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COMMUNICATION

Life in the old blog yet

Blogging is still a top way to communicate science to a broad readership, researchers say.

BY ERYN BROWN AND CHRIS WOOLSTON

Allison McDonald has had a lot on her mind lately. She has ruminated on the common mistakes that students make when defending their theses, the identification of the flies that have invaded her office and the plot points of the TV show *Star Trek: Discovery*. But instead of keeping these thoughts to herself, McDonald, a cell biologist at Wilfrid Laurier University in Waterloo, Canada, has posted them on her DoctorAl blog (aemcdonald.wordpress.com).

Science blogs have been around since the early 2000s, and in recent years the 'microblogging' platform Twitter and other social-media channels, which require less time to maintain than does a full blog, threatened to make them obsolete. But some scientists are keeping the practice alive, and it continues to play a major part in sparking collaborations, conveying crucial information and strengthening scientific communities.

"Blogging isn't for everyone, but it's important that people realize it is part of the many ways scientists talk to each other," says Stephen Heard, an evolutionary ecologist at the University of New Brunswick in Canada and author of the blog Scientist Sees Squirrel (go.nature.com/2gk4gf2; tagline: 'Seldom original. Often wrong. Occasionally interesting.')

Studies on the reach and impact of science blogging have refocused attention to the endeavour. In unpublished work, researchers at the Karlsruhe Institute of Technology in Germany surveyed the social-media and scientific-outreach activities of 865 scientists who were born in 1981 or later. The participants included mathematicians, chemists, physiologists and physicists. Overall, 15% had started a blog, but few updated it with any regularity. "I already knew science blogging wasn't very popular in Germany," says lead author Carsten Könneker, a science-communication researcher who has trained hundreds of young scientists in public outreach. "Blogging is only one digital format for science communication. Scientists who don't make use of any of these formats are missing out on immense opportunities."

The survey uncovered some telling attitudes towards blogs and other forms of science outreach. Nearly two-thirds of respondents said that a lack of time was a 'great obstacle' to any sort of science communication.

But almost 70% agreed that communicating science can help to advance a researcher's ▶

career, and nearly 90% said that it could help to recruit more bright minds to science.

McDonald had young researchers in mind when she started her blog in 2013. Writing maybe three times a week, she aims to pass on information that could help them to navigate tricky professional waters. "My posts aren't all epically insightful," she says. "But the ultimate goal is to take the mystery out of the equation, to level the playing field for people who aren't aware that there is even a game at play."

Like McDonald, Heard hopes to inform and encourage younger scientists through his blog. But he also sees benefits to his own career. "I don't have any evidence that blogging makes it any easier to get grants or to get papers published," he says. "I have just as many failures now as before. But I have a network of people that I know because they read and comment on my blog posts. There's a research project on my screen right now that began as a blog post."

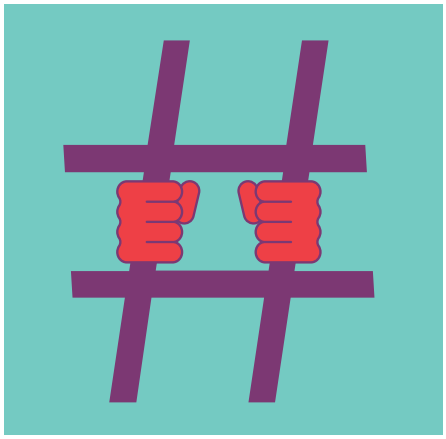
Heard estimates that he averages three to four hours a week working on his blog, but acknowledges that some posts take longer than others. "I've spent eight hours writing a single post," he says. Still, he finds a way to fit blogging into his schedule. "I try to blog at low-productivity times, like when I'm in an airport lounge or waiting for a meeting to start."

For Heard and others, the investment is worth it. In an October 2017 paper published in the journal *Royal Society Open Science* (M. E. Saunders *et al. R. Soc. Open Sci.* **4,** 170957; 2017), he and seven other blogger-researchers analysed the impact of their own 'science community' blogs, sites targeting researchers that focus on the culture and business of doing science. The most-read blog in the sample, Dynamic Ecology, has a median viewership of more than 40,000 views a month, whereas Scientists Sees Squirrel brings in around 10,000 views. Some of the most important impacts are also impossible to quantify. The paper notes that total strangers have walked up to Heard to thank him for a post that offers advice for introverts trying to cope with a conference.

Any study into the reach and impact of blogging will leave some unanswered questions, says Paige Brown Jarreau, a science-communication specialist at Louisiana State University in Baton Rouge who blogs at From the Lab Bench. "Blogs are often difficult to define; the ecosystem of online science social-media content is expanding, and platforms are blending into one another," she says.

