

What all those scientists on Twitter are really doing

Analysis reveals that female researchers are over-represented on the social-media site and that mathematicians and life scientists are less likely to use it.

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20 April 2017

In the first broad look at the behaviour of thousands of scientists on Twitter, researchers have found that [women are better represented on the social-media site](#) than on scientific papers. The team also noted that scientists tended to stick with researchers in their area of expertise while on the social-media site.

The study¹, published last week in *PLOS ONE*, is a more representative look at how scientists use the site than previous work, says Kaitlin Costello, an information scientist at Rutgers University in New Brunswick, New Jersey, who was not involved in the paper. Past studies have targeted specific fields or groups of researchers to analyse their behaviour on Twitter.

To find a broad range of tweeting researchers, Cassidy Sugimoto, an information scientist at Indiana University Bloomington, and her colleagues started with a list of scientific titles from the US Bureau of Labour Statistics and Wikipedia. They then combed Twitter lists for people with these titles. This initial search generated a group of “seed” scientists. The team then searched lists that contained these seed researchers, looking for more people with scientific titles.

Making the list

Sugimoto and her colleagues repeated the process until they stopped finding new researchers on the Twitter lists. They ended up with 45,867 scientists from around the world. The team used this list in their analysis of who the scientists were, what they were tweeting about and [who was in their Twitter networks](#).

They found that social and information scientists were over-represented on Twitter, compared with the US workforce, but mathematicians and life scientists were under-represented. The team also found that the ratio of female to male scientists on Twitter (0.62) was greater than the ratio of female to male authors on US-based scientific papers (0.43).

“This is a really interesting finding,” Sugimoto says. Male scientists tend to have their papers cited more than female scientists, and there are more male full professors than female ones at US universities, she notes. So Twitter “may have more participation from women than we would expect”.

The team also explored how scientists connect with other researchers by looking at when people follow, retweet and mention each other. Scientists mostly interact with others from their field, Sugimoto found, mirroring what happens in academia.

Socializing scientists

When the team looked at what the scientists were sharing on Twitter, the top 20 websites included [other social-media platforms](#), such as Instagram, Facebook and YouTube. News sites including *The New York Times* and *The Guardian* also made the list. The only scientific URL in the top 20 was nature.com.

“The majority of tweets are personal,” says Sugimoto, and this doesn’t surprise her. “It’s about your coffee. It’s the news. It’s politics. It’s not necessarily scientific in nature.”

But Costello has an alternative explanation. Scientists link to news stories about research studies to bypass the paywall that many scientific articles hide behind, she says, adding that it’s a way to communicate results to everyone.

In the future, Sugimoto hopes to expand her method to catch more scientists and to see how they interact with the public.

“I think it’s a really exciting and promising methodology,” says Jason Priem, an information scientist and co-founder of the non-profit organization Impactstory, based in Sanford, North Carolina. The company tracks the reach of scientific studies, data and webpages online. “It’s about being able to put your finger on the pulse of science, to get out and listen to what’s happening on the scientific street

corner.”

Nature | doi:10.1038/nature.2017.21873

References

1. Ke, Q., Ahn, Y.-Y., Sugimoto, C. R. *PLoS ONE* **12**, e0175368 (2017).