



Results for the 2020 American Meteorological Society Membership Survey

Anne Marie Porter and Raymond Y. Chu

Statistical Research Center, American Institute of Physics

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2020 AMS Membership Survey Results

The 2020 Membership Survey of the American Meteorological Society (AMS) had three primary goals:

1. To obtain a baseline measurement and track the demographics of the AMS membership
2. To understand perceptions of culture and belonging within AMS
3. To track membership value of AMS benefits and activities

The survey was sent to all AMS members. 3,047 of 10,682 AMS members responded to the survey, which was a 29% response rate. The survey was sent via email on 11/17/2020, and four reminders were sent on 12/01/2020, 12/10/2020, 01/11/2021, and 01/19/2021.

Significance Testing

Throughout this report, we conducted significance testing when comparing responses between two or more groups. A statistically significant difference means the difference in responses is large enough that it cannot be adequately explained by chance. A p-value (ranging between 0 and 1) is used to examine the level of statistical significance, and a p-value < .05 is statistically significant. Statistical significance depends on several factors, not solely the absolute difference between two values. While differences that are not marked as significant may seem to be the same size as, or even larger than, those marked as significant, they are not statistically significant.

Goal 1: Demographics of AMS Membership

Overall Demographics

Overall, 88% of AMS survey respondents resided in the United States at the time of the survey, and of those in the United States, 95% had United States citizenship. For the 12% of AMS survey respondents outside of the United States, most resided in Europe or Asia.

Region of Residence of AMS Survey Respondents Outside the United States	
Europe	40%
Asia	30%
North America	15%
Oceania	8%
South America	6%
Africa	1%

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Most AMS survey respondents identified as men, cisgender and heterosexual. For racial, ethnic, or cultural identities, most respondents identified as White/European. When examining the age of AMS respondents, the largest percentage were 60 years or older.

Gender Identity of AMS Survey Respondents	
Men	74%
Women	25%
Non-binary	1%
Agender	<1%
Two spirit	<1%
Another gender identity	<1%

Respondents could select multiple options, and numbers do not add up to 100%. Less than 1% of respondents selected more than one gender identity.

Cisgender, Transgender, or Intersex Identity of AMS Survey Respondents	
Cisgender	99%
Transgender	<1%
Intersex	<1%
Another identity	<1%

Sexual Orientation of AMS Survey Respondents	
Heterosexual	91%
Homosexual	5%
Bisexual or pansexual	3%
Another sexual orientation	1%

Racial, Ethnic, or Cultural Identity of AMS Survey Respondents	
White or European	89%
Asian	5%
Hispanic or Latinx	3%
Black or African American	2%
American Indian or Alaska Native	1%
Indian or Pakistani	1%
Middle Eastern or North African	1%
Native Hawaiian or other Pacific Islander	<1%
Another racial, ethnic, or cultural identity	1%

Respondents could select multiple options, and numbers do not add up to 100%. 3% of respondents selected more than one racial, ethnic, or cultural identity. Only United States residents were asked to provide their racial, ethnic, or cultural identity, and residents outside the United States are not included in this table.

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Age of AMS Survey Respondents	
18-29	11%
30-39	16%
40-49	13%
50-59	18%
60-69	21%
70 or older	21%

81% of AMS survey respondents did not indicate having a disability, and 94% did not require any accessibility aids at AMS sponsored events.

Types of Disabilities Indicated by AMS Survey Respondents	
Mental health diagnosis	5%
Moderate to severe allergies, asthma, or other environmental sensitivities	5%
Autoimmune disorder, pain disorder, or other chronic condition	4%
Deaf or hard of hearing	4%
Visual impairment, even while wearing glasses	2%
Mobility impairment	2%
Cognitive or learning disability	1%
Neuroatypical	1%
Another disability	1%
No disability	81%

Respondents could select multiple options, and numbers do not add up to 100%. 5% of respondents selected more than one disability.

Types of Accessibility Aids Required by AMS Survey Respondents at AMS Sponsored Events	
Hearing aids, headphones, and other audio devices	3%
Closed captioning or speech transcription	1%
Mobility aids	1%
Environmental adjustments (such as lighting, air, or sound)	1%
Screen readers	<1%
Sign language	<1%
Service animal	<1%
Human note-takers	<1%
Another accessibility aid	1%
No accessibility aids required	94%

1% of respondents selected more than one accessibility aid.

