UW-Madison Faculty Perspectives on Public Engagement

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A REPORT OF THE SCIENCE, MEDIA, AND THE PUBLIC RESEARCH GROUP
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INTRODUCTION

The ongoing COVID-19 pandemic has been a powerful reminder of the importance of public engagement, requiring meaningful efforts from both bench scientists and social scientists. This topline report provides an overview of the goals, practices, willingness, motivations, and barriers related to public engagement among tenure-track science faculty at the University of Wisconsin–Madison based on a survey conducted in the spring of 2021. We also provide more nuanced insights about institutional expectations, influences from graduate students, and changes during the COVID-19 pandemic.

EXCECUTIVE SUMMARY

Public engagement goals and views of the public

Science faculty at UW-Madison embrace diverse goals of public engagement, ranging from educating the public to shaping policy to widening representation of public voices. However, science-centered goals have the highest levels of agreement among respondents.

- Most respondents agree or strongly agree that the goals of public engagement include "educate the public about science (98.1%)," "increase trust in the scientific community (96.4%)," "correct misinformation about science issues (94.5%)," "generate excitement about science (94.1%)," "help shape policy and inform the policymaking process (92.0%)," "ensure that a wide variety of people are represented in discussions of science (89.0%)," and "learn what ethical and societal concerns members of the public have with emerging science (86.5%)."
- Respondents are more divided on narrowed-goals related to "allowing the public to have input on the research we do at UW−Madison (44.4% agree/strongly agree, 18.4% disagree/strongly disagree)," "avoiding potential controversies about new science (43.7% agree/strongly agree, 34.6% disagree/strongly disagree)," "persuading members of the public to adopt a specific viewpoint or behavior (36.2% agree/strongly agree, 33.4% disagree/strongly disagree)," and "ensuring that research leads to marketable products (23.9% agree/strongly agree, 37.9% disagree/strongly disagree)."

Science faculty hold mixed views of the public. They are aware of the public's valuable perspectives, but also of the potential deficits in their knowledge *(Similar to 2018 land-grant university survey).*

- On the one hand, a large majority (83.1%) of respondents agree or strongly agree that "the public can bring valuable perspectives to discussions about scientific research." On the other hand, about half (52.0%) disagree or strongly disagree that "generally, members of the public understand basic scientific principles."
- About half (48.0%) of respondents are ambivalent (neither disagree nor agree) about the assumption that "if people understood the research behind controversial science, they would be supportive of it."
- As context, respondents' judgments about the public's knowledge generally reflects the reality of the public's response to scientific process questions. According to the NSF Science & Engineering Indicator 2020, about two-thirds (65%) correctly answered two questions about probability, half (49%) correctly answered a question about experiments

and a quarter (24%) sufficiently described “what it means to study something scientifically” in their own words.

Frequency of participation is relatively low but willingness to engage is high

Science faculty at UW-Madison have participated in a wide range of engagement activities with diverse audiences, including the general public, students, stakeholders, and journalists, but the frequency of their participation is relatively low.

- Respondents engage with the public somewhat frequently (at least a few times a year) by “discussing research during everyday interactions with members of the public (83.3%),” “interacting with students outside of curricular activities (79.5%),” “engaging on social media about your research (53.2%),” “collaborating with industry or professional stakeholders on research (48.3%),” “presenting research to the public, such as at a science café or formal lecture series (47.1%),” and “participating in interviews with journalists (43.6%).”
- Engagement activities that could potentially be considered as time-consuming, less accessible, or offered infrequently, are rarely (never) practiced by many respondents. These activities include “translating research into marketable products (63.6%),” “including members of the public directly in the research process, such as through citizen science (61.3%),” “working on extension−related activities (59.4%),” “participating in a science festival (49.0%),” and “interacting with government bodies or officials, such as providing expertise to policymakers or testifying as an expert (42.7%).” Interestingly, activities that might seem more common among faculty, like “publishing non−academic pieces, such as op−eds or popular news articles” or “participating in science education efforts in K−12 environments” are also noted to be less popular and are rarely (never) practiced by many respondents (53.0% and 44.7%, respectively).

Science faculty indicated high levels of willingness to participate in most of the engagement activities we examined.

- The majority of respondents are very willing or extremely willing to “discuss research during everyday interactions with members of the public (69.0%),” “interact with students outside of curricular activities (68.0%),” “present research to the public (65.8%),” “interact with government bodies or officials (65.0%),” “collaborate with industry or professional stakeholders on research (61.1%),” and “participate in interviews with journalists (56.7%).”
- However, respondents’ willingness to participate in other engagement activities are more spread out, such as “working on extension−related activities (18.7% extremely willing, 11.3% not at all willing),” “engaging on social media about your research (15.6% extremely willing, 17.3% not at all willing),” “translating research into marketable products (13.2% extremely willing, 18.5% not at all willing),” and “including members of the public directly in the research process (12.5% extremely willing, 16.9% not at all willing).”
- There is a slight disconnect between respondents’ willingness to engage and previous participation in engagement activities. For example, despite high willingness to engage with government bodies or officials (65.0% extremely/very willing), a large number of respondents have no such experience (42.7%). In contrast, while engaging on social

media about your research is among one of the more practiced activities (53.2% at least a few times a year), respondents show relatively low willingness to engage on social media (the third least of all 13 examined activities).

Science faculty have participated in different types of public engagement training opportunities both on their own and at UW-Madison.

- About two-thirds to three quarters of respondents have participated in self−studied training (62.2% multiple times, 13.2% once), listened to a lecture or presentation on the topic of communication (59.7% multiple times, 22.8% once), or participated in a workshop/training no longer than one day (40.6% multiple times, 23.1% once).
- However, participation in more intense types of training opportunities is less common, such as a multi-day workshop/training (59.3% never) or multi-day or multi-week fellowships (76.0% never).

Engaging with the public on social media receives mixed views

Science faculty recognize that social media is an effective way to promote their research, however they also acknowledge the risk that research can become politicized. Regardless, science faculty are generally not concerned about the risk of backlash for discussing controversial topics on social media.

- Respondents see some advantages of engaging on social media, including effectively reaching the public (65.1% agree/strongly agree) and promoting research (58.4%). However, about half of respondents are ambivalent about whether social media enhances scientists' credibility (as experts) (47.5 % neither disagree nor agree).
- The majority of respondents do not object to the use of social media, with over six-in-ten disagreeing or strongly disagreeing that "serious scientists should stay away from social media (62.1%)" or "scientific research is too complex to explain on social media (60.3%)."
- Respondents are concerned about the potential politicization of science, with 41.2 percent of the respondents agreeing or strongly agreeing that "there is a higher risk that research will become politicized if scientists share it on social media." Nevertheless, they do not fear backlash from their department and/or UW−Madison (61.4% disagree/strongly disagree) or public backlash (57.4% disagree/strongly disagree) for discussing potentially controversial topics related to their research on social media.

COVID-19 influenced perceptions of and participation in engagement activities

The COVID-19 pandemic has impacted perceptions of and participation in public engagement among science faculty at UW-Madison. Faculty report finding different ways (but not necessarily more participation) to engage as a result of the pandemic.

Perceptions

- With the consideration of "a greater need to combat misinformation about COVID−19 than ever before (84.9% agree/strongly agree)," respondents highly value science information. The majority agree or strongly agree that "*the most important* role scientists play during the pandemic is providing scientific information to the public (63.9%)" or

"providing people with factual scientific information is *the best way* to ensure they adopt COVID−19 protective behaviors (57.6%)."

- Some respondents consider elements other than science that influence public views of COVID-19, with over a third (38.4%) of respondents disagreeing or strongly disagreeing that "when people's views of COVID−19 are inconsistent with scientific consensus, it is because they lack accurate information."

Participation

- Over half (54.1%) of respondents agree or strongly agree that "I am engaging with the public in *different* ways because of COVID−19." But only 16.7 percent of the respondents agree or strongly agree that "I have been engaging *more* with the public since the start of the COVID−19 pandemic."
- The engagement activities shifted from in person to online spaces during the pandemic, with about four-in-ten of the respondents agree or strongly agree that "I've had fewer opportunities for public engagement because I cannot engage with the public *in person* (46.4%)" or "COVID−19 has created new opportunities for me to engage in online spaces (40.8%)."
- Among respondents, there are not profound differences in gender or academic rank with respect to how participation in public engagement has changed since the start of the COVID-19 pandemic.

