

SOCIAL NETWORKING IN SCIENCE: THE GOOD, THE BAD, AND THE UGLY

SEAN LINDEN

ASTR 8500

What is Social Media?

- **“Forms of electronic communication through which users create online communities to share information, ideas, personal messages, and other content ”**
 - Merriam-Webster definition
- **For scientists this spans a wide range of different web environments:**
 - Twitter, Facebook, LinkedIn, Arxiv, ResearchGate, Blogging etc.

facebook

72%

of internet
users are.

48%

use it as their **primary**
news source

3

million links
shared every
hour

e.g. “Official” Astronomer Facebook Group



1

billion new
tweets every 3
days

500

million users
per day

5,530

tweets per **second**
during the Japanese
earthquake &
tsunami

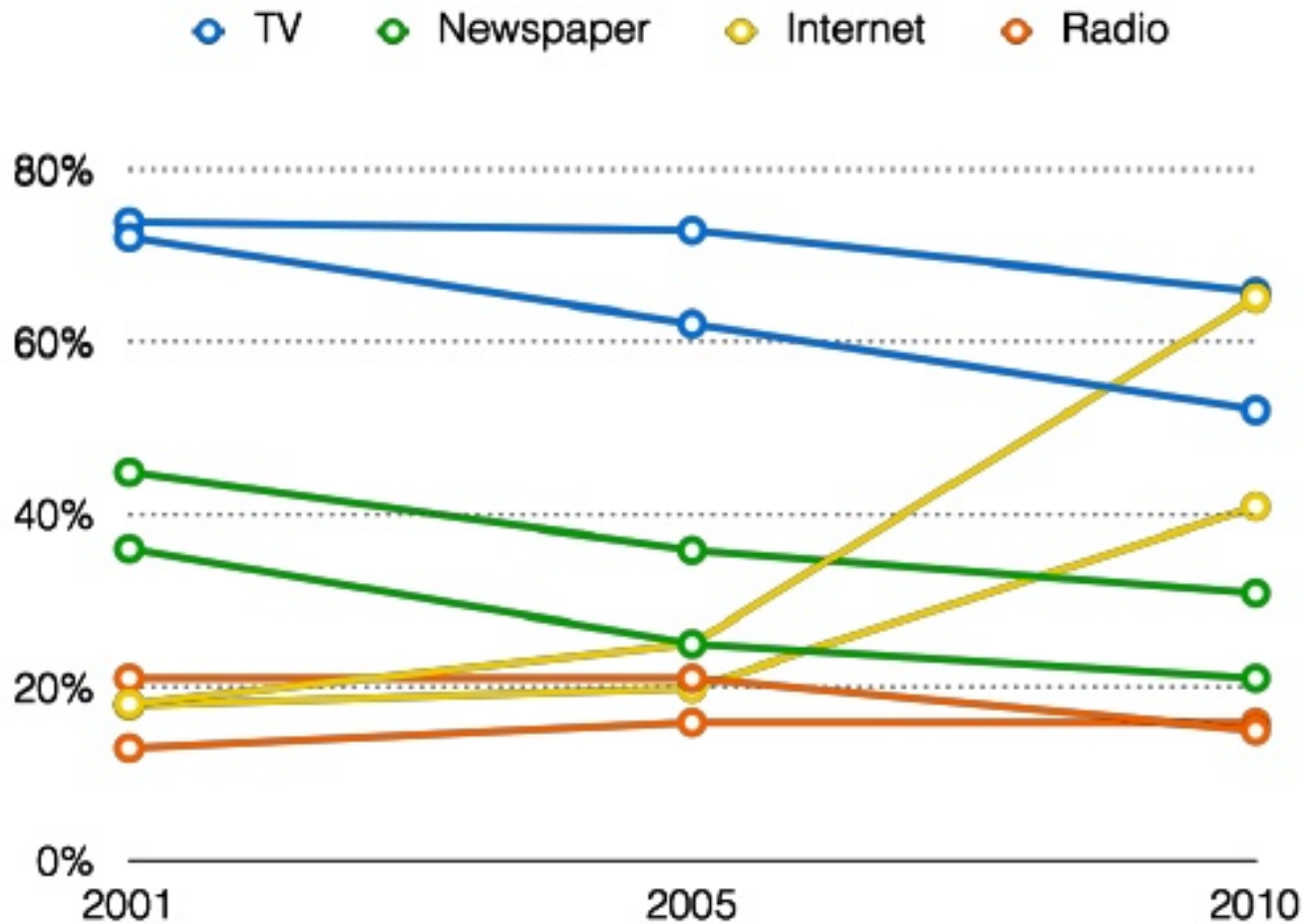
Taylor Swift – 76 Million Followers

Barack Obama – 73 Million Followers

Neil deGrasse Tyson – 5.09 Million Followers

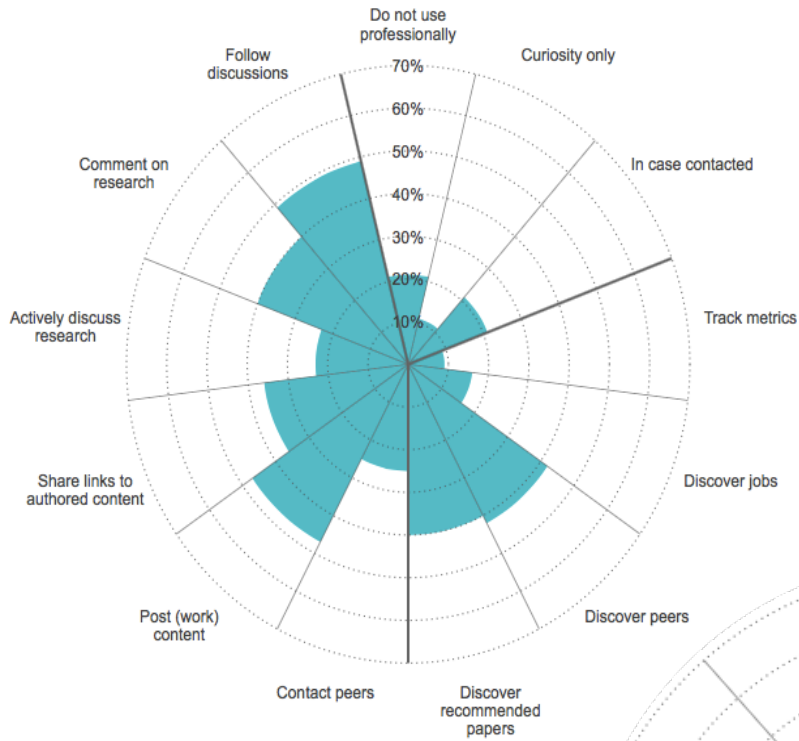
Bill Nye – 2.84 Million Followers

Where do People Actually Get their News?

