming and specialty sites? The ScienceOnline community increasingly uses Google+ for broadcasting and archiving conversations with researchers, says Traphagen. Another resource for following talks and conferences is Storify, where attendees or hosts collect presentation materials, comments, and notes. Groth recommends posting presentations on Slideshare, if your institution allows. This extends the reach of a seminar far beyond people who can attend. Sites like Slideshare also track views, downloads, and recommendations that document the impact of your research.

Groth used ImpactStory, a science-sharing site, for a midterm review of a European Union project. Publications from the work hadn't had time to build a substantial citation record, says Groth, so he used metrics from ImpactStory to demonstrate the influence of the work in progress. Still, publications are not going away, either as a permanent research record or a measure for hiring, promotion, and tenure, he says.

Since the scientific world orbits around peer-reviewed articles, science-sharing sites such as Mendeley and ResearchGate revolve around publications. By allowing researchers to share and comment on papers and ask and answer questions, these sites add networking functions to a typical publication list. Publication-oriented sites make requests for electronic reprints easy for postdocs at institutions without extensive journal subscriptions. Specialized sites such as GitHub for computer scientists or BioMedExperts for life scientists serve the needs of specific scientific communities. But don't be overwhelmed. "The Internet is a big place," says Jacobs. "How you use it depends on what you have time for and what kind of itch you're trying to scratch." Jacobs and other experienced online networkers say a little exploring will uncover networks with a community and functions that enhance your work.

FEATURED PARTICIPANTS

Fred Hutchinson Cancer Research Center
www.fhcrc.org

Koç University
www.ku.edu.tr/en

MRIGlobal
mriglobal.org

Philips Research
www.research.philips.com

ScienceOnline
scienceonline.com

VU University Amsterdam
www.vu.nl/en

ADDITIONAL RESOURCES

BioMedExperts
www.biomedexperts.com

Facebook
www.facebook.com

Additional Resources Cont.

GitHub
github.com

Google+
plus.google.com

ImpactStory
impactstory.org

LinkedIn
www.linkedin.com

Mendeley
www.mendeley.com

ResearchGate www
researchgate.net

SciVal Experts
scival.com

Slideshare
www.slideshare.net

Storify
storify.com

Twitter
www.twitter.com

Karyn Traphagen often travels with Camilla Corona (@CamillaSpace), a rubber chicken who advocates for Space Education and STEM using social media.

"The number one area for the ScienceOnline community is Twitter."

— Karyn Traphagen

SHOULD I BLOG?

Then there's blogging, which is varsity-level online sharing. Blogs require a regular time commitment and a deep passion about a topic. If you're considering a blog, try guest posts on other sites. **Kiran Dhillon** (@Indigal9), a postdoctoral researcher at Fred Hutchinson Cancer Research Center, started blogging about her breast cancer work when Angelina Jolie spoke about inheriting a BRCA mutation and having prophylactic surgery. Dhillon considers her blog to be professional development: "It's a good exercise in finding my voice and learning how to communicate science to the public."

Even if you don't blog, Dhillon encourages all scientists to have a professional website to highlight accomplishments and show examples of soft skills such as leadership and management. "LinkedIn is good for connecting and summarizing your research, but it's limited. Your own website gives people a better sense of who you are. Plus, you can post videos or images, like great immunofluorescence results." Some researchers modestly say they want their science to speak for itself, but Dhillon says to think about the buzz around certain talks or posters at a conference. In those cases, the scientists worked hard to present their work in a way that got people excited. A professional website can pay off in the same way.

IS REAL LIFE STILL NECESSARY?

Yes, say social media experts. For all the linking, sharing, and networking that online resources offer, Peterson says, "For a true connection, you still need to meet face-to-face." LinkedIn and other sites just facilitate what early career scientists should be doing anyway, says Peterson: meeting people with common interests, professional and otherwise. Even networking with nonscientists is part of career development, she says, because you never know who is connected to whom. Jacobs found jobs through LinkedIn, mainly by finding events to attend and people to contact for in-person interactions.

So go forth and connect, say social media experts, but start slowly. Think about what should be private and public. Traphagen says experienced online networkers advise treating everything you post as potentially becoming public. Follow online etiquette, which is essentially like any social interaction: be friendly, collegial, and respectful. Think of social networking as a conversation, but if you get ignored or rejected, don't take it personally. Find the sites that work for you. Don't pester people, but remember that most people want to help and most researchers love to talk about their work, says Dhillon. "Scientists are passionate about our research—that's why we do it."

If you don't feel like you have time for online networking, Traphagen suggests thinking of it as just another scheduled work activity. "Lots of things can be time sucks," she says, "including social media. But when a task is professionally important, we're disciplined about doing it." But again, says Traphagen, don't be discouraged by the constant influx of information: "Remember: you don't have to pay attention to everything. It's okay to miss things."

When you leave the computer and meet an online contact in person, keep the same open attitude. The late Ken Metzler, who was a professor at the University of Oregon, in his book *Creative Interviewing,* said sincerity, curiosity, and listening ability are all you need for an informative conversation. Scientists are naturally curious and when we find something genuinely interesting about a new colleague, sincerity and listening follow. This is the type of old-fashioned networking that even a young scientist like Dhillon says is most effective.

"Talk to people, even if you're not naturally outgoing," says Dhillon. "Get involved in activities for students and postdocs at your institute. Just going to meetings makes you part of the community, and as you build confidence you'll find ways to contribute." Volunteering for presentations, committees, and workshops is work, admits Dhillon, but pays off in a strong network that reaches into diverse research areas and administration, which helps new researchers learn what it takes to run a laboratory, a group, or a research center. Echoing the first rule of improvisational theater, Dhillon says, "when people ask you to do something, say yes."

Chris Tachibana (@ChrisTachibana) is a science writer based in Seattle, USA, and Copenhagen, Denmark.

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