Other factors that influence whether or not to engage

Science faculty have varying degrees of interest in or opportunities to participate in public engagement across factors that influence their decision to engage.

- Most respondents consider the following to have strong, some, or slight positive influences on their decision to engage: "personal satisfaction or enjoyment (86.7%)," "expectations of the Wisconsin Idea (80.6%)," "increased visibility for my research (76.0%)," and "availability of opportunities to engage with the public at UW-Madison (62.2%)."
- Respondents are divided about the influence of other institutional expectations on their decision to engage, including "departmental culture around public engagement (58.2% influence to engage, 34.0% no influence);" "grant requirements, such as NSF Broader Impacts (55.1% influence to engage, 42.1% no influence);" "university appointment and/or service requirements (44.9% influence to engage, 39.5% no influence);" and "incentives related to tenure and promotion (38.3% influence to engage, 41.3% no influence)."
- About half of the respondents are not influenced by "graduate students' expectations around public engagement (52.9%)" or "access to public engagement training (55.7%)."
- The perception of public engagement as an opportunity cost ("time and resources it takes away from other responsibilities") remains a barrier for engagement (66.5% strong/some/slight influence to *not* engage).

Perceived importance

Science faculty perceive public engagement to be more important to themselves than to university or college leaders, graduate students, fellow faculty, and tenure division.

- About half of respondents perceive that engagement is very or extremely important to themselves (55.4%), higher than that to their college dean (47.9%), their department chair or director (43.8%), the campus as a whole (41.9%), and their graduate students or advisees (37.9%).
- But they perceive lower importance to their fellow faculty members (29.6% very/extremely important), and their tenure division (15.0% very/extremely important).

Tenure promotion requirements

Science faculty place more personal importance on service and teaching than what perceive the university does when deciding on tenure.

- The importance of (%) research, teaching, and service that respondents personally perceive is 5-3-2 (R: *M* = 52.2%, *SD* = 18.3%; T: 28.3%, *SD* = 13.1%; S: *M* = 19.5%, *SD* = 12.3%), whereas they think the weight university places in tenure promotion is 7-2-1 (R: *M* = 70.4%, *SD* = 15.1%; T: *M* = 21.4%, *SD* = 11.0%; S: *M* = 8.1%, *SD* = 7.0%).
- This difference echoes the large gap in the perceived importance of public engagement between individuals (55.4% very/extremely important) and their tenure division (15.0%).
- Respondents estimate that within the tenure service requirements, public service is weighed less (*M* = 14.6%, *SD* = 12.5%) than university service (*M* = 48.4%, *SD* = 20.3%) and professional service (*M* = 37.1%, *SD* = 17.6%).

Campus relations

With regards to perceptions of support for public engagement from university actors, respondents perceive a moderate degree of support from their colleagues and department chair/director, but not from university administrators.

- *Colleagues:* About two-thirds of respondents agree or strongly agree that “faculty in my department are supportive of each other's involvement in public engagement activities (65.6%)” or “faculty members at UW−Madison who take part in public engagement are well regarded by their peers (63.5%).”
- *Chair/director:* Greater support is perceived with regards to their chair/director’s encouragement to contribute to the Wisconsin Idea (50.7% agree/strongly agree, 31.7% neither), as compared to participation in public engagement activities in general (40.8% agree/strongly agree, 36.0% neither).
- *University actors:* About a quarter of respondents (26.8%) agree or strongly agree that “high−level administrators at UW−Madison have made public engagement a priority for the university.” While less than a fifth of respondents agree that “public engagement is treated as a core component of the work expected of faculty members at UW−Madison (17.7% agree/strongly agree),” or that “UW−Madison provides sufficient training opportunities to improve my public engagement skills (15.6% agree/strongly agree).”

Graduate students

Over three quarters of respondents (81.9%) agree or strongly agree that they "support the public engagement activities of their graduate students," though only a quarter (23.5%) report that they and/or their peers received such support from their advisors while in graduate school. Additionally, about half (52.6%) of them acknowledge that "graduate students in my department want to be involved in public engagement opportunities."

However, a large proportion of the respondents still feel ambivalent about perceived expectations from graduate students:

- Graduate students want to see faculty members more involved in public engagement (59.6% neither disagree nor agree).
- Graduate students these days have an expectation that public engagement is part of their professional development (49.4% neither disagree nor agree).
- There are sufficient resources at UW−Madison to support public engagement by graduate students (48.7% neither disagree nor agree).
- Graduate students in my department ask faculty members to provide more opportunities to engage with the public (44.3% neither disagree nor agree).

ABOUT THE SURVEY

This survey was conducted online by the UW-Madison Survey Center from March to April 2021. No incentive was provided. The final sample was 528 tenure-track science faculty (>80% finished) and the final adjusted response rate was 27.0% (AAPOR). The margin of error for the sample is plus or minus 3.7 percentage points.

The sample is representative of the university faculty population regarding gender, race, and academic rank. None of these percentages deviate more than five percentage points from the 2020-2021 UW-Madison Data Digest.

Respondents are affiliated with the following divisions: biological science (43.4%), physical science (24.8%), and social science (31.8%). The sample consists of 54.9% tenured professors, 19.3% tenured associate professors, 23.7% untenured assistant professors, and 2.1% other titles. Around 11.7% of respondents hold extension appointments. [1] More details about the demographics of the respondents are available in Appendix B.

[1] Among respondents, 32 faculty hold tenure-track positions with a 100% extension appointment.