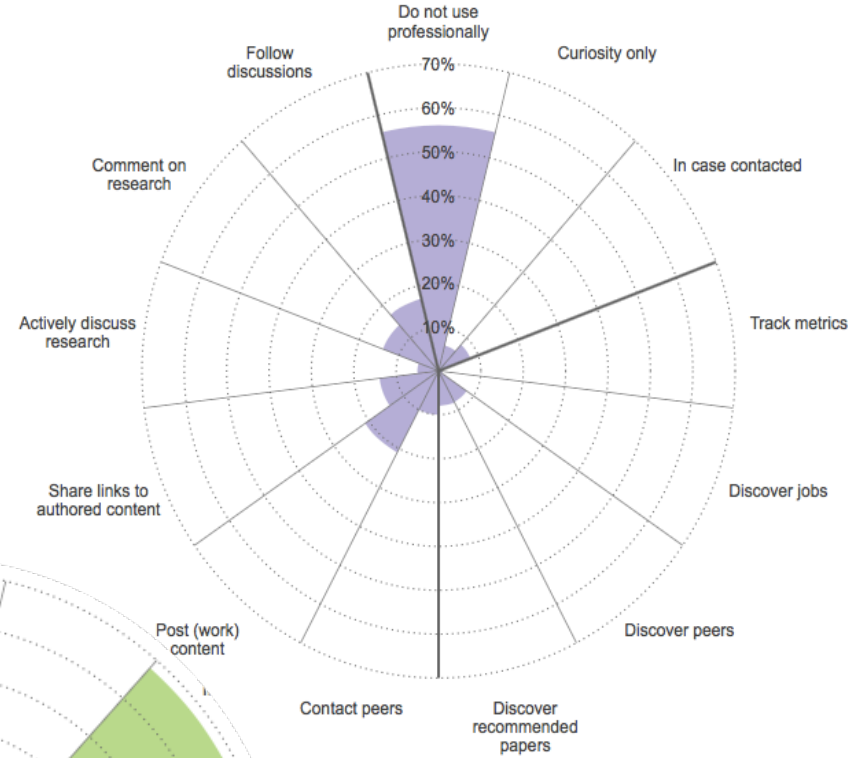


PEW Research Center, Dec 2010

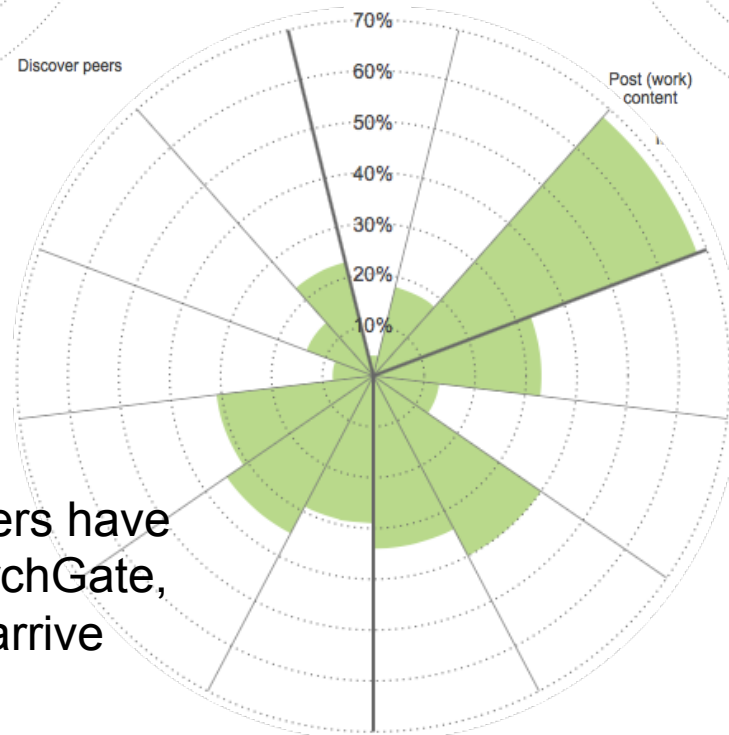
How Do Scientists use Social Media?



Twitter



Facebook