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Demographic questions were recoded for significance testing. This was done to combine groups that were too small for analysis, and recategorize responses that selected more than option within a question. More information on how the recoding was done can be found in the Appendix section.

When examining AMS survey respondents by both racial, ethnic, or cultural identity and gender identity, women were most represented among respondents who identified as Hispanic/Latinx.

Gender Identity of AMS Survey Respondents by Racial, Ethnic, or Cultural Identity			
	Men	Women	Another gender identity
Asian	73%	27%	0%
Black or African American	60%	40%	0%
Hispanic or Latinx	46%	54%	0%
White or European	75%	24%	1%
Another racial, ethnic, or cultural identity	71%	29%	0%
Two or more racial, ethnic or cultural identities	60%	39%	1%

Findings were statistically significant, $p < .001$. Only United States residents were asked to provide their racial, ethnic, or cultural identity, and residents outside the United States are not included in this table. Due to small group sizes, “Native American or Alaska Native”, “Indian or Pakistani”, “Native Hawaiian or other Pacific Islander”, and “Middle Eastern or North African” were combined into “Another racial, ethnic, or cultural identity.” “Agender”, “Non-binary”, and “Two spirit” were combined into “Another gender identity.”

We also looked at racial, ethnic, or cultural identity and gender identity by disability status. Most racial, ethnic, or cultural groups had similar percentages in disability status, except Asian respondents, who reported a much smaller percentage of disabilities. Around half of respondents identifying as another gender identity reported having a disability.

Disability Status of AMS Survey Respondents by Racial, Ethnic, or Cultural Identity		
	Have a disability	No disability
Asian	4%	96%
Black or African American	18%	82%
Hispanic or Latinx	21%	79%
White or European	21%	79%
Another racial, ethnic, or cultural identity	21%	79%
Two or more racial, ethnic or cultural identities	25%	75%

Findings were statistically significant, $p < .01$. Only United States residents were asked to provide their racial, ethnic, or cultural identity, and residents outside the United States are not included in this table. Due to small group sizes, “Native American or Alaska Native”, “Indian or Pakistani”, “Native Hawaiian or other Pacific Islander”, and “Middle Eastern or North African” were combined into “Another racial, ethnic, or cultural identity.”

Disability Status of AMS Survey Respondents by Gender Identity		
	Have a disability	No disability
Men	17%	83%
Women	26%	74%
Another gender identity	52%	48%

Findings were statistically significant, $p < .001$. Due to small group sizes, “Agender”, “Non-binary”, and “Two spirit” were combined into “Another gender identity.”

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We looked at the average age of respondents by racial, ethnic, or cultural identity and gender identity. Black/African American and Hispanic/Latinx respondents were younger than Asian and White/European respondents. Respondents identifying as women or another gender identity were younger than men.

Average Age of AMS Survey Respondents by Racial, Ethnic, or Cultural Identity	
Asian	48
Black or African American	43
Hispanic or Latinx	41
White or European	53
Another racial, ethnic, or cultural identity	49
Two or more racial, ethnic or cultural identities	45

Findings were statistically significant, $p < .001$. Only United States residents were asked to provide their racial, ethnic, or cultural identity, and residents outside the United States are not included in this table. Due to small group sizes, “Native American or Alaska Native”, “Indian or Pakistani”, “Native Hawaiian or other Pacific Islander”, and “Middle Eastern or North African” were combined into “Another racial, ethnic, or cultural identity.”

Average Age of AMS Survey Respondents by Gender Identity	
Men	56
Women	43
Another gender identity	40

Findings were statistically significant, $p < .05$. Due to small group sizes, “Agender”, “Non-binary”, and “Two spirit” were combined into “Another gender identity.”

By citizenship status, a significantly greater percentage of Asian respondents and respondents and another racial, ethnic, or cultural identity did not have citizenship in the United States. Women and those identifying as another gender identity were slightly less likely to be United States citizens.