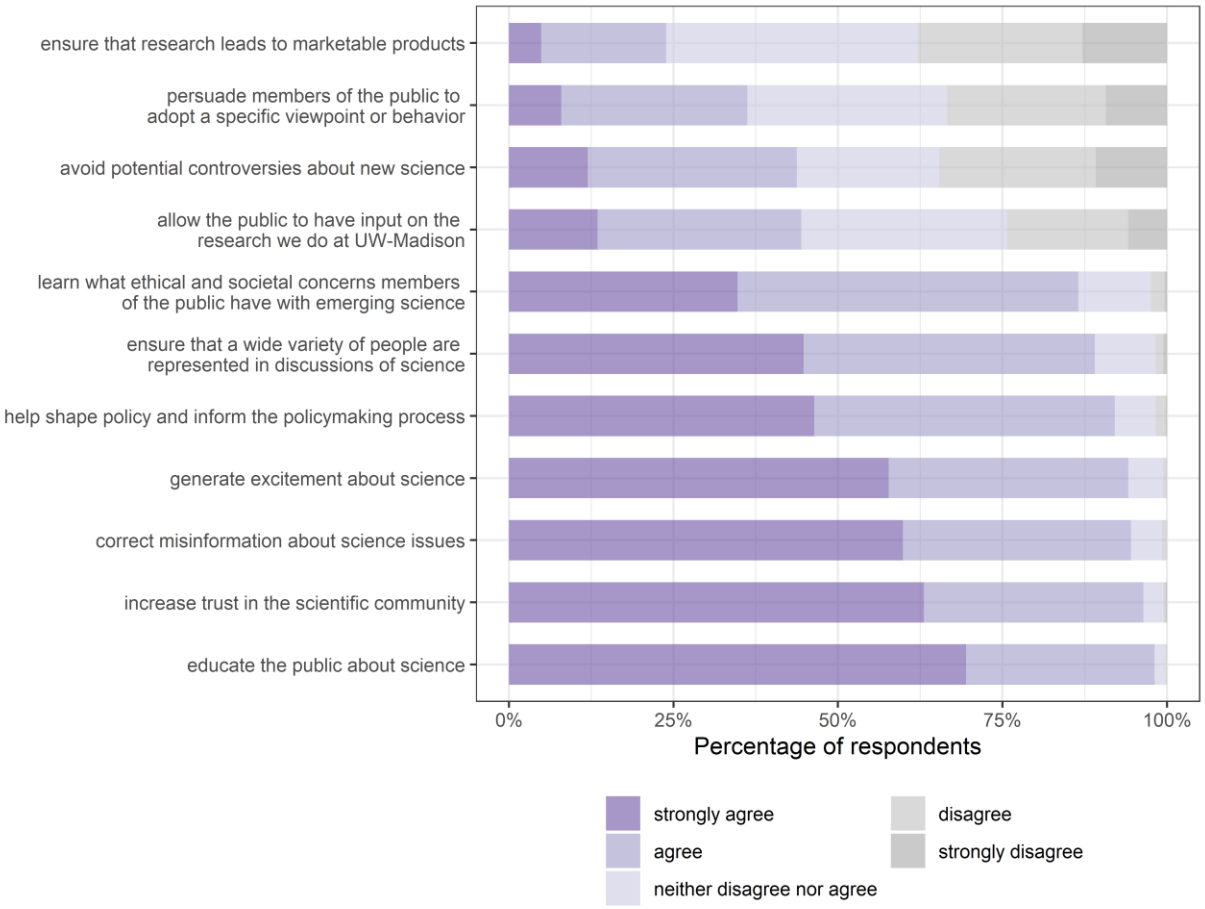
APPENDIX A

Frequencies for all survey questions

Public engagement goals and views of the public

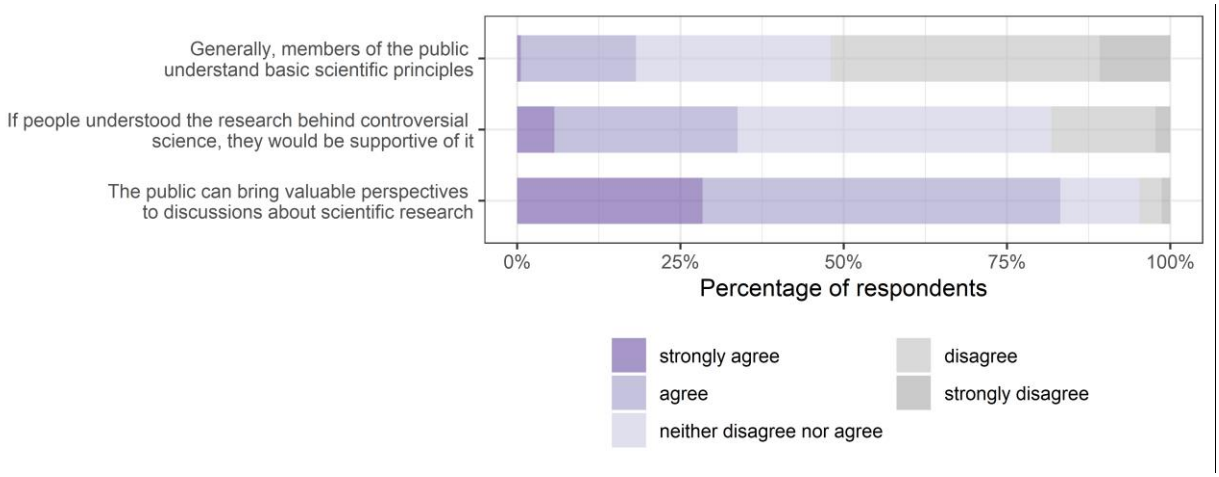
Science faculty at UW-Madison embrace diverse goals of public engagement, ranging from educating the public to shaping policy to widening representation of public voices. However, science-centered goals have the highest levels of agreement among respondents.

I think one of the goals of public engagement is to...

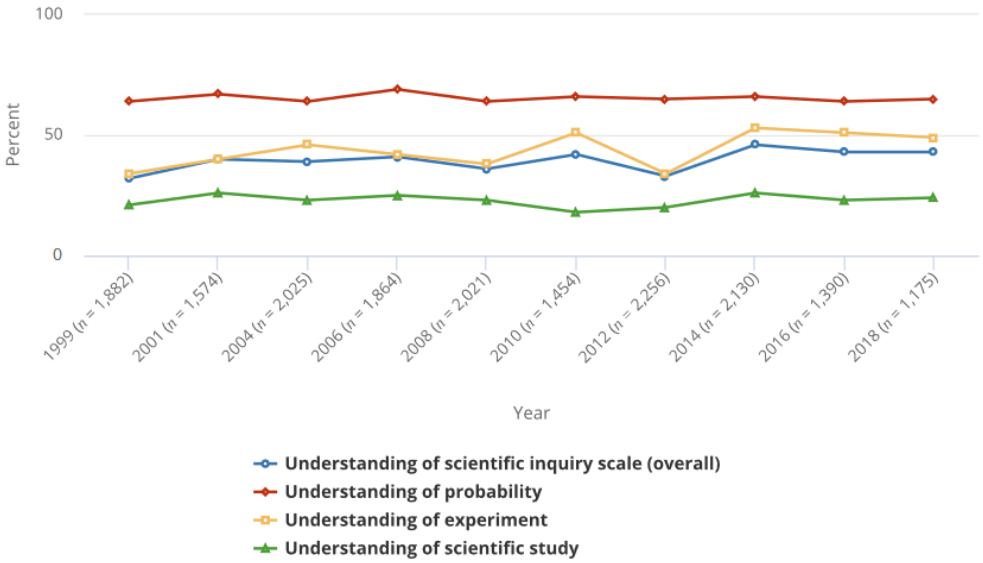


Science faculty hold mixed views of the public. They are aware of the public's valuable perspectives, but also of the potential deficits in their knowledge.

Please indicate your agreement with the following statements about your views of the public.



What reality looks like: Correct answers to scientific process questions from1999-2018

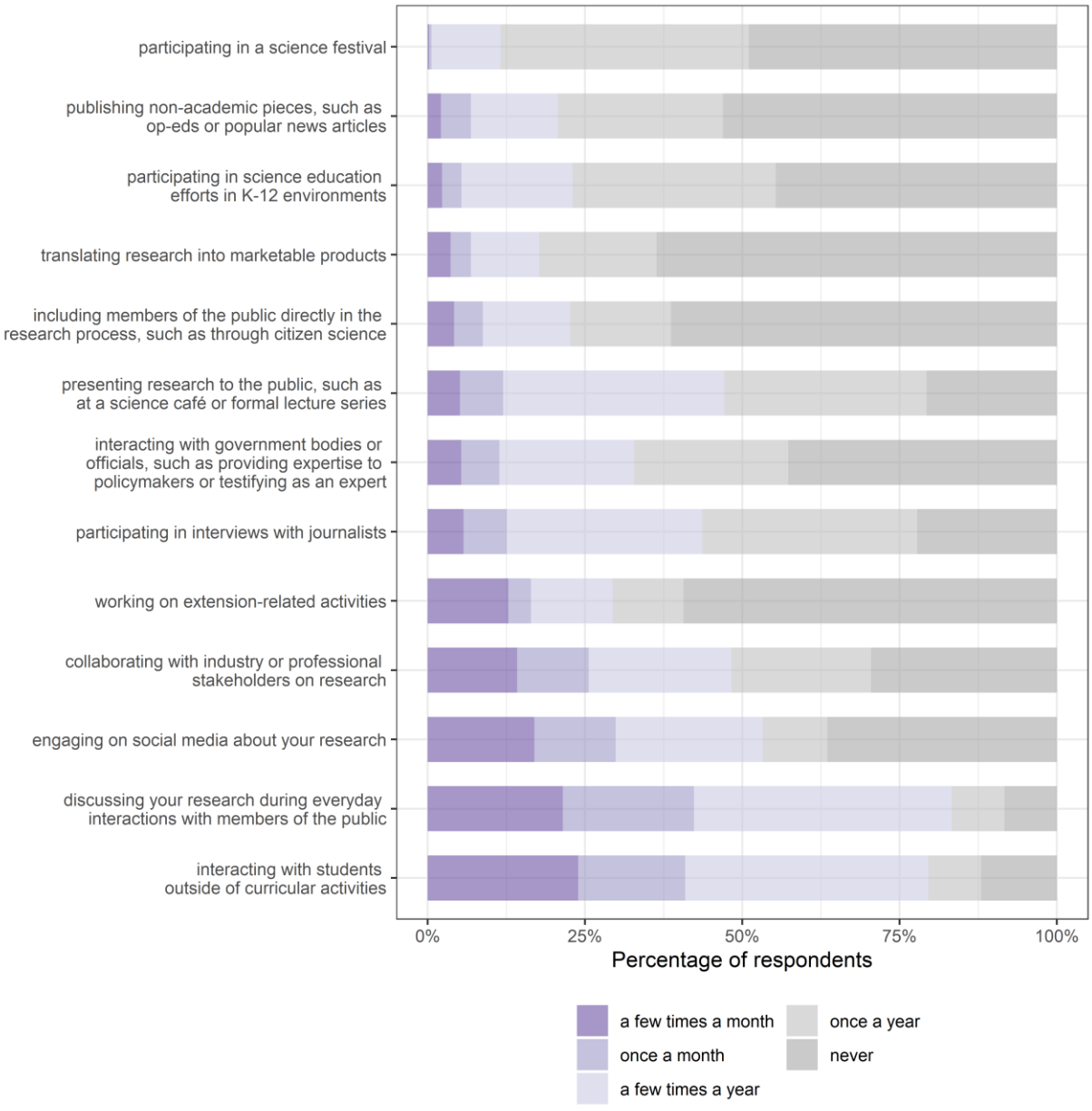


Note. Source from Science & Engineering Indicators | NSB-2020-7 (p. 27)

Frequency of participation is relatively low but willingness to engage is high

Science faculty at UW-Madison have participated in a wide range of engagement activities with diverse audiences, including the general public, students, stakeholders, and journalists, but the frequency of their participation is relatively low.

