

Twitter As a Professional Development Tool for Physicists

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Abstract

Social media is ubiquitous in popular culture and is used by individuals and businesses to build a brand and interact with customers, but it is much more than a repository for advertising and banal statements about the state of an individual's lunch choices. Twitter, in particular, can be used to develop professional connections, share news regarding research and teaching, and collaborate with colleagues around the world in real time. This can be especially important for faculty teaching in smaller departments, where the opportunities for professional interactions with diverse colleagues are limited, although physicists from departments of all sizes can benefit from effective use of Twitter.

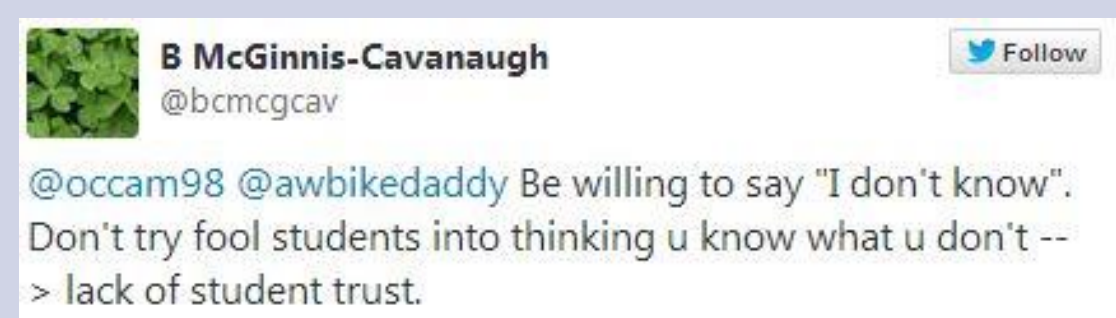
Professional Development

AAPT and related organizations do a wonderful job of facilitating the conversation between physicists about how to be better at our jobs. Whether it's through something like the New Faculty Workshop, a regional or national meeting, The Physics Teacher, or online archives like COMPADRE, there are numerous ways for physicists to get involved in the never-ending search to find better ways to help more people learn more about physics. Twitter allows us to continue that conversation and extend it from a series of discrete nexus points to a continuum of interconnected conversations.



This is also true for me. I began using Twitter as a professional tool after the 2011 AAPT Summer Meeting in Omaha, NE. During that meeting, I met a number of colleagues who used Twitter, and, unlike past conferences, the conversations did not stall shortly after we all returned to our home institutions. Through Twitter, I began a conversation with a colleague about how to revise our advanced lab class, and look forward to collaborating with her on a project which will allow our students to collaborate on research. I get (and am able to share) advice on textbooks, course structure, ideas for innovation, and how to deal with the myriad issues that come up when teaching.

This can be especially valuable for new teachers. Twitter user and physicist John Burk (@occam98) sent out this question: “please welcome my new mentee and 1st yr physics teacher, @awbikedaddy to twitter! What's the best piece of advice u've got 4 a new Teacher?” [4] He got numerous responses, ranging from the immensely practical, to the wise and insightful, to the seemingly planted for this poster:



In addition to these informal professional development collaborations, there are ongoing efforts to create a more structured network. An example of this is the Global Physics Department (@Global_Phys), run by Andy Rundquist (@arundquist), and held on Wednesday nights during the academic year. In the Global Physics Department, physics faculty gather online to listen to a speaker discuss pedagogy, curricula, or other issues affecting the teaching of physics. The presentations are recorded and archived online at <http://globalphysicsdept.org/>.

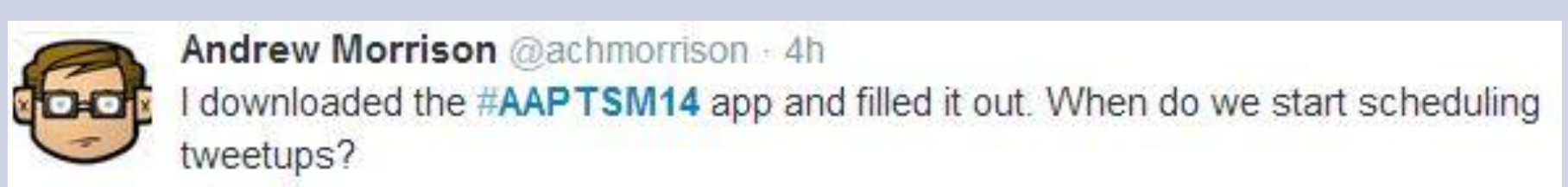
At Conferences

As mobile technology continues to spread, the utility of networks such as Twitter in the dynamic environment of a conference increases. Anyone with a smartphone can download an app containing scheduling information, maps, and other logistical info, but in many ways this just replaces the paper copy of the conference program that used to be ubiquitous. Twitter allows for real-time interaction of conference goers – and those who were not able to attend – no matter where each person is.