Citizenship Status of AMS Survey Respondents by Racial, Ethnic, or Cultural Identity		
	US citizen	Non-US citizen
Asian	61%	39%
Black or African American	94%	6%
Hispanic or Latinx	82%	18%
White or European	98%	2%
Another racial, ethnic, or cultural identity	71%	29%
Two or more racial, ethnic or cultural identities	95%	5%

Findings were statistically significant, $p < .001$. Only United States residents were asked to provide their racial, ethnic, or cultural identity, and residents outside the United States are not included in this table. Due to small group sizes, “Native American or Alaska Native”, “Indian or Pakistani”, “Native Hawaiian or other Pacific Islander”, and “Middle Eastern or North African” were combined into “Another racial, ethnic, or cultural identity.”

Citizenship Status of AMS Survey Respondents by Gender Identity		
	US citizen	Non-US citizen
Men	96%	4%
Women	93%	7%
Another gender identity	90%	10%

Findings were statistically significant, $p < .01$. Due to small group sizes, “Agender”, “Non-binary”, and “Two spirit” were combined into “Another gender identity.”

2020 AMS Membership Survey Results

Student Status

9% of AMS survey respondents were students. Students (29 years old) were significantly younger on average than non-students (55 years old). Those identifying as Black/African American, Hispanic/Latinx, women, or another gender identity were significantly more likely to be students, perhaps because these groups are also younger.

Student Status of AMS Survey Respondents by Racial, Ethnic, or Cultural Identity		
	Student	Not a student
Asian	16%	84%
Black or African American	27%	73%
Hispanic or Latinx	29%	71%
White or European	8%	92%
Another racial, ethnic, or cultural identity	17%	83%
Two or more racial, ethnic or cultural identities	25%	75%

Findings were statistically significant, $p < .001$. Only United States residents were asked to provide their racial, ethnic, or cultural identity, and residents outside the United States are not included in this table. Due to small group sizes, “Native American or Alaska Native”, “Indian or Pakistani”, “Native Hawaiian or other Pacific Islander”, and “Middle Eastern or North African” were combined into “Another racial, ethnic, or cultural identity.”

Student Status of AMS Survey Respondents by Gender Identity		
	Student	Not a student
Men	7%	93%
Women	16%	84%
Another gender identity	30%	70%

Findings were statistically significant, $p < .001$. Due to small group sizes, “Agender”, “Non-binary”, and “Two spirit” were combined into “Another gender identity.”

For students’ level of study, 67% were enrolled in graduate school, 31% were enrolled in an undergraduate degree program, and 2% in a different type of degree program. There were no significant differences by gender identity or racial, ethnic, or cultural identity. As expected, undergraduate students (24 years old) were significantly younger than graduate students (30 years old).

Degree Background

Over half (58%) of AMS survey respondents had at least one parent who earned a bachelor’s degree. There were no significant differences by race, ethnic, or cultural identity, but there were significant differences by gender identity. A greater percentage of women had a parent with a bachelor’s degree.

Gender Identity of AMS Survey Respondents by Parent Degree Status		
	At least one parent with a bachelor’s degree	No parent with a bachelor’s degree
Men	55%	45%
Women	67%	33%
Another gender identity	57%	43%

Findings were statistically significant, $p < .001$. Due to small group sizes, “Agender”, “Non-binary”, and “Two spirit” were combined into “Another gender identity.”

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For those who are not students, most respondents (46%) held a doctorate as their highest degree. 29% held a master’s degree, 20% held a bachelor’s degree, 2% held an associate’s or other degree, and 3% had high school as their highest education level. Asian respondents had a significantly larger percentage of doctoral degrees than other groups, and men also had higher percentage of doctoral degrees.

Highest Degree of AMS Survey Respondents by Racial, Ethnic, or Cultural Identity					
	Doctorate degree	Master’s degree	Bachelor’s degree	High school	Associate’s or other degree
Asian	76%	13%	10%	1%	0%
Black or African American	33%	30%	29%	6%	2%
Hispanic or Latinx	37%	18%	31%	10%	4%
White or European	41%	33%	22%	3%	1%
Another racial, ethnic, or cultural identity	67%	17%	9%	5%	2%
Two or more racial, ethnic or cultural identities	46%	25%	22%	4%	3%

Findings were statistically significant, $p < .001$. Only United States residents were asked to provide their racial, ethnic, or cultural identity, and residents outside the United States are not included in this table. Due to small group sizes, “Native American or Alaska Native”, “Indian or Pakistani”, “Native Hawaiian or other Pacific Islander”, and “Middle Eastern or North African” were combined into “Another racial, ethnic, or cultural identity.”