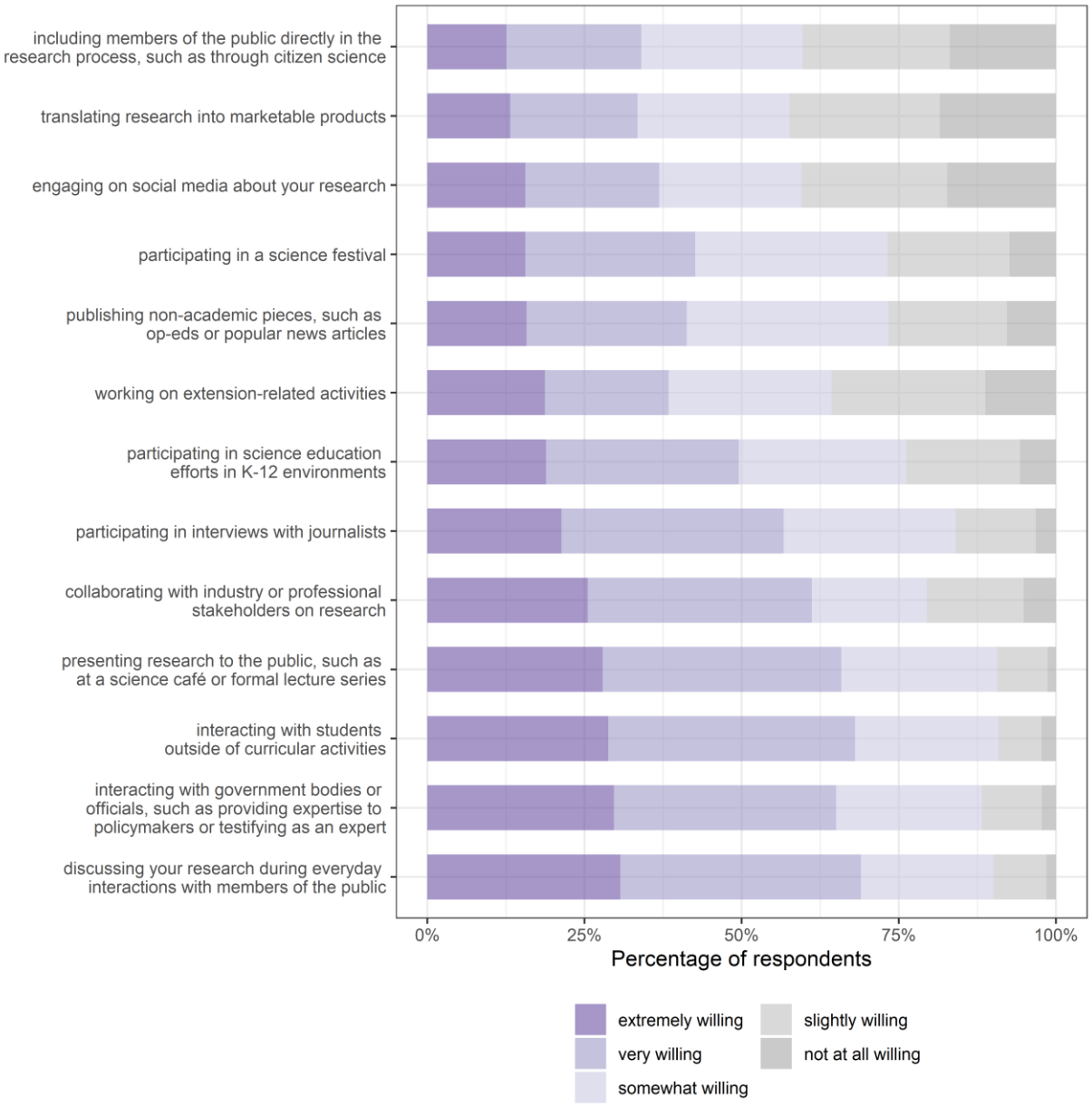
Thinking about an average year, about how frequently do you participate in the following activities in your professional capacity?



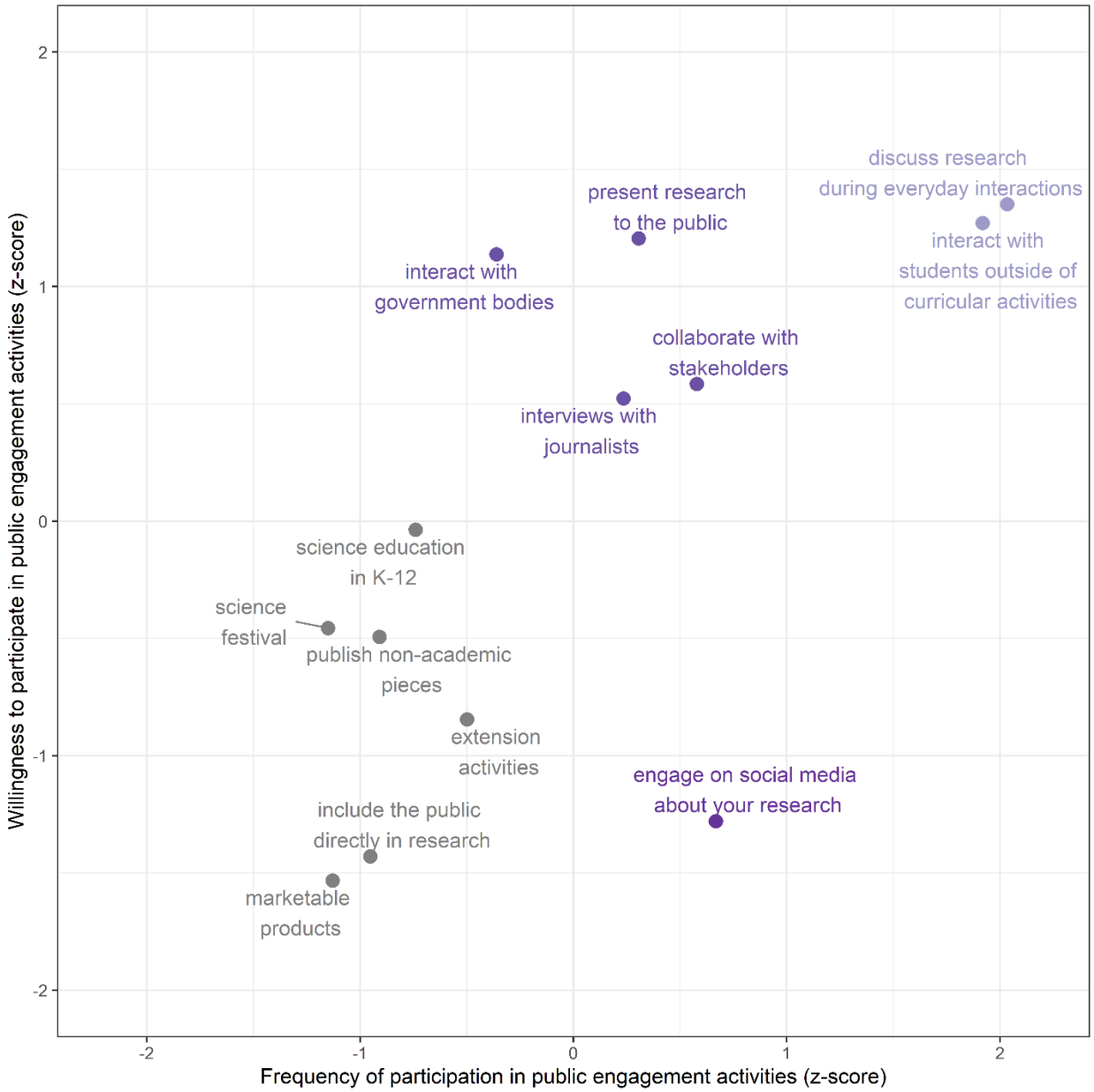
Note. Some of the activities may occur less frequently than others (e.g., participating science festivals vs. interviews with journalists.)