Still, blogs clearly have some reach. In a 2017 study that Jarreau co-wrote for *Journalism and Mass Communication Quarterly*, 40 out of 43 randomly selected science bloggers reported getting more than 1,000 views within a few days for a typical post (P. B. Jarreau and L. Porter *Journal. Mass Commun. Q.* http://doi.org/cjvj; 2017). For the most part, those clicks were coming from colleagues or colleagues-in-the-making. More than 40% of blog readers surveyed said that they were already pursuing careers in science, and another 16% said that they were interested in science careers.

For Marc Robinson-Rechavi, a researcher in bioinformatics at the University of Lausanne, Switzerland, one motive for writing his blog was a desire to create a community of bloggers — and readers — in French (most science writing online, including blogs, is in English). Today, Robinson-Rechavi blogs on the French-language platform Café Des Sciences, which hosts several dozen bloggers in Europe, North America and Africa.



Terry McGlynn, an ecologist at California State University Dominguez Hills in Carson, credits his popular blog Small Pond Science with transforming his career by increasing his visibility. His institution — a teaching-focused school that maintains a relatively low profile among researchers — recently wanted to hire an ecologist. Some of those who were interviewed for the job said that it was McGlynn's blog that had alerted them to the opportunity. "That was a light-bulb moment for people in my department," he says. His standing in the blogosphere has helped him in his own negotiations with the university, giving him the edge he needed to demand more support from his department.

Seeing the positive impact of blogging in his own career, McGlynn has decided to open up the opportunity to others. This spring, he plans to launch Rapid Ecology, a site that will feature blog posts from any scientist or science student anywhere in the world who wants to contribute. "There are only three criteria for posts," he says. "They have to be relevant, they have to have at least some substance and you can't be a jerk." He says that 30 scientists have already volunteered to help run the site and contribute occasional posts.

Contributors to Rapid Ecology will be limited to one post a month, meaning that anyone could give blogging a try without a huge commitment. "I want students to be able to write posts that will have as much visibility as something that I write in Small Pond Science," McGlynn says.

HASH OUT A FRESH APPROACH

Changes in the online landscape — particularly the social-media boom — have diluted the impact of blogging, argues Jeremy Caplan, director of education for the Tow-Knight Center for Entrepreneurial Journalism at the City University of New York Graduate School of Journalism. With a Twitter or Facebook feed to do the work for them, he says, "people don't want to keep track of 10, 20 or 30 individual scientists' blogs".

And posting to sites such as Medium, Quora and Reddit — 'hangout' sites where researchers or any subgroup can post ongoing 'threads', or conversations on a single topic — is a way to publish without the burden of maintaining a blog (see 'Blogging'). Responding to the constant need for new content, say bloggers, can take tremendous discipline. "Writers lose steam and decide to park their store in someone else's mall," Caplan says.

As Jarreau sees it, social-media platforms don't supplant blogging, they feed it — giving

BLOGGING

How to get started

Launching a blog can be daunting, says Stephen Heard, an evolutionary ecologist at the University of New Brunswick in Canada who runs his own blog, Scientist Sees Squirrel. Here are some tips:

- Choose the right web-hosting service. Heard uses WordPress.com, but notes that there are many other easy-to-use options. For some pros and cons of different platforms, see go.nature.com/2bvaccf.
- Interact with other blogs before launching your own. Simply by commenting on other posts, would-be bloggers can make themselves known to the blogging community. Guest-posting on an established blog can be another way to get exposure, Heard says.
- Find ways to increase readership. Experiment with different headlines; use strong keywords that are practical and entertaining; and tweet your blog posts or put them on Facebook.
- Don't get discouraged if page views seem low at first, Heard says, and don't expect a flood of comments. "A lot of commenting now takes place on Twitter rather than the blog itself," he says. "Building an audience takes time. But they do build." C.W.

writers a place to develop and test ideas that they might later incorporate into a lengthier post, and directing readers to the detailed content they want. "Discovery of science blogs is increasingly through social media," she says.

RISKS AND BENEFITS

Blogging does have potential pitfalls. For a start, it is not likely to make anyone wealthy. "It's probably not worth doing it for the money unless your audience is huge," says McGlynn. Small Pond Science, which has had more than 570,000 visits in total, doesn't take ads. But even if it did, McGlynn has calculated, he'd probably clear only US$10,000 to $20,000 a year.

