

# Use of Social Media in Mathematical Research

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July 22, 2013

# Outline

- 1 What are social media?
- 2 Making use of social media in research
- 3 Other uses of social media

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# Old-fashioned networking = “scientific socializing”

- Attending and organizing conferences and minisymposia
- Institute
- Inviting and visiting scientists
- Serving on committees for societies, granting councils, etc.
- E-mail

A lot of this might be called “schmoozing”. This is not what I’m referring to.

# Examples of social media

- **Email**: “like letters, just faster”
- **Blog**: = web log, a medium for web publishing, no official peer review (WordPress.com)
- **Twitter**: micro-blogging, e.g. conference hash-tags
- **YouTube, Vimeo**: videos of research results
- **GitHub**: sharing and collaborating on source code
- **arXiv**: preprint sharing community (math, CS, physics)
- **Mendeley**: sharing research libraries
- **Polymath project**: on-line collaborative mathematical research
- **Stack Exchange, MathOverflow**: Q&A forums
- **LinkedIn, ResearchGate, Academia.edu**: academic communities
- **Google Scholar profile**

# Context

- Many many recent articles on the importance of outreach, societal engagement, social media, etc.

## Amanda Alampi (NYU)

*“One of the most important lessons I’ve learned is that social media is not just marketing for academic work. Social media platforms can inform every step of the research process: helping faculty get a pulse on movement in their industry, providing feedback during research and then assisting in the promotion of the published work.”*

- SFU’s “engaged” vision is something many other universities are echoing
- Granting agencies stress public outreach through programs, prizes, and some grant application requirements (e.g., NSERC PromoScience)

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# Main activities of an academic researcher

- Research:
  - Reading and collecting
  - Thinking and reflecting
  - Experimenting, recording and synthesizing
  - Writing and publishing
  - Sharing, networking and collaborating
- Teaching:
  - Undergraduate and graduate classes
- Administration:
  - University committees
  - Society work
  - Peer review for journals and granting councils
  - Public outreach

## Places where social media can help

[Adapted from René Schneider and Jasmin Hügi, Geneva]

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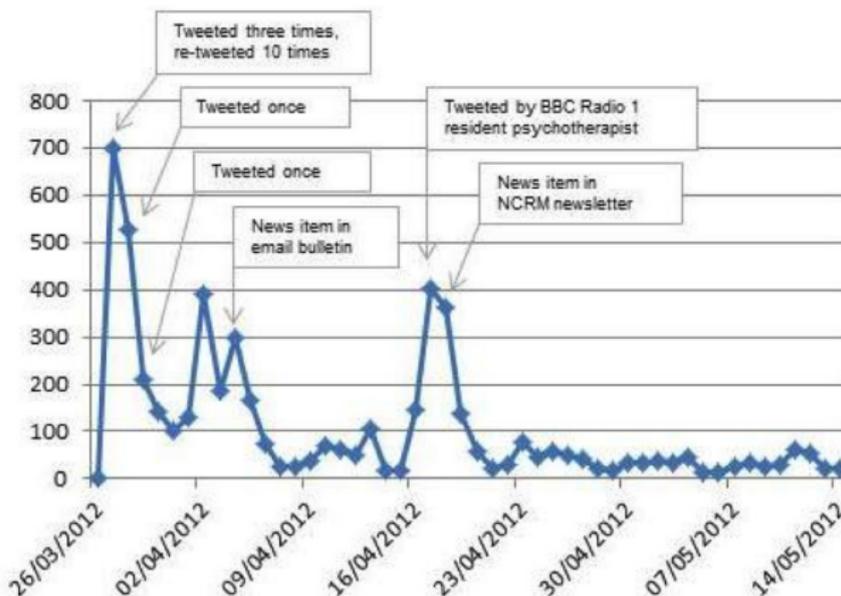
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# Example: Publicizing/promoting your research

Downloads of a journal paper as a function of tweets



[Source: K. Puustinen and R. Edwards, London School of Economics, 2012]

# Where to start?

## Step #1: increase your visibility

- Create a good web page
- Get a Google Scholar profile, ResearcherID account, and keep them up to date



Change photo

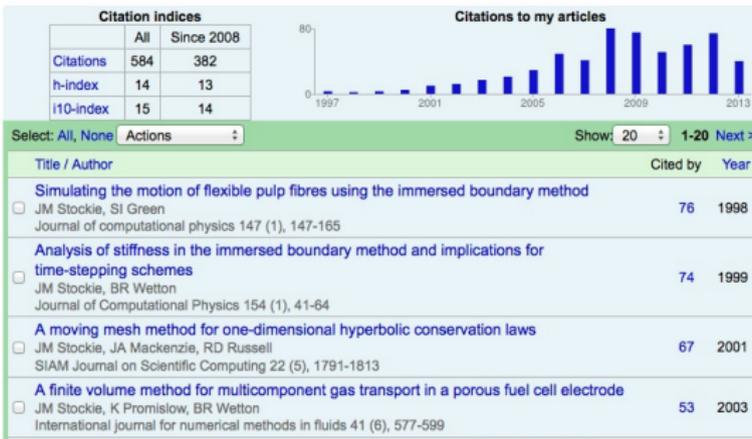
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# Where to start?