Science faculty indicated high levels of willingness to participate in most of the engagement activities we examined.

In the future, how willing would you be to participate in the following activities in your professional capacity?

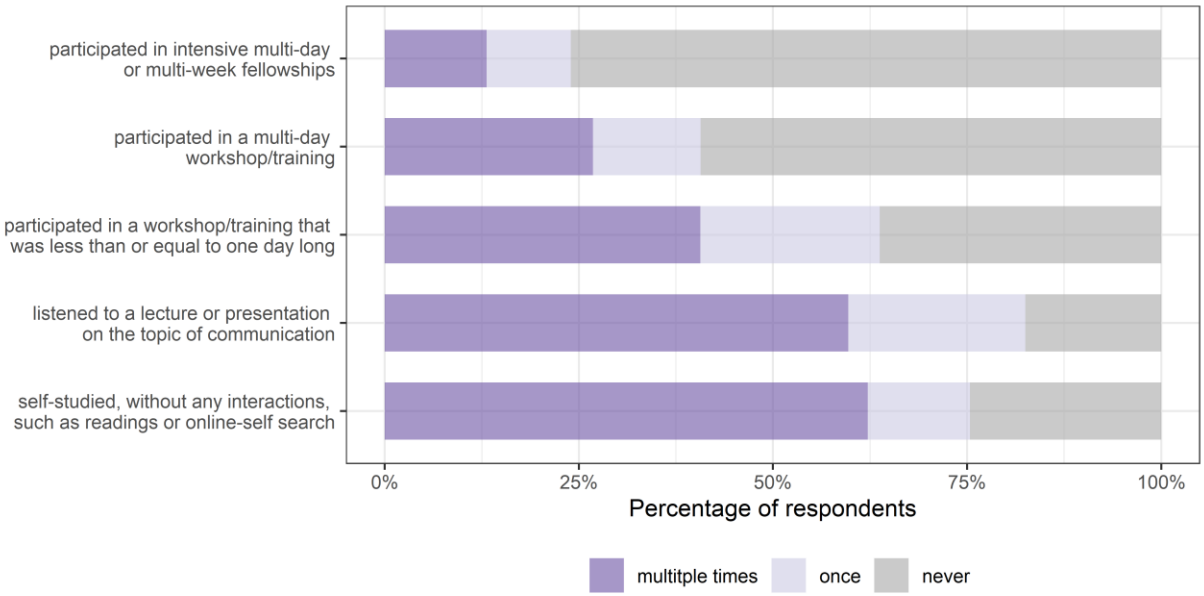


There is a slight disconnect between respondents' willingness to engage and previous participation in engagement activities.



Science faculty have participated in different types of public engagement training opportunities both on their own and at UW-Madison.

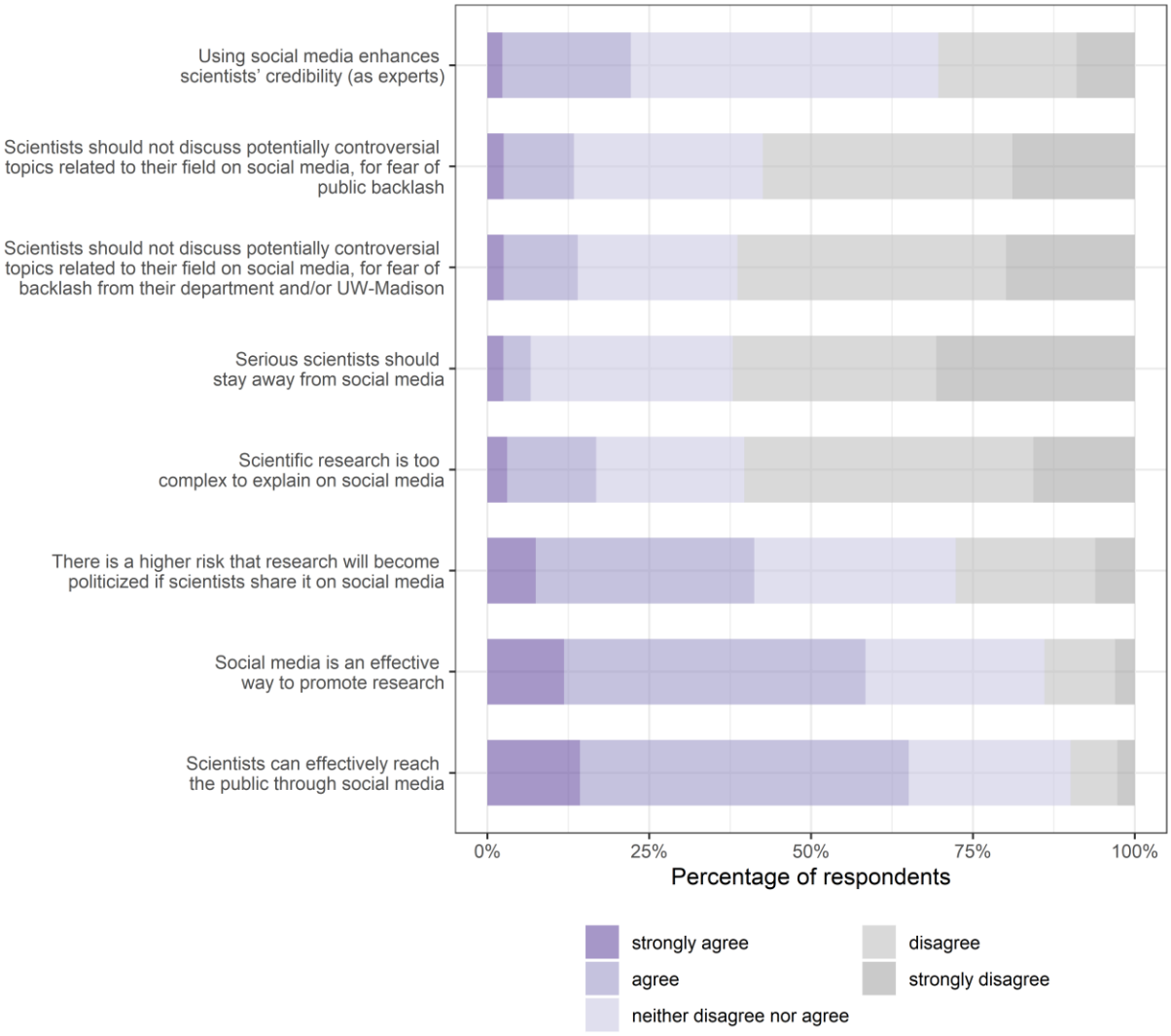
In your professional career, how many times have you participated in the following types of public engagement training opportunities?



Engaging with the public on social media receives mixed views

Science faculty recognize that social media is an effective way to promote their research, however they also acknowledge the risk that research can become politicized. Regardless, science faculty are generally not concerned about the risk of backlash for discussing controversial topics on social media.