- **#AAPTSM14** – Every conference that I have attended for years, from professional meetings such as AAPT or APS, to purely social ones, now comes with its very own hashtag. Everyone tweeting about the meeting is asked to use the same hashtag, and then all of the conversation is findable using one search. There is usually someone associated with the conference who is tweeting “official” information, such as program changes, important announcements, or trying to create awareness of particular events, along with a “social media team” (of which I am one for this meeting).



- **#tweetups** – Twitter is a fantastic tool for arranging dinners, meetups, or other gatherings, especially of people you don't know.



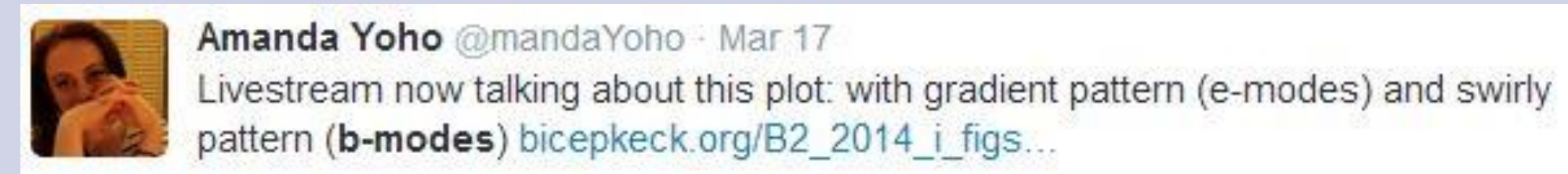
- **Livetweeting** – livetweeting is when a conference attendee tweets highlights of talks. The tweets are usually accompanied not just by the conference hashtag, but also a session identifier for reference. For example, “Fascinating poster on using Twitter for professional development highlights numerous uses. #AAPTSM14 PST2G08.” Sometimes there will be an attached photo of one of the slides of a talk which is of particular interest. These livetweets can spark a conversation, creating an active discussion rather than the passive one of a bunch of people sitting in a room listening to a speaker.

Breaking News

On March 16, 2014, my Twitter feed suddenly started to explode, figuratively, of course, with the news of a possible discovery of a literal explosion on the grandest scale – B mode gravitational waves that would be evidence of cosmic inflation. In real time, if you were following enough astrophysicists (or people who retweeted astrophysicists), you could see and be part of the conversation as experts around the world first digested the rumors:



And began to see the data, livestreamed and livetweeted:



And started writing analyses of what they were seeing and what it meant, or might mean:



While we still do not know what the BICEP2 results will ultimately tell us, Twitter provided the opportunity to be “in the room,” as it were, with experts, sharing in the excitement of discovery. It was also fun to be able to break the news to my colleague, a cosmologist, because the news spread faster on Twitter than anywhere else.

Outreach

While there is great value in having a dedicated network of physics colleagues on Twitter, chances are you will interact with a much wider audience. This provides numerous opportunities for outreach of various kinds.

- If you write a blog, Twitter is an easy way to spread awareness to a wide (and potentially very wide) network of possible readers.

- Some faculty use Twitter to interact with their students, many of whom are dedicated Twitter users. If you're concerned about oversharing, some of these faculty have multiple accounts – one for posts which their students will see, and one for other kinds of posts.

- Creating public awareness – is there an event coming up on your campus, in your department, or in nature, such as an eclipse?

- Addressing social issues/being a citizen-scientist – accounts such as @realscientists, which uses use weekly guest tweeters to discuss not just their work, but also the life of a scientist, as well as numerous other individual accounts, are active fora for discussions including issues such as work-life balance, the demands of tenure, and bias against women/minorities, among others.

Links, References, and Acknowledgements

If you'd like to get started with Twitter, obviously the first place to go would be <http://twitter.com> to sign up. There are numerous apps for PCs, some embedded in browsers and some not, as well as for smartphones and tablets.

