



SCIENTISTS AND SOCIAL MEDIA, 2016

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DEPARTMENT OF LIFE SCIENCES COMMUNICATION

UNIVERSITY OF WISCONSIN-MADISON

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Public engagement activities are more and more important for today’s science. Among other venues, social media offers a potential outlet for scientists to connect with their peers, participate in the post-publication peer review process, and engage with lay audiences. Based on a 2016 survey of University of Wisconsin-Madison scientists, this report provides information on public engagement activities of scientists at an American R1 university, including their social media use and their attitudes toward social media and lay audience engagement.

Findings

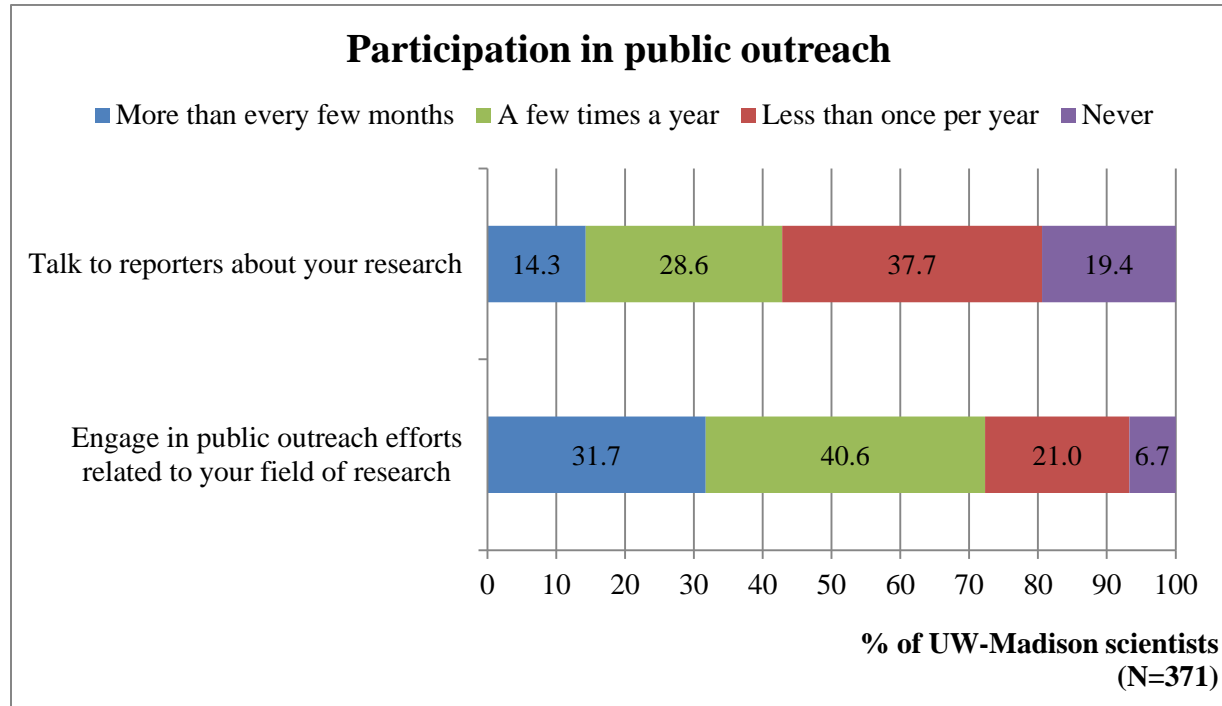


Figure 1. Respondent participation in public outreach activities related to their research. UW-Madison scientists reported being active in their outreach efforts. (5 point scale, with 0=‘Never,’ 1=‘Less than once per year,’ 2=‘A few times a year,’ 3=‘Every few months to once a month,’ and 4=‘A few times a month.’ ‘Every few months to once a month’ and ‘A few times a month’ were combined into ‘More than every few months.’ Missing values excluded.)

Overall, University of Wisconsin-Madison scientists are engaged in public outreach activities. Well over half of the participants (72%) reported engaging in public outreach efforts at least a few times a year, with less than 7% never engaging (Figure 1). Additionally, just under half (43%) of participants talked with reporters about their research at least a few times a year, with an additional 38% speaking with them less frequently.