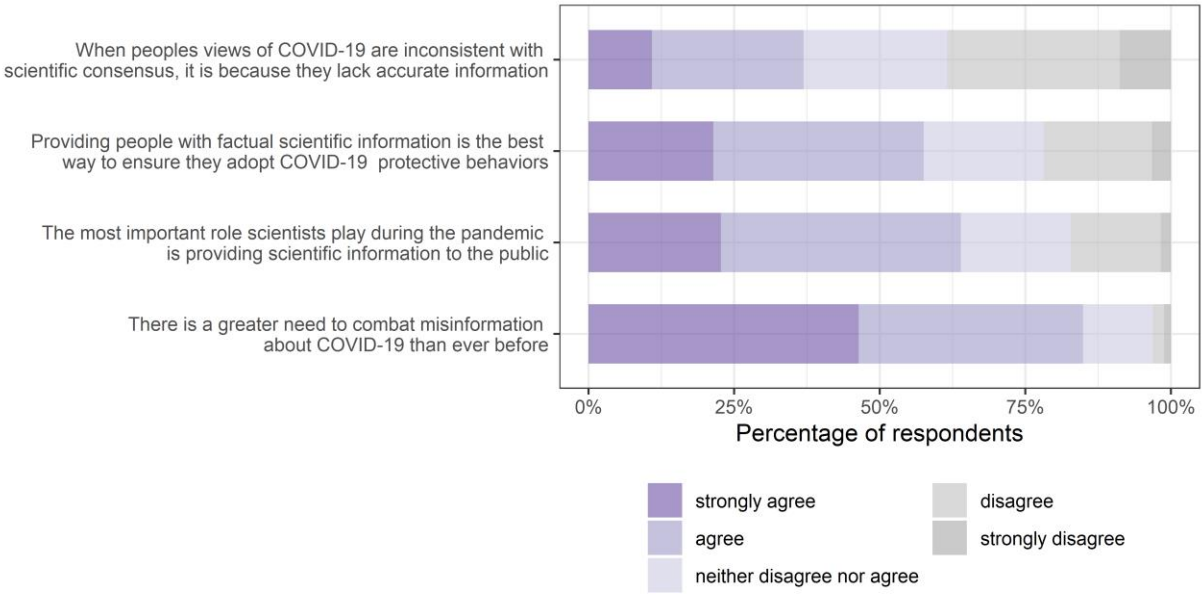
How much do you agree or disagree with these statements that scientists have made about engaging with the public on social media in their professional capacity?



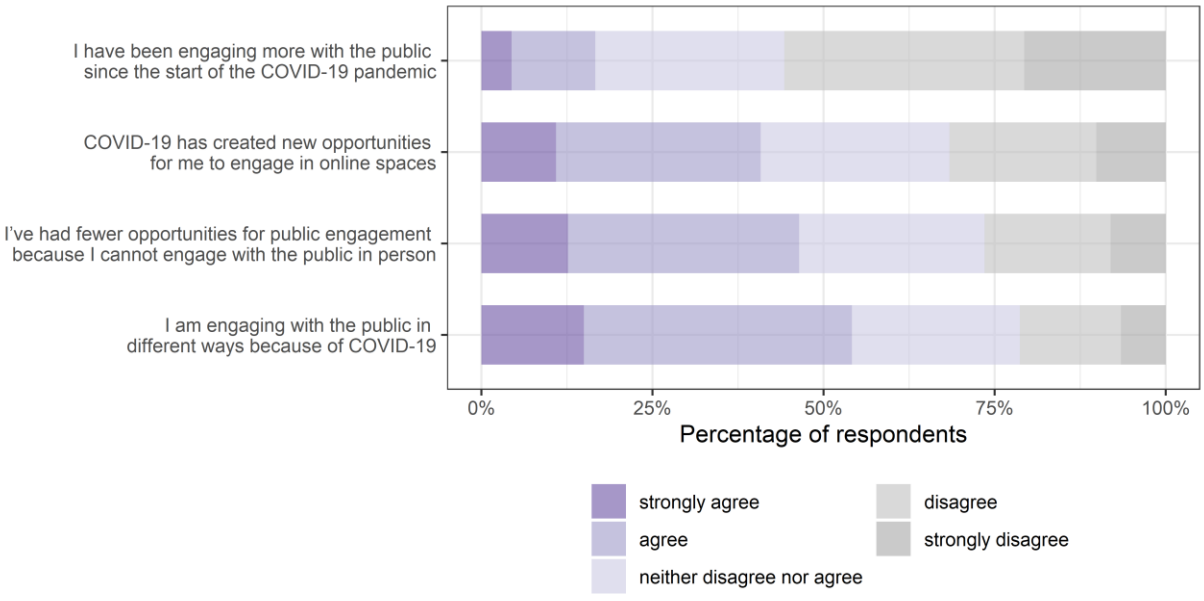
COVID-19 influenced perceptions of and participation in engagement activities

The COVID-19 pandemic has impacted perceptions of and participation in public engagement among science faculty at UW-Madison. Faculty report finding different ways (but not necessarily more participation) to engage as a result of the pandemic.

How much do you agree or disagree with the following statements that have been made about public engagement during the COVID-19 pandemic?



Think about your public engagement since the start of the COVID-19 pandemic. How much do you agree or disagree with the following statements?



Among respondents, there are not profound differences in gender or academic rank with respect to how participation in public engagement has changed since the start of the COVID-19 pandemic.

I am engaging with the public in *different* ways because of COVID-19	Total	Gender		Academic rank		
		Female	Male	Assistant professor	Associate professor	Full professor
Strongly agree/agree	54.1%	51.6%	56.9%	47.2%	60.4%	54.0%
Neither disagree nor agree	24.6%	22.5%	25.3%	23.6%	24.8%	25.4%
Strongly disagree/disagree	21.3%	25.8%	17.8%	29.3%	14.9%	20.6%

I have been engaging *more* with the public since the start of the COVID-19 pandemic	Total	Gender		Academic rank		
		Female	Male	Assistant professor	Associate professor	Full professor
Strongly agree/agree	16.7%	16.9%	16.4%	13.8%	21.8%	15.6%
Neither disagree nor agree	27.6%	26.3%	28.9%	28.5%	27.7%	27.1%
Strongly disagree/disagree	55.7%	56.8%	54.7%	57.7%	50.5%	57.3%

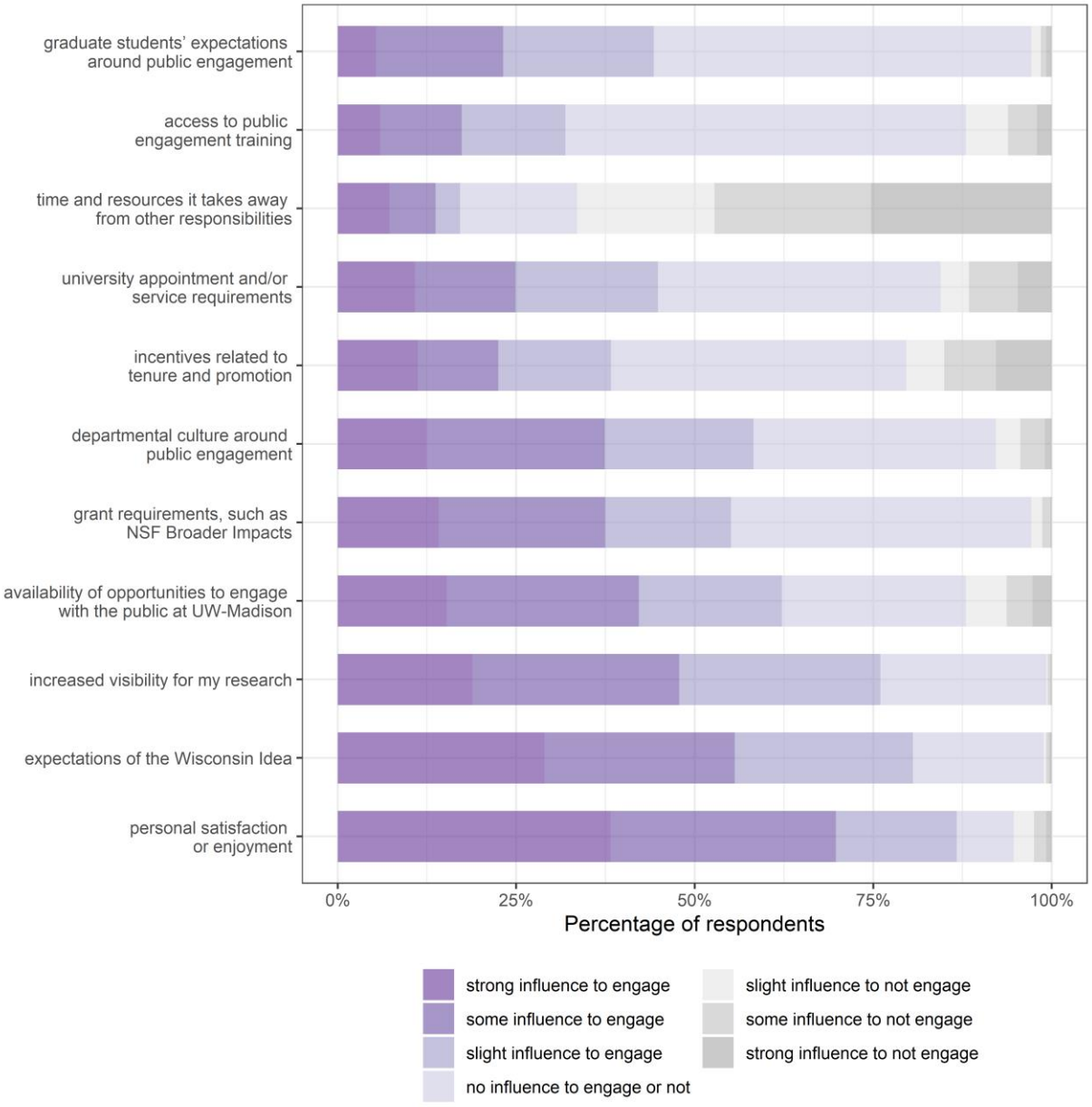
COVID-19 has created *new* opportunities for me to engage in *online spaces*	Total	Gender		Academic rank		
		Female	Male	Assistant professor	Associate professor	Full professor
Strongly agree/agree	40.9%	44.1%	38.6%	39.0%	44.6%	39.2%
Neither disagree nor agree	27.6%	25.4%	29.5%	28.5%	23.8%	29.2%
Strongly disagree/disagree	31.6%	30.5%	31.9%	32.5%	31.7%	31.6%

