



Social media under the microscope

Anne Osterrieder

Social media – the concept of sharing content in an online network – has become an integral part of society. Yet many scientists still think of it as a frivolous and slightly dubious space in which people exchange the latest cat videos and chat about food. Used in a professional context, social media can be a powerful tool to help scientists keep up to date with current developments, extend their professional network, raise their profile and engage different audiences.

Keeping in touch

As I flip through the latest issue of this magazine, I discover a familiar face. Chris Parmenter has written an interesting article about the University of Nottingham's Nanotechnology and Nanoscience Centre. In the past I would have thought "nice one" and moved on. Now I open Twitter (Twitter.com). Twitter is a social media website where users can register their personal 'Twitter handle' (mine is @AnneOsterrieder), post short updates and send messages to other users. I quickly type: "@DocParmenter Just saw your photo and article in the RMS bulletin! Very nice!" It does not take very long before Chris replies and we exchange a few lines.

Another way of networking

Chris and I met last year at the European Microscopy Congress in Manchester. This is not entirely true. In fact we met online a few days before the meeting as we both were tweeting under the conference's hashtag #EMC2013. On many social media sites the hash symbol (#) used as prefix turns any word, abbreviation or phrase into a hyperlink. Clicking this link collates all content containing that hashtag. This allows people to talk about a common topic without having to subscribe to each other's accounts. For example, when the Eurovision Song Contest was aired on TV, people discussed the show using #eurovision2013. While you might not care about other peoples' opinions about



Max Planck Society @maxplanckpress

27 Sep

STED #microscopy: a new chapter in light imaging bit.ly/1bvhdZl via @Photonics_com

Followed by EPSO and 3 others

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GE Cell Biology @GECeCellBiology

27 Sep

The Cell Image Competition is now open for entries! Submit your beautiful #science here goo.gl/uKOa5u #microscopy #deltavision

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BioTechniques @MyBioTechniques

26 Sep

Counting unstained, confluent cells by modified bright-field #microscopy ow.ly/pavBn

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ZEISS Microscopy @zeiss_micro

26 Sep

#ZEISS #Microscopy 3D Imaging Workshops in Singapore @SHSResidency @NUSingapore @NTUsg October 23-29 - register today bit.ly/14L3uK5

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IEEE Photonics @IEEEPhotonics

25 Sep

#Microscopy and #spectroscopy combined: simultaneously image & obtain IR spectrum for molecules adhered to a surface: rsc.li/1bDtFa1

Followed by Matthew

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Google+

Share with the people you care about,
and explore the stuff you're into.

the UK's musical performance, you might well be interested in what is happening at a conference or in your discipline (e.g. #microscopy, Figure 1). Other hashtags like #PHDchat (Riazat, 2013) or #ECRchat (Lichten, 2013) help PhD students and early career researchers to connect and exchange advice on things like academic writing, time management or work-life balance.

There are already a number of established and useful academic hashtags in use (Inside Higher Ed, 2013), but anyone can make up a hashtag at any time. Before promoting its wider use it is worth to quickly check it, as it might clash with another event. For example, #EMC2013 was used by both the European Microscopy Congress and the Essential Magic Conference, and a potential hashtag for a plant science education meeting needed to be changed because it would have clashed with a US police and crime news stream.

Building your professional online network

Social media allows the rapid sharing of content within an online network. The key to building your highly personalized and relevant network and avoiding information overload is to establish what you want use it for and apply strict rules about who to follow. If frequent updates about the weather or sandwiches are not your thing, find people who share things that interest you—and then unsubscribe from the lunch updates. My own professional network is not restricted to scientists but expands to science communicators and journalists, teachers, magazine editors, poets, fiction writers and many other non-scientists. This has significantly changed my own perspective and has positively affected the way I approach my own research and science communication. My contacts keep me up to date with the latest research findings in plant science and cell biology. I am constantly learning new things about other scientific areas (check out the curated database 'Tweet your Science'), other academic