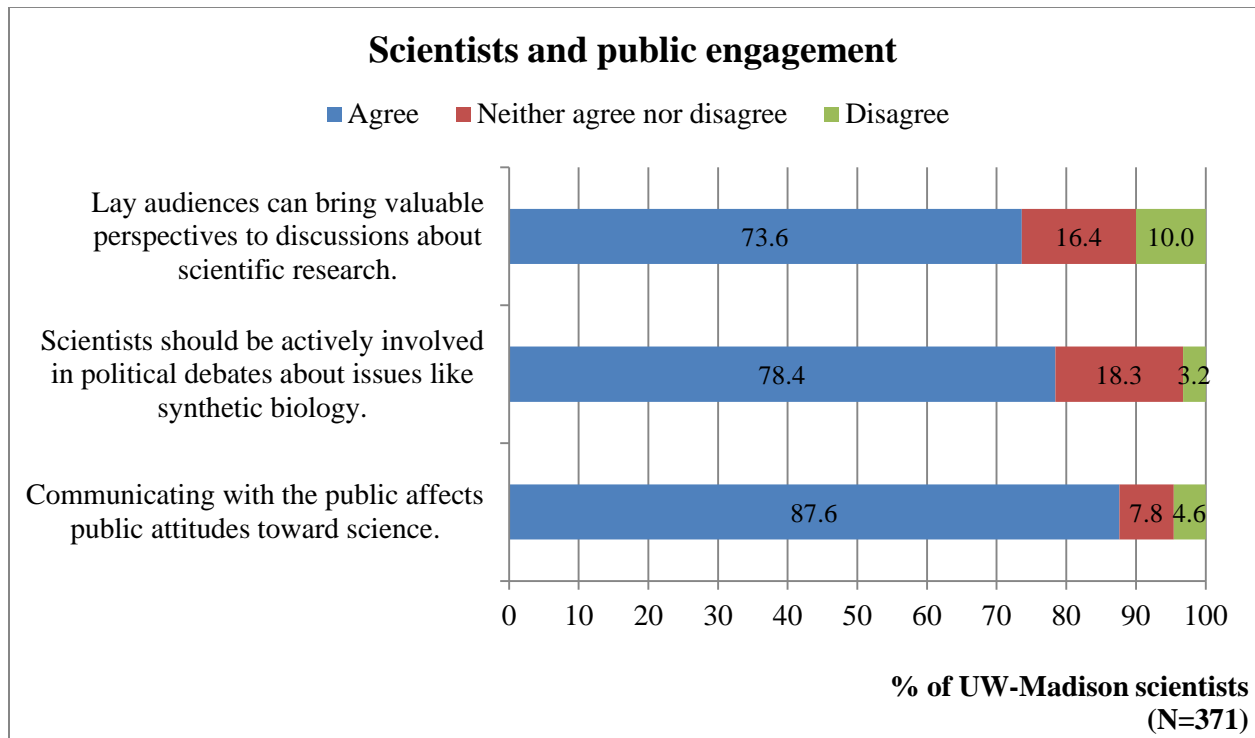


Figure 2. UW-Madison scientists’ opinions on public engagement. Respondents generally held positive views. (5 point scale, from 0=‘Strongly disagree’ to 4=‘Strongly agree.’ Missing values excluded.)

Backing up their outreach activities, the majority of scientists held positive views toward public engagement (Figure 2). Almost three quarters (74%) of the respondents thought that lay audiences brought valuable perspectives to science discussions. The majority also believed that scientists should be involved in political debates about potentially controversial scientific issues (78%) and believed that public attitudes toward science can be influenced via communication efforts (88%). Not only do UW-scientists hold positive views toward public engagement, but they are also actively engaged.