I've had *fewer* opportunities for public engagement because I cannot engage with the public *in person*	Total	Gender		Academic rank		
		Female	Male	Assistant professor	Associate professor	Full professor
Strongly agree/agree	46.4%	50.0%	44.6%	48.0%	49.0%	45.5%
Neither disagree nor agree	27.1%	23.1%	29.5%	26.8%	29.0%	26.4%
Strongly disagree/disagree	26.5%	26.9%	25.8%	25.2%	22.0%	28.1%

Other factors that influence whether or not to engage

Science faculty have varying degrees of interest in or opportunities to participate in public engagement across factors that influence their decision to engage.

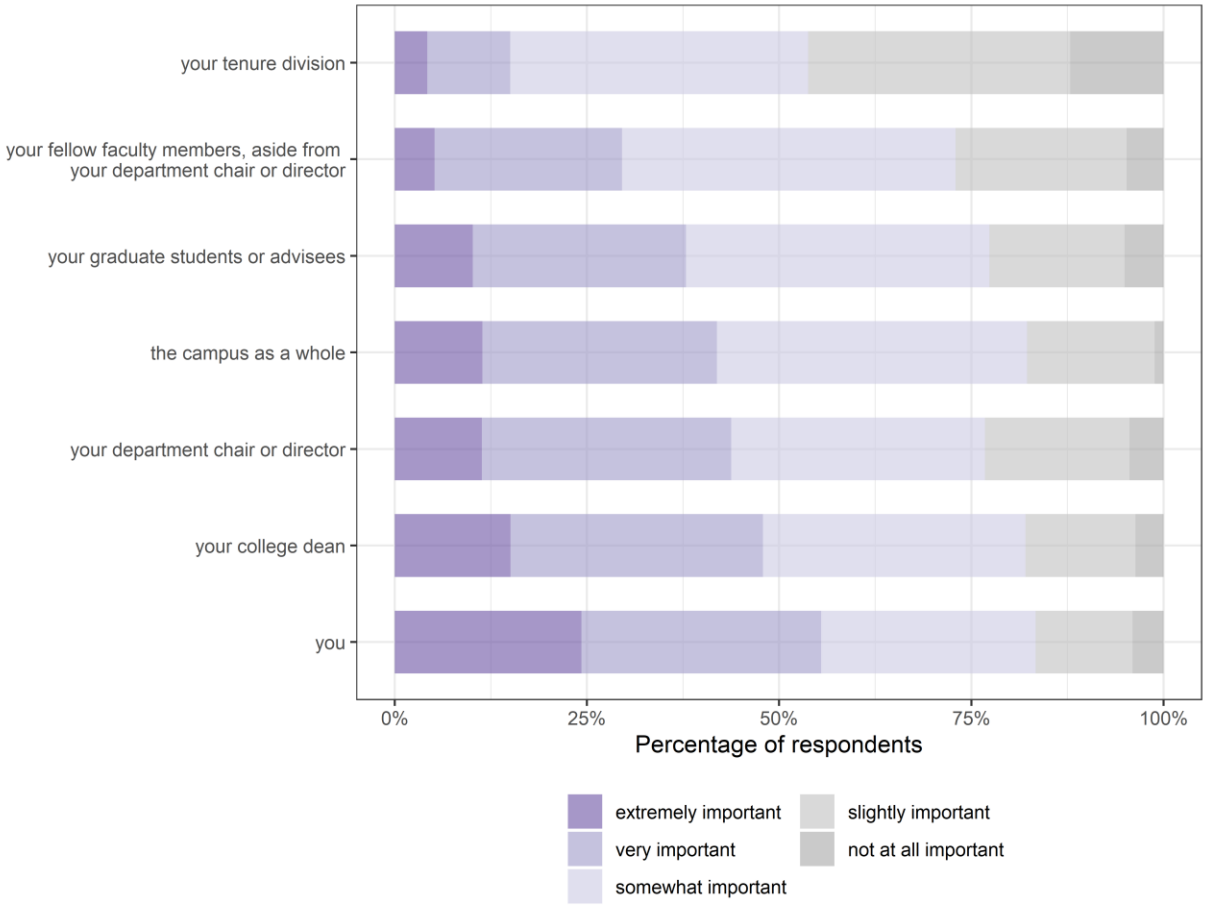
How much influence does each of the following have on your decision to engage with the public or not?



Perceived importance

Science faculty perceive public engagement to be more important to themselves than to university or college leaders, graduate students, fellow faculty, and tenure division.

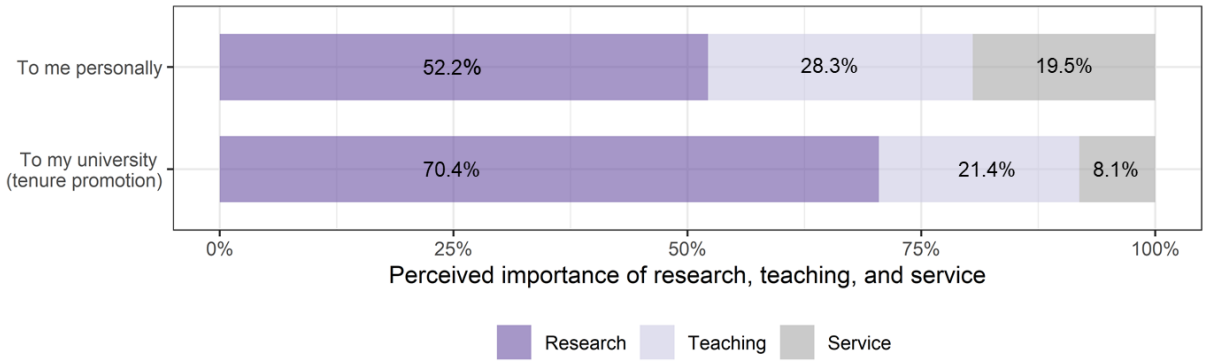
Thinking about your own experiences, how important is public engagement to...



Tenure promotion requirements

Science faculty place more personal importance on service and teaching than what perceive the university does when deciding on tenure.