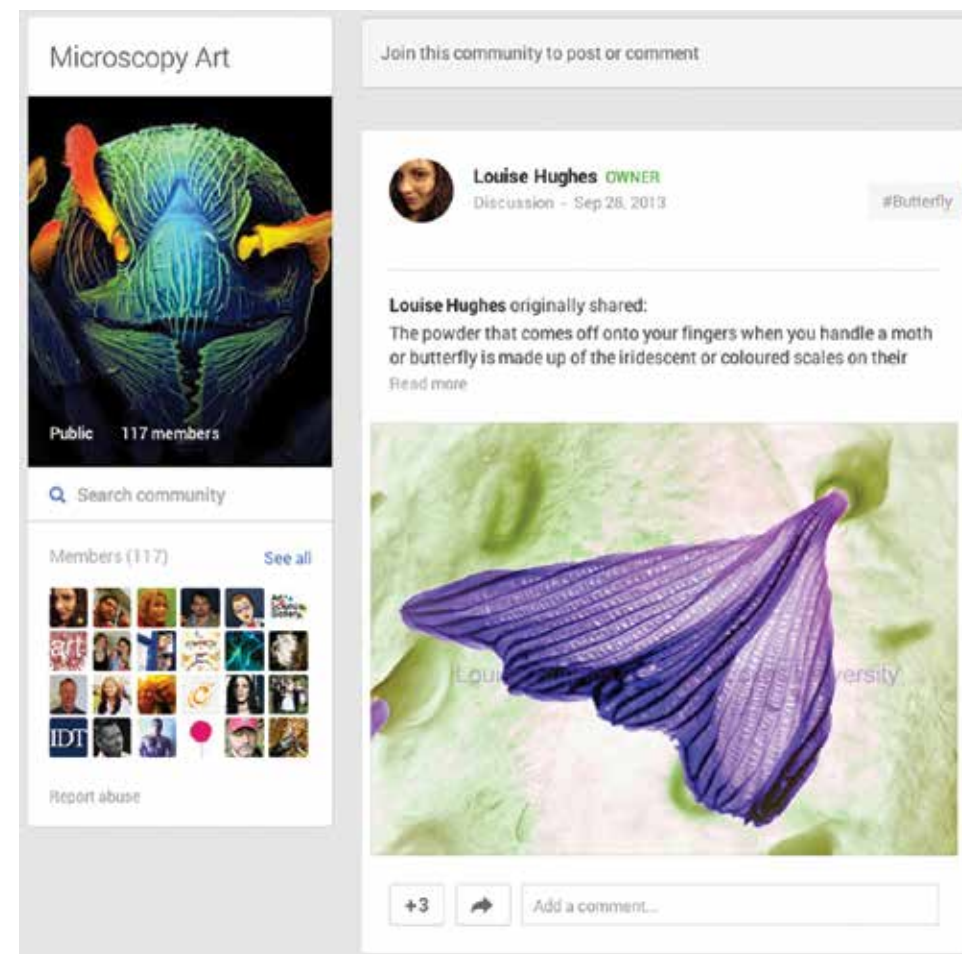
research outside of science and general issues surrounding academia and science such as open access publishing or gender and diversity issues.

Using social media has also helped me to raise my own profile, something which I believe is essential for an early career researcher. The initial links I made on Twitter have led to tangible offline benefits: New research collaborations (one resulting in an interdisciplinary joint grant proposal), invited talks, panel memberships and writing opportunities. I often wonder if the reason that senior and well-established researchers do not see the benefits of social media is that they can draw back on their 'traditional' networks and opportunities arising from these.

One site does not fit all

For me, Twitter has been the most useful social media website to grow my professional network and advance my professional development. Other people prefer other websites; because they find them easier to use, because they allow longer text pieces or because all of their contacts already use a specific platform. Facebook is now the second most used website globally (Alexa, 2013) and therefore most companies, publishers, societies and other scientific organisations have a Facebook presence to engage their customers and members. Anyone can set up a Facebook page and there are a lot of examples of individuals (e.g. research group leaders or science bloggers) posting updates and news.

Google+ has a lot of active science users (Science on G+, Science Sunday, 2013), some of which use the 'Google Hang Out' video chat feature for science discussions and innovative outreach activities. During 'Virtual Star Parties' (Virtual Star Party, 2013), astronomers join the conversation live from their telescopes. Similarly, microscopists have given live demonstrations of their machines and made them available on YouTube (Kerlin, 2013). Google+ also hosts virtual communities based around



specific topics. One example is the 'Microscopy Art' community launched by Louise Hughes in which members can showcase their artwork (Microscopy Art, 2013, Figure 2).

Compared to other social networks, LinkedIn (Linkedin.com) might currently be the most professional one. It allows users to upload their CVs and skills, as well as to search for jobs and companies. Research-specific networks with a focus on publications are ResearchGate (ResearchGate.net) or Academia.edu.

Social media for outreach

Do you want to make your science more accessible

to non-expert audiences? Weblogs and video or photo sites such as YouTube (YouTube.com), Vimeo (Vimeo.com), Flickr (Flickr.com), Imgur (imgur.com), Instagram (Instagram.com) or even Pinterest (Pinterest.com) are perfectly suited for this purpose. The main advantage of making such content available via a social media platform rather than as static files embedded in a website is the potentially wider reach and the feedback gained through comments, 'likes', and shares.

My blog (Plantcellbiology.com) allows me to write about science in much more engaging and creative ways compared to writing for a scientific audience. My blog statistics show that such content is highly

popular. There is a constant flow of readers looking for the basic and 'creative' plant cell biology information such as the question 'if the Golgi apparatus was a superhero, what would it be?' Thinking about this is fun and takes me back to the fundamental principles of my research topic – a Golgi superhero would probably be a bike courier with a cape and a bubble shooter gun. If you do not have the time to run a blog, why not contribute as guest writer to existing community blogs? For example I occasionally write for the 'Annals of Botany' Blog (aobblog.com), which regularly publishes guest posts. Alternatively you could set up a group blog and take it in turns to write. A great example is the recently launched 'John Innes Student Voice Committee' group blog, which is entirely run by PhD students ('John Innes SVC', 2013).