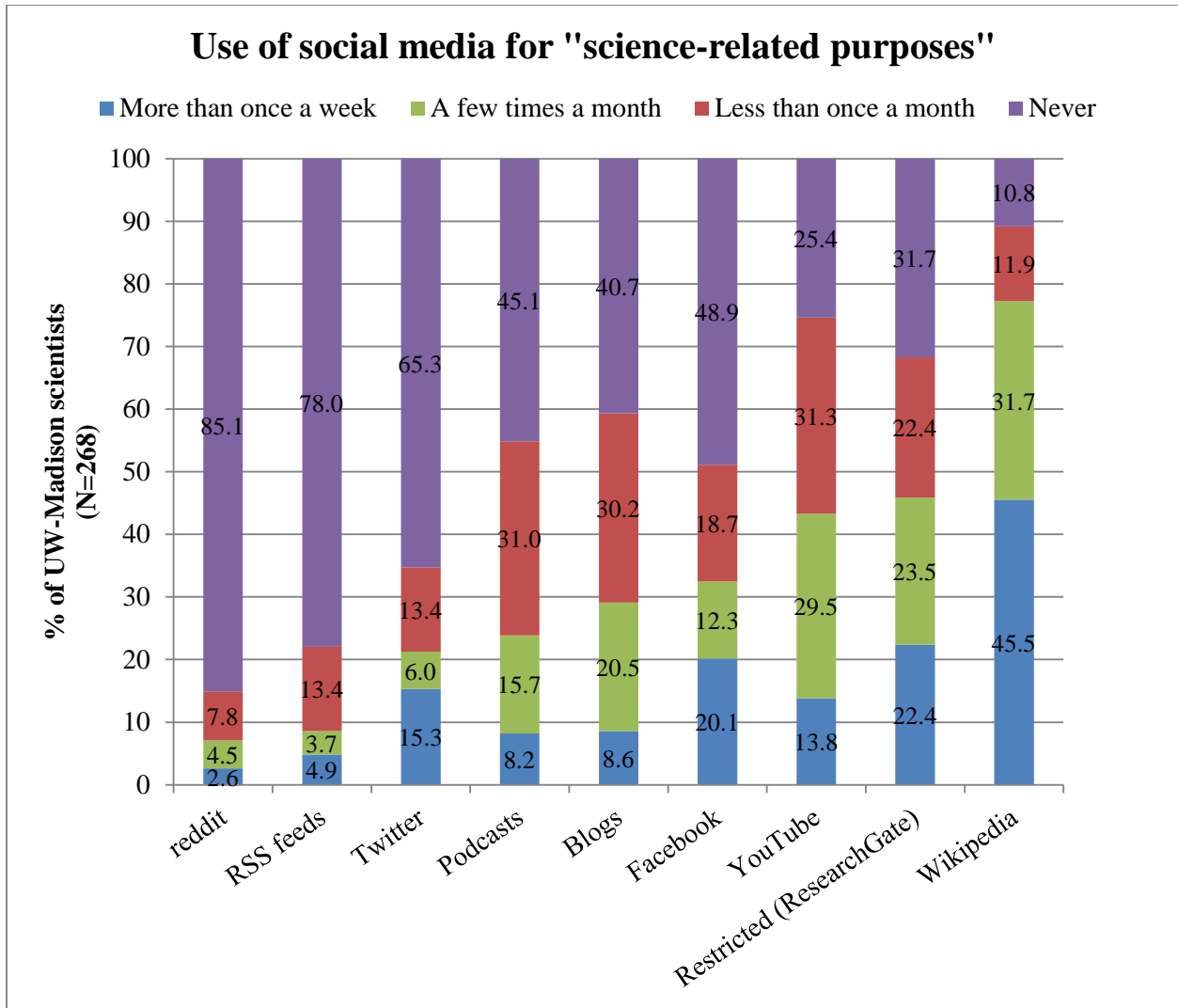


Figure 3. Use of specific social media platforms for “science-related purposes” by UW-Madison scientists who use social media. Wikipedia was the most commonly used platform for science-related purposes, while reddit was used the least. (5 point scale, with 0=‘Never,’ 1=‘Less than once a month,’ 2=‘A few times a month,’ 3=‘Once to a few times a week,’ and 4=‘Every day.’ ‘Once to a few times a week’ and ‘Every day’ were combined into ‘More than once a week.’)

Turning to social media, of the University of Wisconsin-Madison scientists who were surveyed, the majority indicated they use social media (72%). Figure 3 presents the scientists’ use of specific platforms for “science-related purposes.” Respondents reported using Wikipedia the most frequently (77% at least a few times a month). Wikipedia was followed by restricted online communities (such as ResearchGate), YouTube, and Facebook (46%, 43%, and 33%, respectively). Reddit, RSS feeds, and Twitter were never used for science related purposes by large numbers of scientists (85%, 78%, and 65%, respectively).