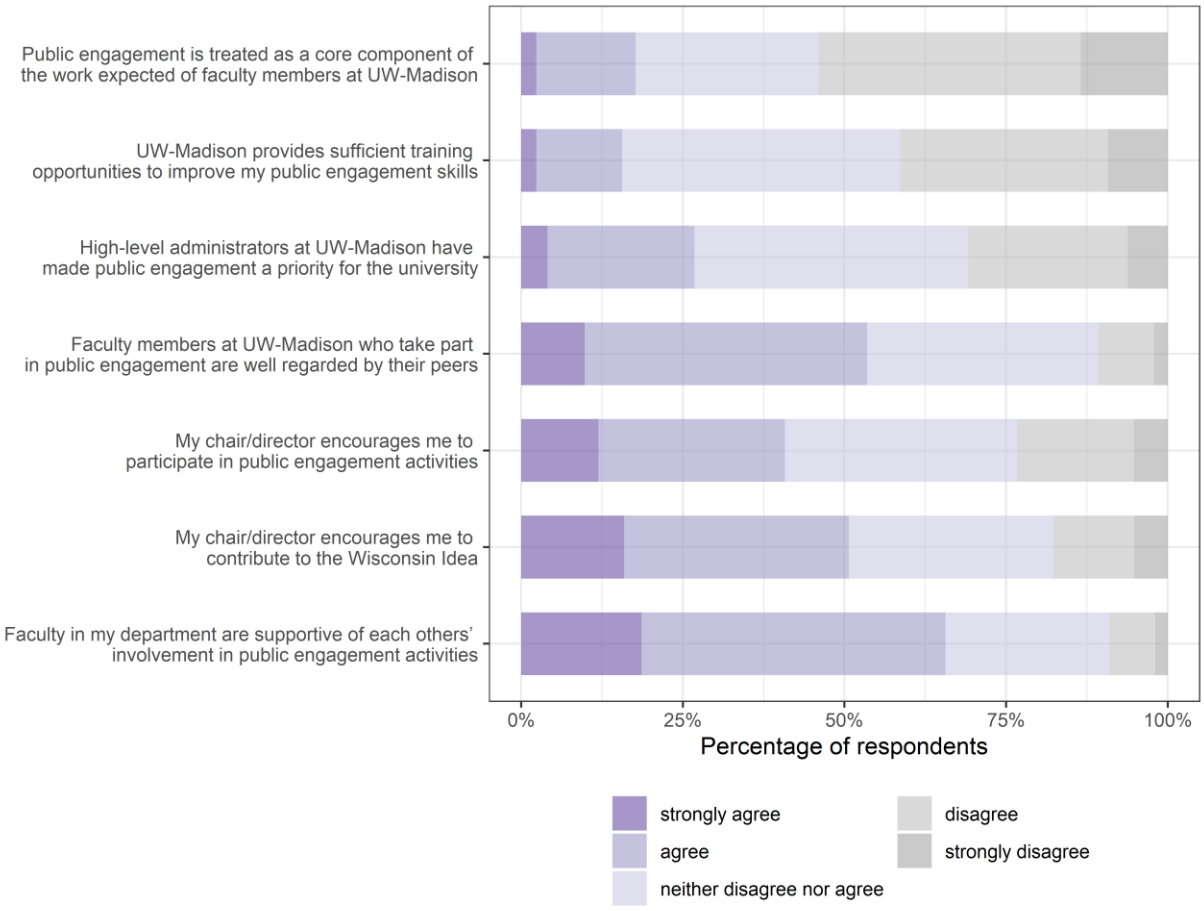
How important (in %) are research, teaching, and service to you personally and when it comes to tenure promotion decisions?



Campus relations

With regards to perceptions of support for public engagement from university actors, respondents perceive a moderate degree of support from their colleagues and department chair/director, but not from university administrators.

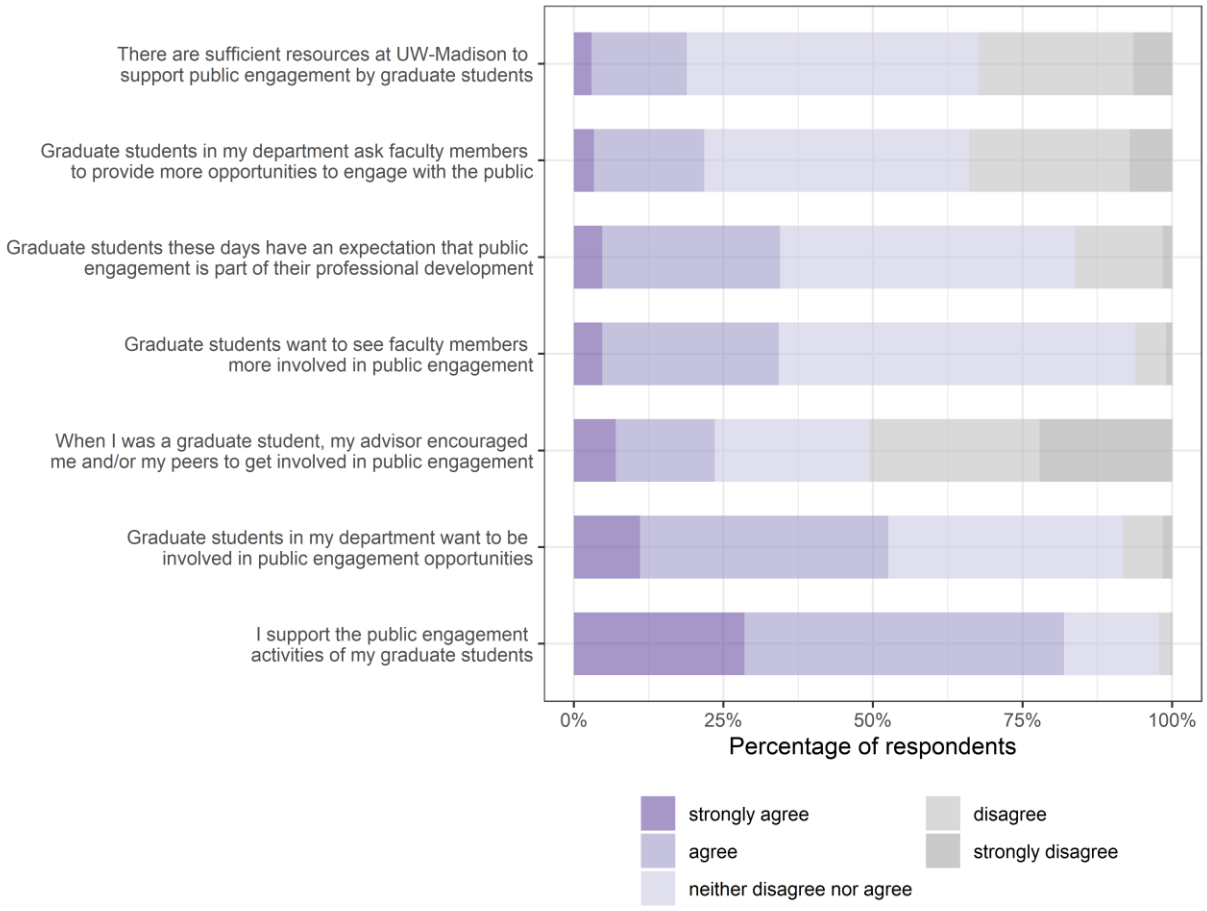
Thinking about your campus relationships, how much do you agree or disagree with the following statements?



Graduate students

Over three quarters of respondents are supportive of the public engagement activities of their graduate students. However, a large proportion of the respondents still feel ambivalent about perceived expectations from graduate students.

Thinking about graduate students and public engagement, how much do you agree or disagree with the following statements?



APPENDIX B

Demographics of the respondents

	Total (N=528)
Gender	
Man	299 (57.8%)
Woman	215 (41.6%)
Non-binary	3 (0.6%)
Race	
American Indian (only)	4 (0.8%)
Asian (only)	54 (10.7%)
Black/African American (only)	9 (1.8%)
Hispanic (all races)	18 (3.6%)
Hawaiian/Pacific Islander (only)	0 (0.0%)
White (only)	400 (79.2%)
2 or More Races (non-Hispanic)	9 (1.8%)
Other	11 (2.2%)
Years since highest degree	
Mean (SD)	21.7 (11.6)
Median [Min, Max]	21.0 [1.0, 56.0]
Academic rank	
Assistant professor, untenured	125 (23.7%)
Associate professor, tenured	102 (19.3%)
Full professor, tenured	290 (54.9%)
Other title	11 (2.1%)
Affiliated division	
Biological science	224 (43.4%)
Physical science	128 (24.8%)
Social science	164 (31.8%)

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