“4.5 million researchers have signed up for ResearchGate, and another 10,000 arrive every day”

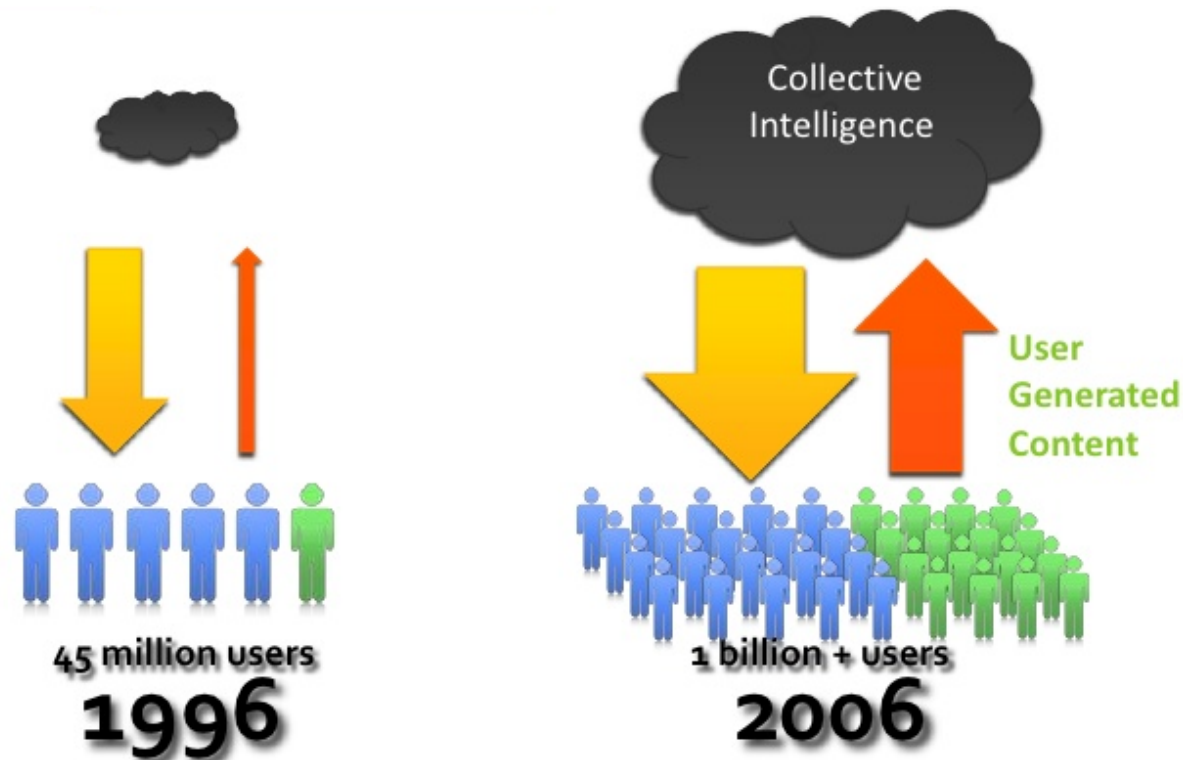
Nature **512**, 126–129 (14 August 2014)

WHY IS SOCIAL MEDIA IMPORTANT TO SCIENTISTS?