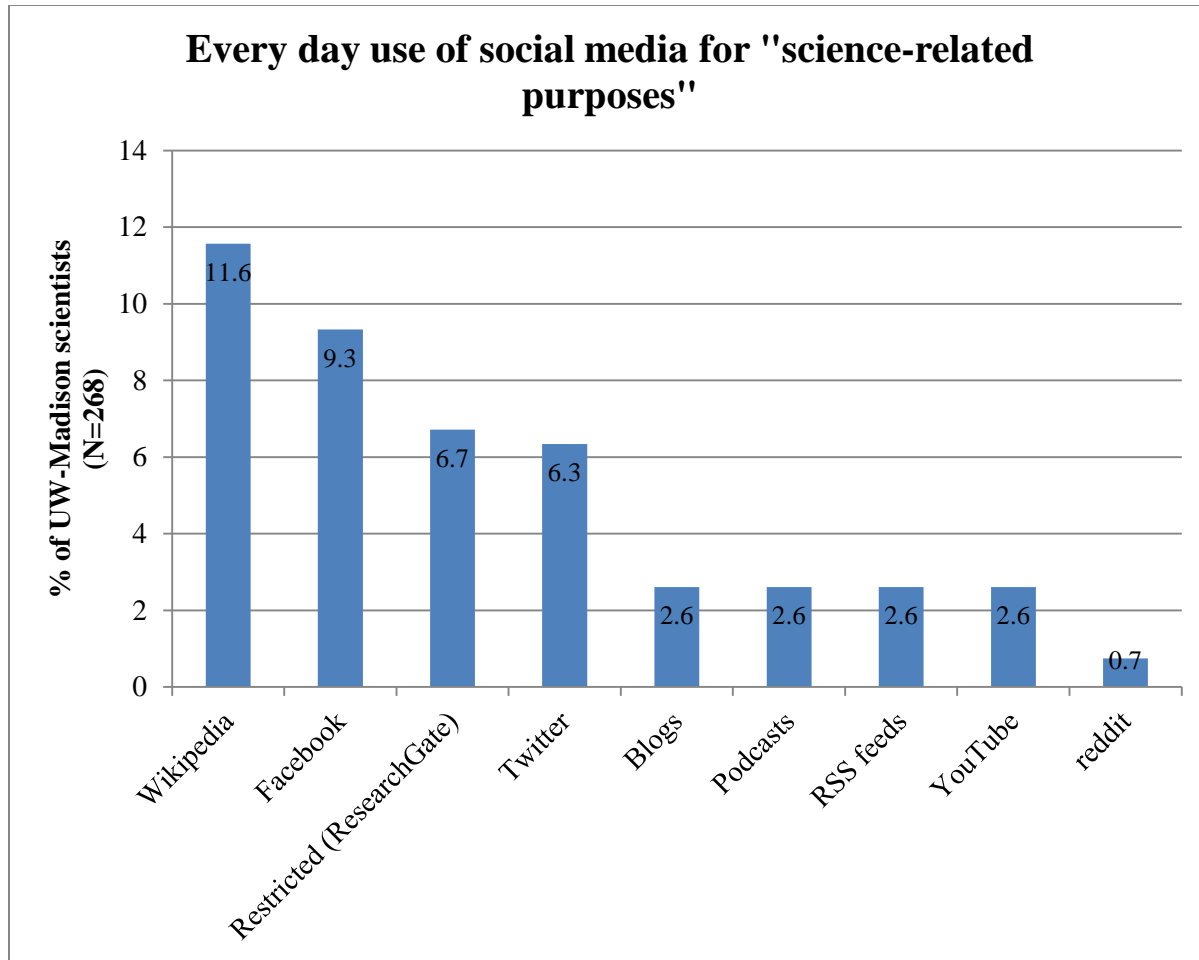


Figure 4. Every day science-related use of specific social media platforms by UW-Madison scientists who use social media. Wikipedia topped the list with 12% of respondents using the platform every day. (5 point scale, from 0='Never' to 4='Every day.')

Focusing on social media platforms used on an everyday basis for science-related purposes, Wikipedia was again at the top of the list with 12% of respondents (Figure 4). Facebook, restricted online communities (e.g., ResearchGate), and Twitter were also used by a number of respondents every day.

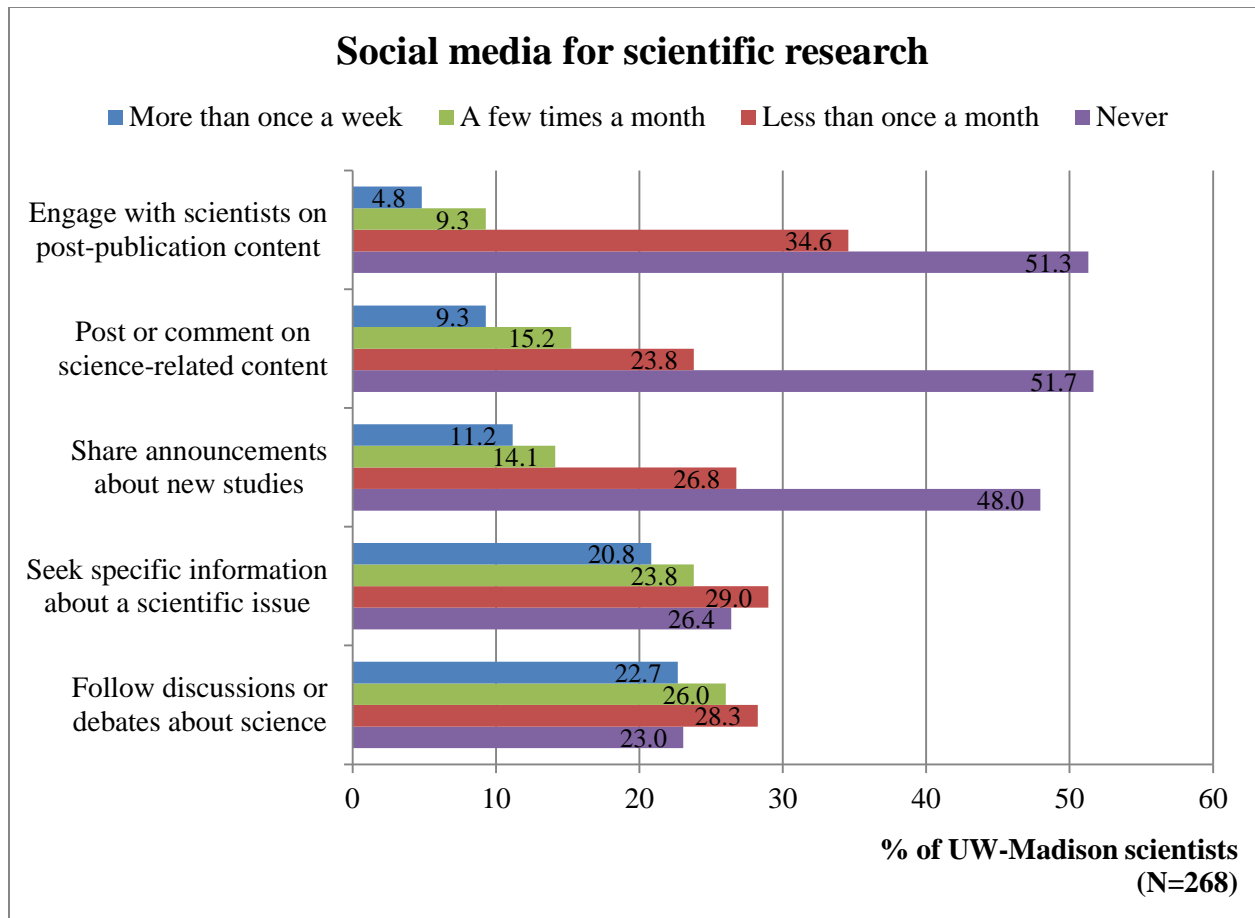


Figure 5. UW-Madison scientists’ use of social media for scientific research **not** related to their own field. The most common social media uses were seeking specific information about scientific issues and following scientific discussions. (5 point scale, with 0=‘Never,’ 1=‘Less than once a month,’ 2=‘A few times a month,’ 3=‘Once to a few times a week,’ and 4=‘Every day.’ ‘Once to a few times a week’ and ‘Every day’ were combined into ‘More than once a week.’)