For resources on tools that you can use to build your network, check out the following sites:

- <http://quantumprogress.wordpress.com/2012/03/23/building-your-professional-network-with-twitter-google-reader-and-a-few-other-tools/>
- <http://www.briansolis.com/2008/10/twitter-tools-for-community-and/>
- <http://blog.sciencegeekgirl.com/2009/03/16/why-twiddle-with-twitter/>
- <http://fnoschese.wordpress.com/2011/11/11/physics-teaching-2-uh-oh/>

1. <http://www.statisticbrain.com/twitter-statistics/>
2. <http://twittercounter.com/pages/100>
3. <https://twitter.com/drmagoo/status/479632655802433537>
4. <http://quantumprogress.wordpress.com/2011/07/17/twitter-the-welcome-wagon-for-new-faculty/>

Special thanks go to my entire network of physics tweeps, including (but not in any way limited to): @rjallain, @SteveMaier, @physicsgirluk, @mandaYoho, @Sargent, @NoisyAstronomer, @wslaton, @realscientists, @AstroKatie, @olganagtegaal, @physicscarp, @aatishb, @scicurious, @BlackPhysicists, @SaraDoesScience, @distractions, @maalmeida85, @rutherfordcasey, @fnoschese, @achmorrison, @pobguy, @sciencegeekgirl, @chrisgoedde, @jossives, @MsPoodry, @hbarw, @arundquist, ...

Introduction

Twitter is an enormously popular social networking tool, with nearly 650 million registered users worldwide sending over 9000 tweets every second., or nearly 800 million per day. [1] Tweets are short messages, limited to 140 characters, containing blurbs of thought, images, links, and snippets of conversation. Each user follows others, and is in turn followed by other users, creating a densely woven communication network in which what one person says can quickly travel to users all over the world. As might be expected, the most commonly followed Twitter accounts are those of celebrities and public figures, including pop stars like Katy Perry (@katyperry), whose account has over 54 million followers, and politicians such as President Barack Obama (@BarackObama), whose account has 44 million followers. [2]

As it grew, Twitter became an extremely high speed news (and rumor) aggregator, with reporters reputable and not rushing to be the first to share breaking news. During the “Arab Spring” of 2011, Twitter was used to coordinate protest events and share information as users could contact each other directly, rapidly, and in large numbers. You can follow the National Oceanic and Atmospheric Administration (@NOAA) and get breaking news on dangerous weather situations. Local news organizations and police departments tweet traffic alerts and crime updates. Public officials, celebrities, athletes and other well-known figures answer questions and chat with users all over the world, many of whom would rarely get a chance to interact with them.

However, Twitter's not just for pop culture, news, and chatting with friends. Nearly seven million people follow NASA (@NASA). [2] More than two million follow astrophysicist Neil deGrasse Tyson (@neiltyson). [2] And for the vast majority of us who are not celebrity scientists, Twitter can be an immensely valuable professional tool, for networking, professional development as both a physicist and as a physics teacher, discussion of scientific topics, dissemination of important science news, community building, and public outreach.

For this poster, I reached out to my network on Twitter with the following question: [3]



Many of the following results arose from the conversations that followed that question.

Networking

Physics departments at many universities are not large, and even large departments can be split into numerous small groups by subfield. As a result, many of us have few, if any, colleagues we see on a regular basis who share our research interests. Conferences and meetings fulfill some of the need for meeting with potential collaborators, colleagues, and other interested parties, but those meetings can be cost- and time-prohibitive, and the questions that come to mind don't always happen when we're on a plane to the next AAPT or APS meeting. Let's say you have a question that has come up that you don't have an answer to, and either a Google search isn't giving you the results you want, or it's something without a known answer that you're just thinking about. You can tweet about it, and everyone who follows you will see it. If they don't know the answer, or if they just think it is an interesting question, they can *favorite*, or, preferably, *retweet* (RT) your tweet, amplifying its audience to all of their followers. For even greater reach, you can add *hashtags* (such as the #physics in the initial question I posted), and anyone following that hashtag will see your tweet.



Obviously, if we know the person we want to talk to, a phone call, or an email, or a text may suffice to facilitate any conversation, but Twitter can allow us to reach beyond our circle of known friends and colleagues.