Academic colleagues might think that blogging is a waste of time or damaging to a career. "Some people say blogging and social media are distractions and will hurt you on the job market because it demonstrates that you're not serious," McGlynn says. When Robinson-Rechavi started blogging in 2010, he signed his posts using only his initials, unsure how people would react — even though he already had tenure and faced little risk. He thinks that his colleagues don't understand why he blogs and are indifferent to his posts. Yet administrators at his university consider his blogging a useful forum for communicating ideas. "I think they like that I'm doing it," he adds.

"The ultimate goal is to level the playing field for people who aren't aware that there is even a game at play."

It's worth considering the inherent risk in putting one's name, face and ideas on the Internet. McDonald says that bloggers — and particularly women — need to think carefully before they post, because online visibility can expose writers to abuse.

Still, McDonald keeps at it, happy to be involved in broader conversations about teaching, biology, women in academia — and *Star Trek*. When she came up for tenure, she discussed her blog in her application. "This is part of my outreach and advocacy work for diversity in science," she says. Blogging helps her to take her research into the world, a goal that she believes is crucial for scientists.

"We hear all the time about the decline of blogging," Heard says. But he has no intention of quitting and will continue to spread the word about its benefits. "I hope that those who are on the fence — those who think it might be for them — can be encouraged to give it a go." ■

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ADAPTED FROM GETTY

COLUMN

Make yourself heard

Researchers who want to 'do something about it' can join with others to effect change, says **Sarah Hamylton**.

The impacts of climate change are real. Plant and animal habitats are changing, glaciers are melting and heatwaves and floods are becoming more frequent. All this causes me to question the utility of my work as an environmental scientist.

Reports that two mass coral-bleaching episodes in 2016 and 2017 had killed around half the coral on the Great Barrier Reef stopped me short. Having spent the past decade modelling the impacts of climate change on coral reefs, I feel as if much of that work is now futile.

Environmental scientists are calling attention to changes in the natural world that are driven by carbon emissions from burning fossil fuels. In doing so, we speak of the 'grief' of climate science, using words such as 'demoralizing', 'conflicted' and 'deep sense of worry'. Charlie Veron, a world authority on coral and former chief scientist of the Australian Institute of Marine Science, told the Australian Broadcasting Corporation's Radio National in 2016: "I am someone who can actually do something about it. I am someone who is listened to and I have made a difference. And so I have to keep on doing that. It's not as if I can say, 'to hell with it', and go and do some gardening."

We have a responsibility to lead change. This responsibility raises questions, such as: how do scientists cope with the emotional burden of their knowledge? And how can these emotions galvanize us into action?

In 2017, I joined Homeward Bound, a global environmental-leadership programme for women in science that launched in 2016. Each year, the programme coaches up to 150 women for 12 months, culminating in a 3-week voyage to Antarctica, where female scientists develop their confidence and strategic vision for acting together on climate change. The programme has focused my attention on projecting my voice as an environmental scientist.

In 2015, I became a councillor of the Australian Coral Reef Society (ACRS), the world's oldest society for protecting Australia's coral reefs, which has a track record of calling for change. That year, we wrote submissions and reports on behalf of more than 300 concerned scientists in what became known as the 'coal versus coral' war. The Great Barrier Reef Marine Park Authority had approved a proposal to dump 3 million cubic metres of dredged sediment from Abbot Point, a huge coal port in northern Queensland, into the Great Barrier Reef World Heritage Area.

This would have been an environmental disaster, with plumes of sediment compromising marine life. The authority reversed its decision when the ACRS made its views known alongside those of conservationists, tourism operators, grassroots organizations such as GetUp! and the indigenous climate group Seed. It was immensely satisfying to be part of this endeavour. To keep up the pressure, we sent a letter last August on behalf of the ACRS to Australia's prime minister, Malcolm Turnbull, urging immediate action to curb carbon emissions.

I have also begun to explore how interdisciplinary approaches weave together different practices to create powerful ways of communicating the science of climate change. Last September, I became an unlikely 'artist in residence' at the Bundanon Trust in Illaroo, Australia, which supports creative work that emphasizes the value of landscapes. I am working with artists and a social scientist to untangle how interdisciplinary approaches saved the Great Barrier Reef from mining in the 1960s — and whether such approaches can help scientists to save it again.

Emotional conflicts around climate change have prompted me to revisit the reasons I became an environmental scientist. I am now using forms of expression that resonate with my personal values and add scientific authority to the argument for resisting the coal industry. How will you lead the change you want to see? ■

Sarah Hamylton *is a senior lecturer in geographic information sciences at the University of Wollongong, Australia.*