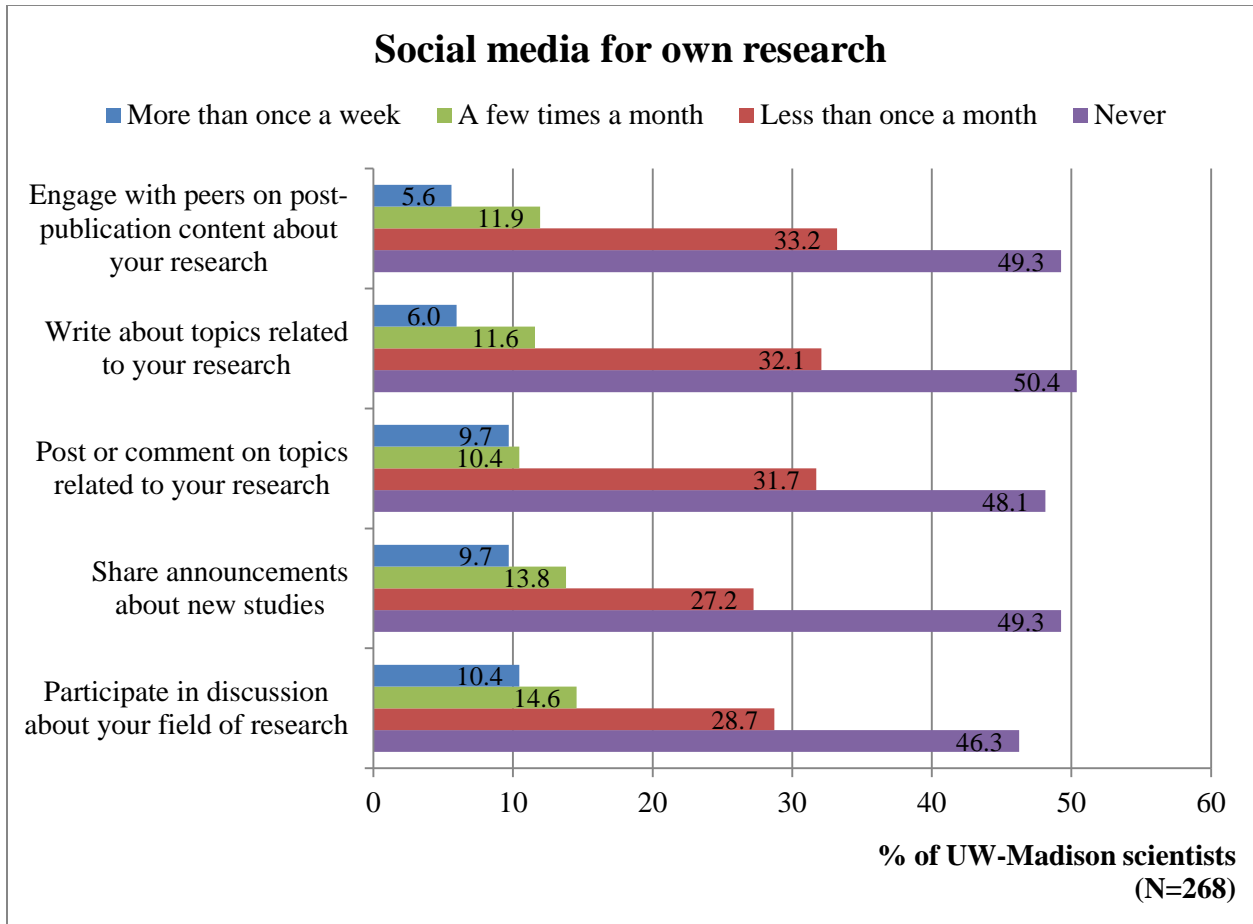


Figure 6. UW-Madison scientists’ use of social media for their own research. Scientists engaged in each of the social media activities about equally. (5 point scale, with 0=‘Never,’ 1=‘Less than once a month,’ 2=‘A few times a month,’ 3=‘Once to a few times a week,’ and 4=‘Every day.’ ‘Once to a few times a week’ and ‘Every day’ were combined into ‘More than once a week.’)

For scientific research not related to their own field, about half of the scientists used social media to find information about science issues and to follow scientific discussions or debated (Figure 5). Only about a fourth of respondents never did these activities. Scientists engaged in the following social media activities for their own research with almost the same frequency as for general scientific research: engaging on post-publication content, posting or commenting on science topics, and sharing announcements about new studies. Importantly, about half of the scientists engaged with their research and their peers using social media (Figure 6). About 18% of the scientists used social media to engage with their peers on post-publication content about their research at least a few times a month, pointing to one of the potential uses of social media as platforms for continued peer review. At this same frequency, at least a few times a month, 18% of scientists wrote about their research, 20% posted or commented about it, and 25% participated in research related discussions.