## Step #2: get (and stay) informed

- Follow at least a couple of blogs regularly, and maybe even start your own blog
- Go to special sessions at society meetings on social media
- Talk to your colleagues about social media

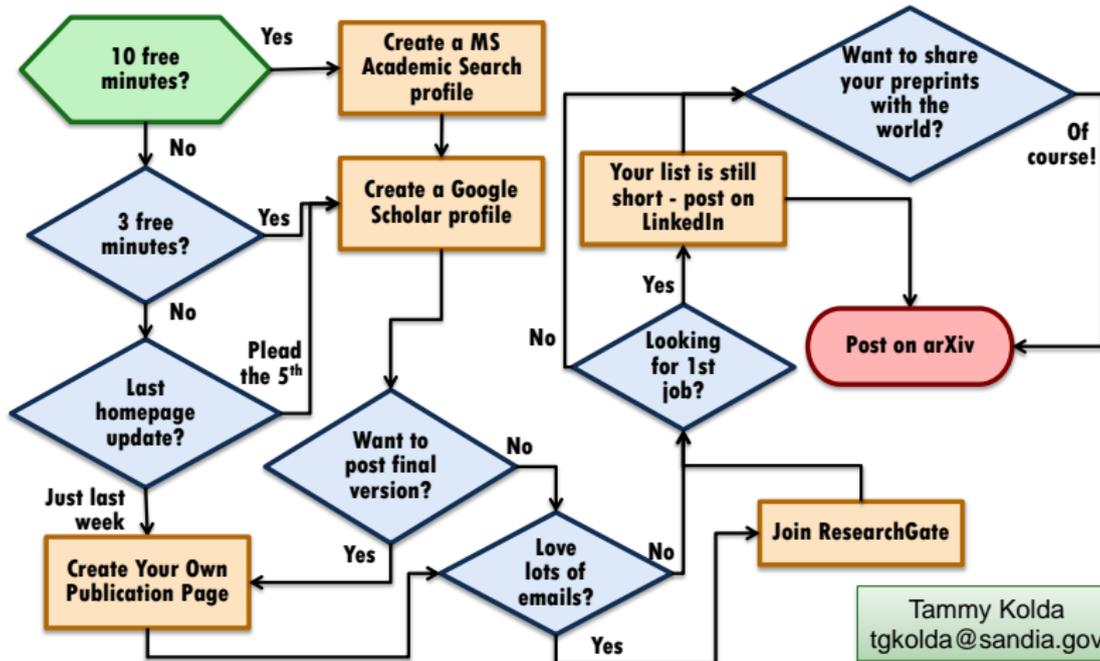
# Societies

SIAM is fairly active in social media:

- Twitter hash tags for every conference (#SIAMAN13)
- Blogs
- Minisymposium in San Diego (July 2013) on “Establishing a professional presence in the online world: Unraveling the mysteries of social media and more” with
  - Tamara Kolda (Sandia): “Maintaining an online publication list”
  - David Gleich (Purdue): “Tools for social media”
  - Nick Higham (Manchester): “Blogging and tweeting for mathematicians”
  - Karthika Muthukumaraswamy (SIAM): “On the verge of a SIAM community blog”

[Source: <http://nickhigham.wordpress.com/2013/06/30/>]

# Where to Post My Publication List?



# Why should a scientist blog?

- To right the wrongs of the mainstream media and shed light on breaking news
- Inform and inspire the public
- Disseminate research results
- Find collaborators
- Report on preliminary results, “test out” your ideas before publishing

[Source: Muthukumaraswamy]

# What makes a good blog?

- Have a theme
- Express opinions (or not)
- Be unique
- Provide useful information
- Be controversial (?)
- Post regularly
- Keep posts short and interesting (informal)

[Source: Higham]

# Blogs that I follow

- Terence Tao (UCLA): hardcore mathematics
- Nick Higham (Manchester): numerical analysis, math software,  $\text{\LaTeX}$
- SIAM Connect: applied math news in 5 separate blogs
- Nassif Ghoussoub (UBC): Canadian science policy
- Matt Might (Utah): programming, computer science, cool stuff

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# Social Media in Teaching and Education

A totally separate issue is use of social media use in education . . .

## ETNA (Enhanced Training Needs Analysis) Survey, 2012

- Concludes that a careful and appropriate use of social media can enhance (but not necessarily improve) the quality of the learning experience.
- YouTube is by far the most popular tool, while Facebook and Twitter lag well behind.
- There is a strong need for training in the use of social media.

## Related issues

- **Crowd-funding:** requires marketing, customer development, “swag”,  
.....

# Closing words

With all of that said . . .

## NETWORKING

# Real connections

*Meeting up in person is still the best way to make contacts and ease career moves.*

BY AMY MAXMEN

Justin Hall was close to finishing his PhD in crystallography at Oregon State University in Corvallis when, in 2010, he attended a Gordon Research Conference on protein interaction dynamics in Galveston, Texas. He felt uncertain about his future, and was open to switching sectors — as long as the science stayed

interesting. Over dinners and coffees he talked about biophysics with scientists from universities, hospitals and industry. “I just wanted to hear about people’s science, so I asked all sorts of scientists lots of questions,” says Hall.

In the lift he talked to Xiayang Qiu, director of structural biology at the pharmaceutical company Pfizer in Groton, Connecticut. Qiu was impressed with Hall’s excitement about

ing their networks early, ideally during graduate and postdoctoral training. The Internet has facilitated networking, but in-person events often come with extra benefits. Whereas professional networking platforms online can list a person’s achievements, an in-person introduction reveals more about social skills, attitude and confidence, so contacts may be more likely to reach out when a relevant opportunity comes their way.

By finding the right events and following a few basic guidelines, early-career researchers can become deft networkers.

## WHEN AND WHERE

Networking venues range from conferences to themed events held during happy hour at a bar. Hall prefers meetings with fewer than 100 attendees, which includes many of the Gordon conferences, because conversations tend to happen easily in small groups. ▶

11 JULY 2013 | VOL 499 | NATURE | 243

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