

The role of social media in science

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I first started blogging on the Science Media Centre's platform Sciblogs.co.nz in 2009, with a blog called 'A Measure of Science'. I have found that many scientists are curious about why I blog. Who reads it? How do I find the time? Sometimes I hear comments such as, 'Shouldn't scientists be focussed on writing academic papers and not wasting time on social media?' Yet in many ways, participating in social media has had a very positive impact on my career.

When I started 'A Measure of Science', I was moving into a new area of research – complex networks – and I was interested in how data could be used to get insight into the way science works and its impact on the economy. At the time, my core research focus was on advanced materials and nanotechnology, and I didn't have the time or resources to turn out academic publications on the topic. The blog provided an alternative that let me disseminate the results informally and still get feedback from other researchers. I thought what I was doing was interesting, and I wanted people to pick up on it, and eventually they did. Blogging has clearly increased the uptake of my work, here and overseas.

Writing a blog also turned out to be a great way of making this research accessible to people from other academic disciplines. My blog posts started attracting the attention of people outside my discipline whom I wouldn't normally be connected to – I didn't go to the same conferences as they did or work in the same building, but I was being exposed to their thinking and them to mine via social media. These days my blogs are read by all sorts – people in industry, government ministers, and even academic referees! Blogging is a great way to promote your ideas, and increase your visibility outside the research community.

A blog does require mastering a different style of writing, challenging you to write in a more accessible way, but you can also take a few more risks. Even though there is still value in traditional outputs, like books or journal articles, blogging has become an important complement to these. In fact, blogging was a great training ground for writing *Get off the Grass*, the book I co-authored in 2013 with the late Sir Paul Callaghan.

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However, there is more to the new media than blogs. Four years ago I was fresh onto Twitter – I had started using it to draw attention to my blog posts – and started putting my Twitter handle on the slides of my presentations. The first time I did this, at the end of the talk, I saw that an electronic discussion had taken place among the audience on Twitter. I could see what from my talk had resonated and what had not. And I was able to follow up with people who weren't comfortable asking questions in public after the talk. Remarkably, it had even drawn an audience from outside the room.

Getting that instantaneous feedback is what sold me on Twitter. I think using social media has allowed my work to have a much bigger impact on society, and that means that I'm achieving more impact as an academic. I don't think the system has quite caught up with measuring this, but I've definitely seen the benefits in my career. The fact that my work on complex networks and economics has become a central area of my research now can partly be put down to the interest that I have been able to generate in it using social media.

Many journalists now use Twitter to publicise their work, to build their contacts, and as a source of information. I can think of several stories in the media that I have been involved in that have their origins in a tweet. It is also important to realise the pressure that journalists are under these days as the traditional business model that has supported journalism for hundreds of years is undermined by digital media. As researchers, we can no longer sit in our office and wait for the media to call if we want the public to be better informed. We need to be proactive and start communicating with these new tools ourselves, and we must use these tools to become better connected to journalists operating in the mainstream media.

What you soon learn though is that communication via social media is two-way. It is not just about broadcasting your research findings; it also enables you to learn what others think of your work, to get critical feedback, suggestions for further work, or even funding to pursue other questions. Social media are a great platform for engaging, and those that do best with these tools are those that listen and learn as much as they broadcast.



Shaun Hendy is a Professor of Physics at the University of Auckland and Director of Te Pūnaha Matatini, a Centre of Research Excellence focussed on the study of complex systems and networks. Shaun was Deputy Director of the MacDiarmid Institute for Advanced Materials and Nanotechnology at Victoria University of Wellington from 2008 to 2012 and President of the New Zealand Association of Scientists from 2011 to 2013.

He has won a number of awards, including the Prime Minister's Science Media Communication Prize, the Callaghan Medal for science communication, the Australian and New Zealand Industrial and Applied Mathematics' E.O. Tuck Medal and the New Zealand Association of Scientists' Research Medal. In 2012 he was elected a Fellow of the Royal Society of New Zealand.