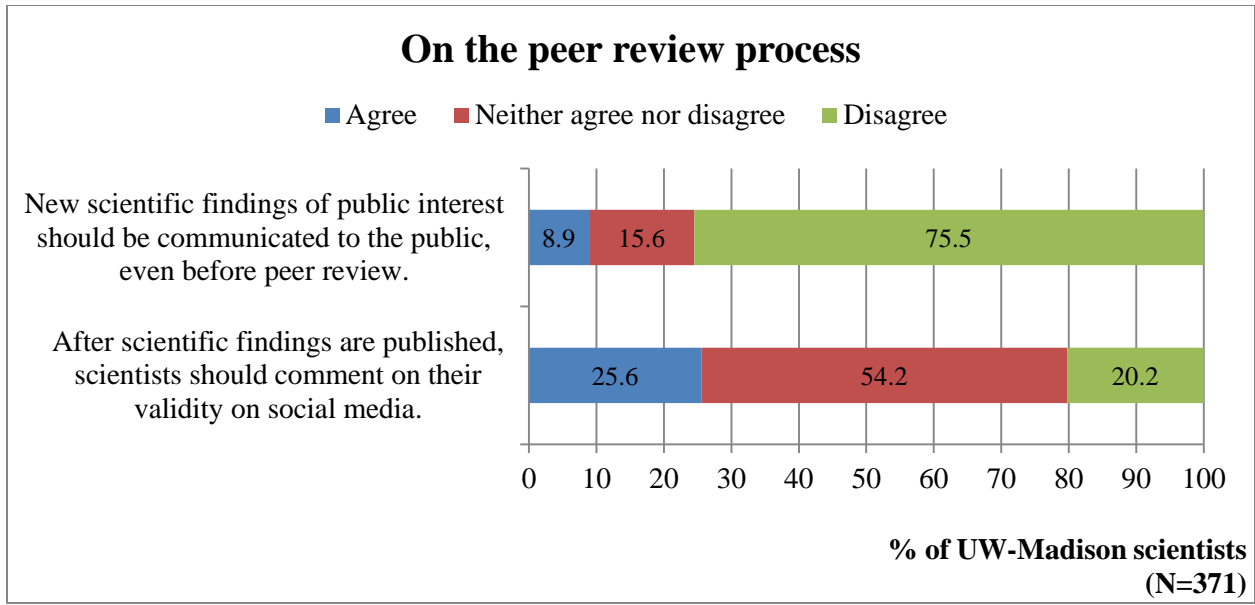


Figure 7. Respondent attitudes related to the peer review process. (5 point scale, from 0=‘Strongly disagree’ to 4=‘Strongly agree.’ Missing values excluded.)

Building on the 18% of scientists who used social media to engage with their peers on post-publication content about their research at least a few times a month and the 33% who used it less than once a month, respondents did not think it was acceptable to communicate new scientific findings prior to the peer review process (76% disagree), but thought it was more acceptable to engage in post-publication peer review on social media (only 20% disagree). Around 26% of scientists thought it was acceptable to comment on the validity of published scientific findings, while over half were ambivalent (Figure 7).