Highest Degree of AMS Survey Respondents by Gender Identity					
	Doctorate degree	Master’s degree	Bachelor’s degree	High school	Associate’s or other degree
Men	48%	29%	20%	2%	1%
Women	43%	29%	22%	4%	2%
Another gender identity	44%	30%	17%	9%	0%

Findings were statistically significant, $p < .05$. Due to small group sizes, “Agender”, “Non-binary”, and “Two spirit” were combined into “Another gender identity.”

A significantly greater percentage of AMS survey respondents with only a high school education had a parent who earned a bachelor’s degrees. This is likely due to age. Younger respondents were more likely to have only a high school education, and more likely to have a parent with a bachelor’s degree.

Highest Degree of AMS Survey Respondents by Parent Degree Status		
	At least one parent with a bachelor’s degree	No parent with a bachelor’s degree
Doctorate degree	59%	41%
Master’s degree	56%	44%
Bachelor’s degree	59%	41%
High school	66%	34%
Associate’s or other degree	36%	64%

Findings were statistically significant, $p < .01$.

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Minority Serving Institutions

Only 2% of respondents attended a minority serving institution (MSI). Respondents who identified as Black/African American and Hispanic/Latinx were significantly more likely to have attended an MSI. Past MSI attendees (45 years old) were significantly younger on average than non-attendees (52 years old), possibly because Black/African American and Hispanic/Latinx respondents were younger on average compared to other groups.

Racial, Ethnic, or Cultural Identity of AMS Survey Respondents who Attended a Minority Serving Institution (MSI)		
	Attended MSI	Never attended MSI
Asian	3%	97%
Black or African American	25%	75%
Hispanic or Latinx	18%	82%
White or European	1%	99%
Another racial, ethnic, or cultural identity	10%	90%
Two or more racial, ethnic or cultural identities	5%	95%

Findings were statistically significant, $p < .001$. Only United States residents were asked to provide their racial, ethnic, or cultural identity, and residents outside the United States are not included in this table. Due to small group sizes, “Native American or Alaska Native”, “Indian or Pakistani”, “Native Hawaiian or other Pacific Islander”, and “Middle Eastern or North African” were combined into “Another racial, ethnic, or cultural identity.”

Employment Background

For this section, students were removed from all analyses to ensure any differences were due to employment factors, not student status. Most respondents were employed full-time (68%) or retired (22%). The remaining worked part time (6%), as a postdoc (2%), or were not employed due to being a full-time caregiver or seeking employment (2%). White/European respondents were significantly more likely to be retired, whereas Black/African American and multiracial respondents were more likely to work full-time. When examining employment status by age, postdocs were the youngest employment group on average and retirees were the oldest employment group on average.

Employment Status of AMS Survey Respondents by Racial, Ethnic, or Cultural Identity					
	Full-time	Part-time	Postdoc	Retired	Caregiver or unemployed
Asian	75%	3%	10%	11%	1%
Black or African American	80%	0%	3%	17%	0%
Hispanic or Latinx	77%	3%	6%	11%	3%
White or European	68%	7%	1%	22%	2%
Another racial, ethnic, or cultural identity	77%	3%	9%	8%	3%
Two or more racial, ethnic or cultural identities	85%	5%	0%	7%	3%

Findings were statistically significant, $p < .001$. Only United States residents were asked to provide their racial, ethnic, or cultural identity, and residents outside the United States are not included in this table. Due to small group sizes, “Native American or Alaska Native”, “Indian or Pakistani”, “Native Hawaiian or other Pacific Islander”, and “Middle Eastern or North African” were combined into “Another racial, ethnic, or cultural identity.” Does not include students.

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Average Age of AMS Survey Respondents by Employment Status	
Full-time	50
Part-time	63
Postdoc	34
Retired	73
Caregiver or unemployed	52

Findings were statistically significant, $p < .001$. Does not include students.