I can think of a number of New Zealand scientists who have made very effective use of social media in recent years. In 2010, in the aftermath of the Canterbury earthquakes, Mark Quigley from the University of Canterbury became the spokesperson for the New Zealand geoscience community. Mark was not chosen for this role by any official – rather, in the midst of this crisis, he stepped up, reacting quickly, calmly, and knowledgeably to the unfolding events. Over the following months, his face became very familiar, as he explained the science behind what Canterbury was experiencing and the subsequent risks it faced.

Mark was in the right place at the right time to act, but most importantly he was prepared. He had been blogging about his research at DrQuigs.com for a number of years prior to the 2010–11 earthquake sequence. When the first earthquake struck, his blog provided a fast, reliable communication platform for getting information out. After the quakes, the readership of his blog sky-rocketed as the public turned to it for information on unfamiliar phenomena like liquefaction and the risks of aftershocks.

Siouxsie Wiles and Michelle Dickenson are two scientists at the University of Auckland who tweet, blog, and share video on social media platforms.

Siouxsie, a microbiologist at the University of Auckland, is renowned for her ability to ‘live tweet’ conferences or workshops, firing out a tweet every minute summarising what a speaker is saying. If you want journalists or the wider public to take note of your conference, ask Siouxsie very nicely if she would be willing and interested to tweet about it. Siouxsie uses her blog, Infectious Thoughts, to tackle in the media topical issues where she has expertise, and was one of the few scientists to take on Fonterra’s whey protein contamination scare in 2013. Theo Speirings, Fonterra’s CEO at the time, would have benefited from reading her analyses of the science behind the crisis.

Michelle, *aka* Nanogirl, has used social media to craft a superhero persona for herself that particularly appeals to children

and young adults, but which has also earned her the respect of some of the world’s key movers and shakers. Michelle blogs on topical issues in materials science, yet has also set out to challenge the stereotypes of scientists that frequently appear in the media and that turn many off science. Mark Quigley, Michelle Dickenson, and Siouxsie Wiles are all winners of the Prime Minister’s Science Media Communication Prize, and can each point to how social media have been crucial to what they do.

Occasionally things do go wrong. I help run an institutional twitter account (@punahamatatini) as well as having my own a personal account, and occasionally I will tweet something from the wrong one! I have also made mistakes in my blogging that have been pointed out in the comments section of my blog. Having to correct oneself in public is not something that many people enjoy, but, frankly, it is a healthy thing for scientists to do. It helps to illustrate to the public how science actually works and that scientists are human. It helps to build trust when you show a willingness to be corrected when you are wrong.

It is worth thinking about the stage in your career when you should start using social media, and there isn’t a simple answer. At an early stage in your career, academic publications are often deemed more important, but younger people are probably always going to adapt more easily to social media. As long as your use of social media is complementing your academic work, not replacing it, I think it is worthwhile at any career stage. And if you have an interest in science communication, you really must embrace these new media. There are benefits to your institution as well as personal benefits, but I think we also have a responsibility to society to engage in these new ways. By breaking down that image of ivory tower academics and making our work more accessible, we can make the research community more relevant to society.

Oh, and it’s fun too.

New Zealand scientists, science communicators, and science journalists to follow on social media

Dr Siouxsie Wiles, University of Auckland, @siouxsiew (twitter), [http://sciblogs.co.nz/infectious-thoughts/\(blog\)](http://sciblogs.co.nz/infectious-thoughts/(blog))

Dr Michelle Dickenson, University of Auckland, @medickinson, <https://matterchatter.wordpress.com/>

Dr Nicola Gaston, Victoria University of Wellington, @nicgaston, <https://whyscienceissexist.wordpress.com/>

Prof Richard Easter, University of Auckland, @REaster, <http://excursionset.com/blog/>

Dr Victoria Metcalf, Office of the Prime Minister’s Chief Science Advisor, @VicMetcalf_NZ, <http://sciblogs.co.nz/icedoctor/>

Dr Sarah Morgan, University of Auckland, @DrSMMorgan, <http://thegeneticallyinsane.blogspot.co.nz/>

Kimberly Collins, Forest and Bird, @kimi_collins

Veronika Meduna, Radio New Zealand, @VeronikaMeduna, <http://www.radionz.co.nz/national/programmes/ourchangingworld>

Olivia Allison, Radio New Zealand, @LivvyAllison

Jamie Morton, New Zealand Herald, @JamieNZHerald