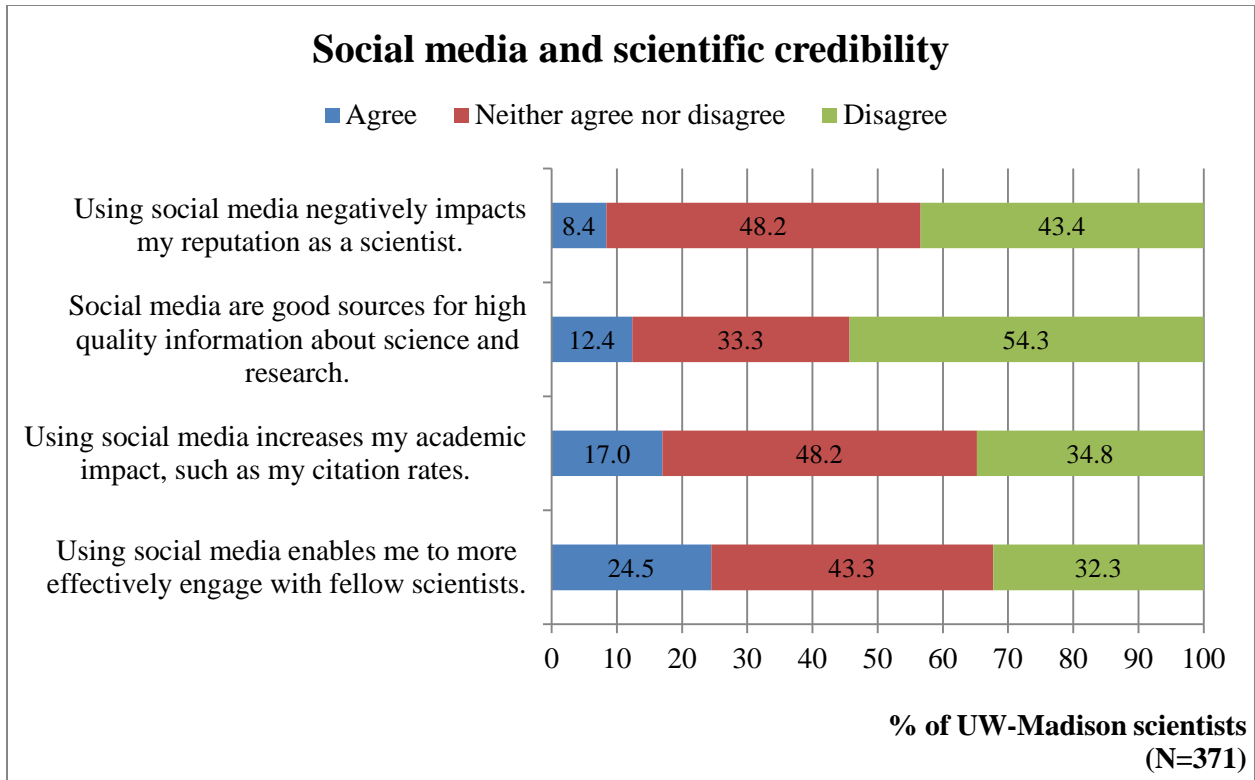


Figure 8. Scientists’ attitudes about the impact of social media on scientific credibility. Attitudes were generally ambivalent. (5 point scale, from 0=‘Strongly disagree’ to 4=‘Strongly agree.’ Missing values excluded.)

Looking at opinions about scientific credibility and social media, UW-Madison scientists’ were mostly ambivalent (Figure 8). While many of the respondents did not think that social media negatively impacted their reputation (43%), almost half remained unsure or ambivalent (48%). Likewise, 17% of the scientists thought that using social media increased their academic impact while 48% remained in the middle category. A full fourth of respondents (25%) viewed social media as an effective tool for engaging with their peers.

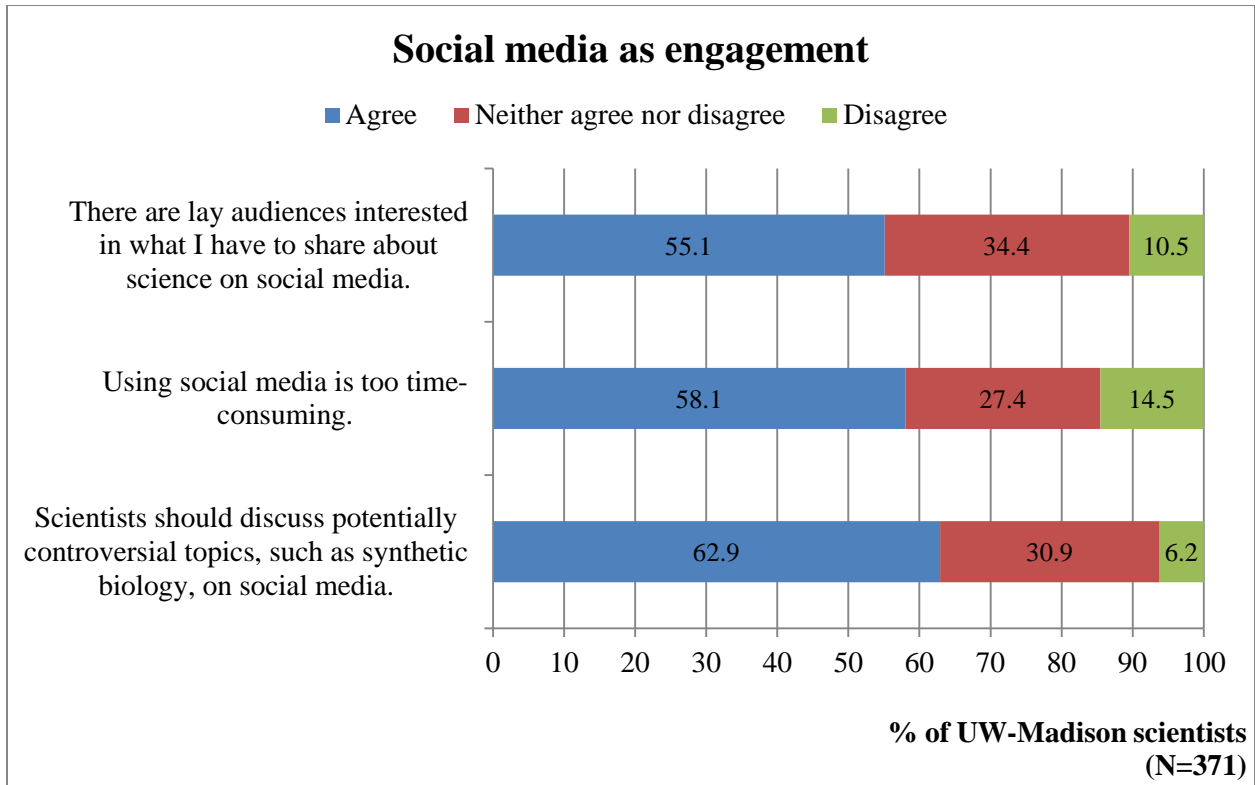


Figure 9. Views of social media as a public engagement tool. Overall, scientists held positive views toward social media used for public engagement. (5 point scale, from 0=‘Strongly disagree’ to 4=‘Strongly agree.’ Missing values excluded.)