30% of respondents in the United States worked for the government (including agencies, contractors, and military), 29% for academia (universities, colleges, K-12 education), 19% for industry, 11% for media platforms, 9% for federally funded research and development centers (FFRDC) or NOAA cooperative institutes, and 2% for another sector. Black/African American and Hispanic/Latinx respondents were more likely to work in media, White/European respondents in industry, and Asian respondents in academia.

Employment Sector of AMS Survey Respondents by Racial, Ethnic, or Cultural Identity					
	Government	Academia	Media	Industry	FFRDC, NOAA, or other
Asian	30%	42%	0%	11%	17%
Black or African American	19%	36%	32%	7%	6%
Hispanic or Latinx	17%	30%	33%	10%	10%
White or European	32%	25%	12%	22%	9%
Another racial, ethnic, or cultural identity	32%	42%	3%	16%	7%
Two or more racial, ethnic or cultural identities	26%	35%	11%	18%	10%

Findings were statistically significant, $p < .001$. Only United States residents were asked to provide their racial, ethnic, or cultural identity, and residents outside the United States are not included in this table. Due to small group sizes, “Native American or Alaska Native”, “Indian or Pakistani”, “Native Hawaiian or other Pacific Islander”, and “Middle Eastern or North African” were combined into “Another racial, ethnic, or cultural identity.” FFRDC = federally funded research and development center, NOAA = National Oceanic and Atmospheric Administration cooperative institute. Does not include students.

Relocation for Spouses or Partners

22% of AMS respondents have relocated for a spouse or partner. There were no significant differences by racial, ethnic, or cultural identity. Women were significantly more likely to have relocated.

Gender Identity of AMS Survey Respondents who Relocated for a Spouse or Partner		
	Relocated	Never relocated
Men	18%	82%
Women	35%	65%
Another gender identity	22%	78%

Findings were statistically significant, $p < .001$. Due to small group sizes, “Agender”, “Non-binary”, and “Two spirit” were combined into “Another gender identity.”

Goal 2: Culture and Belonging within AMS

Accommodations at AMS Events

Several AMS survey respondents indicated that they would use certain accommodations at AMS sponsored events if they were made available, especially all-gender restrooms and quiet rooms. We also asked respondents with children under 18 if they would use daycare services at AMS events. 69% answered not likely, 15% somewhat likely, and 16% likely or extremely likely. It is possible that many of the respondents who answered “not likely” have older children that do not require daycare services.

Accommodations that AMS Survey Respondents Would Use at AMS Sponsored Events	
All-gender restrooms	17%
Quiet rooms or meditation rooms	16%
Dietary accommodations for health, intolerances, or disabilities	13%
Dietary accommodations for religious, environmental, or other reasons	9%
Lactation rooms	4%
Space for prayer or other religious needs	3%

Respondents could select multiple options, and numbers do not add up to 100%. 17% of respondents selected more than one accommodation.

Inclusion at AMS Events

Most AMS survey respondents felt welcome and included at AMS sponsored events all or most of the time (84%). Fewer felt included some of the time (14%) or not at all (2%). We conducted a linear regression to examine the effects of different demographic groups. Respondents were less likely to feel included at AMS events if they identified as women, another gender identity, Black/African American, or another racial, ethnic, or cultural identity. In addition, they felt less included if they had a disability, and if a bachelor’s was their highest degree.

We were not able to include US residency in the regression, because non-US residents did not answer racial, ethnic, or cultural identity items. We did that analysis separately. US residents were significantly more likely to feel included at events. 85% of US residents felt included all or most of the time, while 79% of non-US citizens felt included all or most of the time.

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Linear Regression of How Included AMS Survey Respondents Feel at AMS Sponsored Events		
Variable	Significance Testing Results	P-Value
Gender identity (reference group was men)		
Women	Feel significantly less included	$p < .001$
Another gender identity	Feel significantly less included	$p < .01$
Racial, ethnic, or cultural identity (reference group was White)		
Asian	No significant differences	
Black or African American	Feel significantly less included	
Hispanic or Latinx	No significant differences	$p < .001$
Another racial, ethnic, or cultural identity	Feel significantly less included	$p < .05$
Two or more racial, ethnic, or cultural identities	No significant differences	
Sexual orientation (reference group was heterosexual)		
Bisexual or pansexual	No significant differences	
Homosexual	No significant differences	
Another sexual orientation	No significant differences	
Disability status (reference group was not having a disability)		
Had a disability	Feel significantly less included	$p < .01$
Accessibility aids (reference group was not needing aids)		
Need accessibility aids	No significant differences	
Highest degree (reference group was doctoral)		
Master's degree	No significant differences	
Bachelor's degree	Feel significantly less included	$p < .001$
High school	No significant differences	
Associate's or other degree	No significant differences	
Citizenship status (reference group was US citizenship)		
Non-US citizenship	No significant differences	
When joined AMS	No significant differences	
Age	No significant differences	