Where to start?

Which social media website should you use? It depends what you want to achieve, how much time you want to invest and what you enjoy. Asking how to use Twitter is a bit like asking how to watch TV (Amsen, 2013). There is no right or wrong way to do it - it depends on your preferences. It is entirely possible to use social media to just read and consume content without ever posting anything. In fact, many scientists 'test the water' for several months or longer until they decide to take a leap and share something themselves. Other people post links to interesting science articles and news bits without ever writing anything personal.

Should you have one online presence or should you separate your personal from your professional persona? Personally, I use Twitter mostly for work purposes and Facebook for more personal updates and keeping in touch with friends. Others are more or less private in their online endeavors.

What do you want to achieve? Do you want to access information more quickly, expand your professional network or engage different audiences?

Who is your audience? How much time do you want to spend on keeping up a social media presence? There are a number of tricks to use social media more efficiently such as sorting contacts into themed lists and only keeping up with selected groups on a regular basis, using smartphone apps or linking profile updates via third-party services (e.g. Hootsuite or IFTT). Are there innovative ways to split the workload? Colleagues of mine who run the Twitter feed for our Faculty's Inclusion and Diversity Action Group (@FHLSIDAG) have each designated 'Tweet Days' which ensures regular updates throughout the whole week.

It is also important to think about evaluation of your efforts and it is worth remembering that numbers of views reflect reach but not necessarily engagement. A recently launched toolkit provides plenty of advice on how to measure the online impact of scholarly resources (TIDSR, 2013). The major challenge of running a public social media account is to constantly remember that everything posted can be read by anyone anytime and possibly out of context. When some of my tweets went viral during the '#overlyhonestmethods' meme (Gonzales, 2013), I went back to re-read them a few times until I was satisfied that they were indeed harmless, even taken out of context.

Further reading

If you feel curious and would like to learn more or maybe even give it a go, there are a lot of resources and guides available that explain social media in more detail. Good starting points are Holly Bik's and Miriam C. Goldstein's 'Introduction to social media for scientists' (Bik and Goldstein, 2013), Andy Miah's 'A to Z of social media for academics' (Miah, 2013) or Mark Carrigan's extensive collection of social media resources (Carrigan, 2013). I also recently published a commentary about the use of social media in plant sciences in which I discuss the general Do's and Don'ts of using social media in a professional scientific context (Osterrieder, 2013).

Conclusion

Social media is an additional tool to help scientists with the things we already do: research dissemination, networking, reading, writing and outreach activities. If you look at this article's reference list, it contains a good mixture of websites, blog posts and online resources side to side with 'old-style' publications. Some of the online content might eventually have found its way into 'old-style publishing systems' such as opinion pieces or articles in societies' bulletins, but most of it would not have a place in our established communication channels. Social media can help scientists to communicate more quickly and creatively in addition to our traditional media outlets and to extend their reach beyond the 'usual suspects'.

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Anne Osterrieder is a Research and Science Communication Fellow at Oxford Brookes University, a role which allows her to split her time between doing science and communicating it to as many different audiences as possible. Her research focuses on studying the structure and function of the plant Golgi apparatus using advanced fluorescent imaging microscopy techniques. Over the last years Anne has been

involved with a wide range of public engagement events and science communication training initiatives for researchers. She is especially interested in the use of social media as tool to support research, career development and science communication. Anne blogs at <http://www.plantcellbiology.com> and tweets at @AnneOsterrieder.



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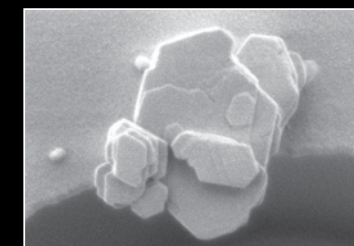
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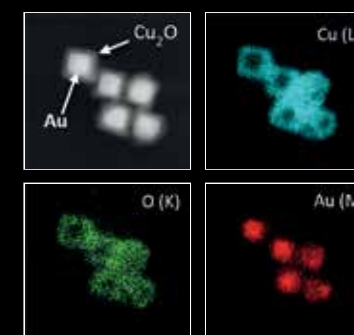
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Global/Asia

+81 3 3504 6111

contact@nst.hitachi-hitec.com

www.hitachi-hitec.com/global/em/

Europe

+49 2151 643 5331

eminfo@hht-eu.com

www.hht-eu.com

Americas

+1 800 548 9001

emdwebsite@hitachi-hita.com

www.hitachi-hita.com

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