Turning away from social media’s impact on scientific credibility and toward its potential as a tool for public engagement, respondents’ opinions were more favorable (Figure 9). The scientists thought that there were interested lay audiences on social media (55% agree) and that social media is an appropriate forum for discussing potentially controversial scientific topics (63%). However, the majority (58%) also viewed social media as too time-consuming.

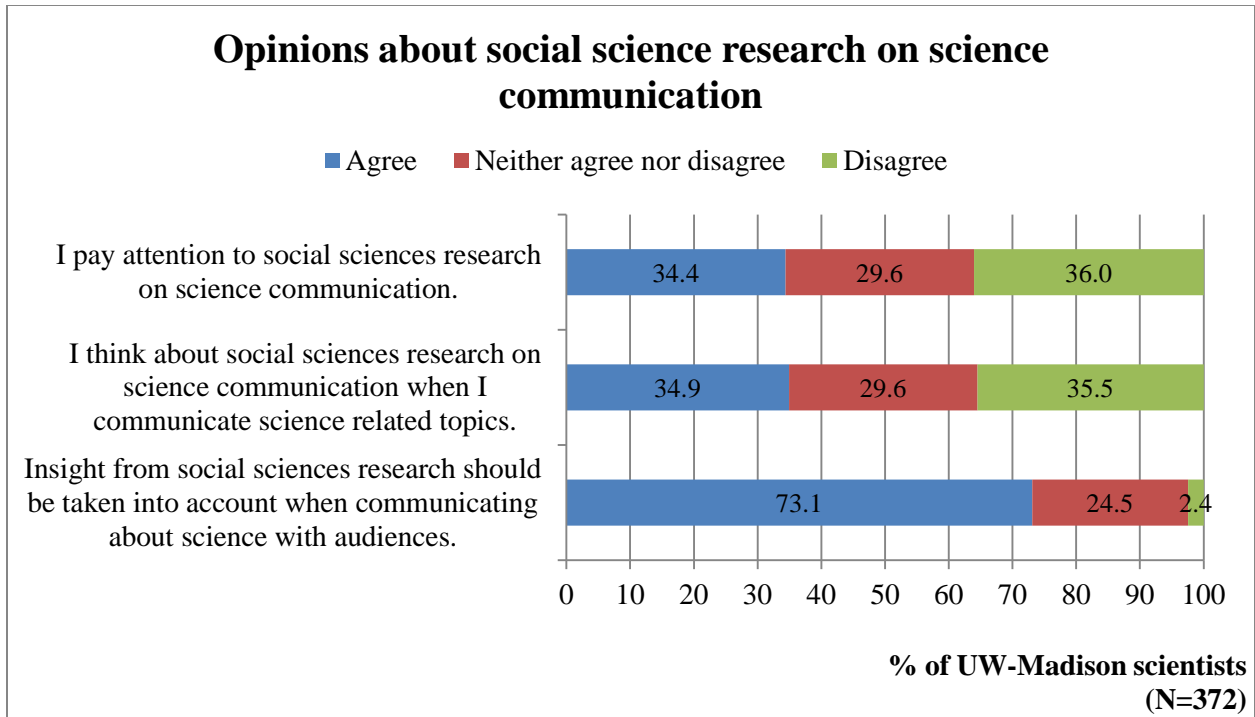


Figure 10. Scientists’ opinions on social science research about science communication. The majority of respondents thought that this research should be considered when engaging in communication efforts. (5 point scale, from 0=‘Strongly disagree’ to 4=‘Strongly agree.’)

Lastly, the UW-Madison scientists saw value in using social science research on science communication when engaging in communication efforts (Figure 10). About 73% of scientists thought that social science research should be considered when communicating science to audiences, with 35% reporting that they thought about it at the time.

Conclusions

Overall, UW-Madison scientists are engaged in outreach activities, both on social media and otherwise, and see value in their engagement activities. While opinions about the uses and effectiveness of social media as a scientific engagement tool vary, a considerable portion of scientists are already using social media and a forum for engagement, either within the scientific community or externally.

About the survey

In order to obtain a sample representative of tenure-track scholars at a large research institution, we began with a complete list of fulltime tenure-track and tenured faculty engaged in biological and physical sciences research at the University of Wisconsin-Madison. Information was obtained from the websites of relevant departments, colleges, and schools. We identified 1,229 scientists for participation in the survey. The survey distribution and collection was administered by the University of Wisconsin Survey Center.

The survey was fielded from April to June 2016 using a multiple wave contact procedure. The first contact was a postal invitation to the survey, advising participants to expect an email with the survey. Shortly after, the invitation email with a link to the survey was sent. Two reminder emails were then sent to non-responders. Lastly, a paper survey was mailed to those who had not yet taken the survey. The final response rate was 30.3%, resulting in a final sample size of $N=372$.

Of those who responded, 70.1% were male and 29.3% were female. The mean number of years since receiving their doctorate in our sample was 23.2 years ($SD = 11.8$ years), with a median of 24 years. On a 7-point Likert scale ranging from 1= 'Very liberal' to 5='Very conservative,' the mean ideology of our sample was 2.44 ($SD = 0.92$) for economic issues and 1.58 ($SD = 0.81$) for social issues.

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