- **Social media can enhance professional networking**
 - Post updates from conferences (e.g. #AAS)
 - Circulate information about professional opportunities
- **Social media can improve online visibility and citations**
 - Twitter mentions were positively correlated with rapid article downloads (Arxiv)
- **Social media can improve research efficiency**
 - Keep up with new research developments and tools
- **Social media can foster public outreach**

WHY IS SOCIAL MEDIA IMPORTANT TO SCIENTISTS?

- **We now rely on social networking and crowd sourcing for science**
 - Galaxy Zoo, Radio Galaxy Zoo, Higgs Hunters



Problems With Social Media

- **Public vs. private communication**
- **Conversation etiquette**
- **Constant influx of new information**
 - Can require heavy time commitments
- **Many options when it comes to sites/
tools to use**

Problems With Social Media



Problems With Social Media

- **Public vs. private communication**
- **Conversation etiquette**
- **Constant influx of new information**
 - Can require heavy time commitments
- **Many options when it comes to sites/ tools to use**
 - Each site may have a different target audience
- **Filtering un-trustworthy research/ information**

THE SCIENCE NEWS CYCLE

Start Here

Your Research

Conclusion: A is correlated with B ($p=0.56$), given C, assuming D and under E conditions.



...is translated by...

UNIVERSITY PR OFFICE (YES, YOU HAVE ONE)

FOR IMMEDIATE RELEASE:
SCIENTISTS FIND
POTENTIAL LINK
BETWEEN A AND B
(UNDER CERTAIN CONDITIONS).



...which is then picked up by...

NEWS WIRE ORGANIZATIONS

A CAUSES B, SAY
SCIENTISTS.



...who are read by ...

THE INTERNETS

Scientists out to kill us again.

POSTED BY RANDOM DUDE

Comments (377)

OMG! i kneeww it!!

WTH?????????



...then noticed by...

We saw it on a Blog!
A causes B all the time
What will this mean for Obama?
BREAKING NEWS BREAKING NEWS BREA

CNC Cable NEWS



...and caught on ...

4 LOCAL EYEWITLESS NEWS

WHAT YOU DON'T
KNOW ABOUT "A" ...
CAN KILL YOU!
MORE AT 11...



...eventually making it to...

YOUR GRANDMA

I'M WEARING THIS
TO WARD OFF "A"



Where does this leave us?

- **Social media use continues to grow rapidly as a viable communication and news source**
 - As does the miss-appropriation of scientific results
- **Those that can navigate this new frontier hold a competitive advantage**
 - Some funding prioritize public impact

RESOURCES

- Bik, H. M. & Goldstein, M. C., “An Introduction to Social Media For Scientists”, **PLoS Biol.** 2013 Apr; 11(4): e1001535.
- Priem, J., Costello, K., & Dzuba, T., “Prevalence and Use of Twitter Among Scholars”, Poster at **Metrics 2011: Symposium on Informetric and Scientometric Research**, New Orleans, 2011.
- Tachibana, C., “A Scientists Guide to Social Media”, **Science**, DOI: 10.1126/science.opms.r1400141
- Van Noorden, R., “Online Collaborations: Scientists and the Social Network”, **Nature** **512**, 126–129 (14 August 2014)
- Wilcox, C., “Social Media: The importance of being Online”, Presentation, SlideShare
- Wilcox, C., “Its time to e-Volve: Taking Responsibility for Science Communication in a Digital Age”, **Biol. Bull.** April 1, 2012 vol. 222 no. 2 85-87
- Zhu, Y. & Procter, R., “Use of blogs, Twitter and Facebook by PhD Students for Scholarly Communication: A UK study”, **Manchester eScholar Services**, The University of Manchester (2012)
- <http://www.adweek.com/socialtimes/twitter-vs-facebook-stats/502309>
- <http://www.people-press.org/2010/09/12/americans-spending-more-time-following-the-news/>
- <http://www.statista.com/statistics/273018/number-of-internet-users-worldwide/>
- <http://www.fredcavazza.net>