Harassment and Bullying at AMS Events

Most respondents (87%) never encountered or heard of any harassment or bullying at AMS sponsored events.

AMS Survey Respondents Who Experienced Bullying or Harassment at AMS Sponsored Events	
Happened to respondent	4%
Witnessed it happening to someone else	4%
Heard about it happening to someone else	8%
Never encountered	87%

Respondents could select multiple options, and numbers do not add up to 100%.

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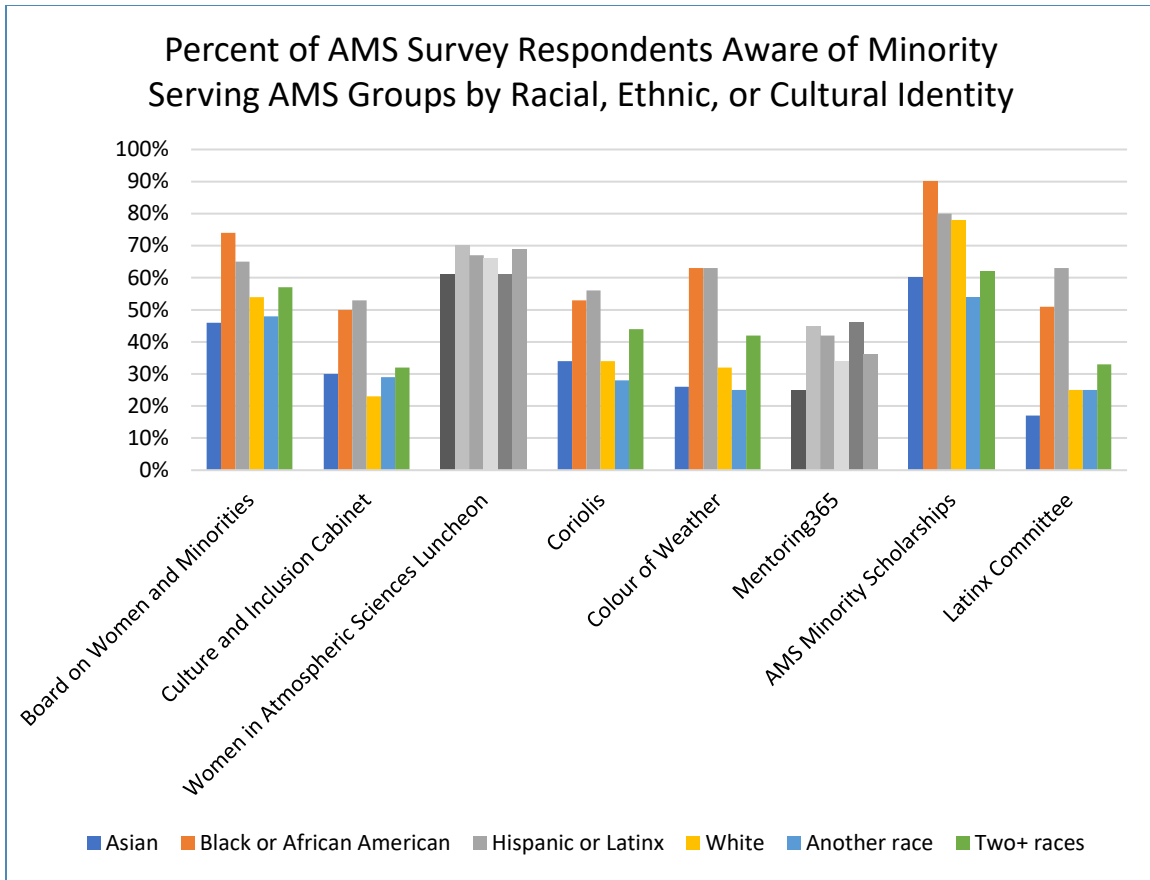
We conducted a binary regression to examine which demographic groups were more likely to experience harassment or bullying. Our results showed that respondents who identified as women or another gender identity, as well as respondents who identified as Hispanic/Latinx or another racial, ethnic, or cultural identity were more likely to personally experience harassment or bullying at AMS events.

Logistic Regression of AMS Survey Respondents who Experienced Harassment or Bullying at AMS Sponsored Events		
Variable	Significance Testing Results	P-Value
Gender identity (reference group was men)		
Women	6.2 times significantly more likely to experience	$p < .001$
Another gender identity	8.4 times significantly more likely to experience	$p < .05$
Racial, ethnic, or cultural identity (reference group was White)		
Asian	No significant differences	
Black or African American	No significant differences	
Hispanic or Latinx	2.8 times significantly more likely to experience	$p < .05$
Another racial, ethnic, or cultural identity	4.4 times significantly more likely to experience	$p < .05$
Two or more racial, ethnic, or cultural identities	No significant differences	
Sexual orientation (reference group was heterosexual)		
Bisexual or pansexual	No significant differences	
Homosexual	No significant differences	
Another sexual orientation	No significant differences	
Disability status (reference group was not having a disability)		
Had a disability	No significant differences	
Age	No significant differences	

Awareness of AMS Minority Serving Groups and Resources

AMS survey respondents were most likely to have heard of the following three AMS groups and resources: AMS Minority Scholarships (72%), the Women in Atmospheric Sciences Luncheon (62%), and the Board on Women and Minorities (51%). There were no racial, ethnic, or cultural group differences in awareness of Mentoring365 and the Women in Atmospheric Sciences Luncheon. For the other minority serving groups, Black/African American and Hispanic/Latinx respondents were significantly more likely to be aware of them.

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Findings in color were statistically significant, $p < .05$. Only United States residents were asked to provide their racial, ethnic, or cultural identity, and residents outside the United States are not included in this table. Due to small group sizes, “Native American or Alaska Native”, “Indian or Pakistani”, “Native Hawaiian or other Pacific Islander”, and “Middle Eastern or North African” were combined into “Another racial, ethnic, or cultural identity.”

Goal 3: Value of AMS Benefits and Activities

When joined AMS

Overall, most respondents joined AMS before 1995 (43%). 18% joined between 1995-2004, 22% joined between 2005-2014, 14% joined between 2015-2019, and 3% joined in 2020. As expected, those who joined more recently were significantly younger.

Average Age of AMS Survey Respondents by when they Joined AMS	
Before 1995	67
1995-2004	49
2005-2014	40
2015-2020	37

Findings were statistically significant, $p < .001$.

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We examined how the representation of AMS membership has changed over time, and we found that the membership is becoming more diverse in recent years. When comparing 2015-2020 to before 1995, there were significantly more respondents identifying as racial, ethnic, or cultural identities other than White/European. Growth was most notable among Asian and multiracial respondents. There were also significantly more women represented among AMS membership in 2015-2020 than before 1995.

When AMS Survey Respondents Joined AMS by Racial, Ethnic, or Cultural Identity				
	Before 1995	1995-2004	2005-2014	2015-2020
Asian	3%	5%	4%	8%
Black or African American	1%	3%	2%	4%
Hispanic or Latinx	1%	2%	4%	3%
White or European	92%	85%	83%	76%
Another racial, ethnic, or cultural identity	1%	2%	2%	3%
Two or more racial, ethnic or cultural identities	2%	3%	5%	6%

Findings were statistically significant, $p < .001$. Only United States residents were asked to provide their racial, ethnic, or cultural identity, and residents outside the United States are not included in this table. Due to small group sizes, “Native American or Alaska Native”, “Indian or Pakistani”, “Native Hawaiian or other Pacific Islander”, and “Middle Eastern or North African” were combined into “Another racial, ethnic, or cultural identity.”

When AMS Survey Respondents Joined AMS by Gender Identity				
	Before 1995	1995-2004	2005-2014	2015-2020
Men	90%	72%	64%	54%
Women	10%	27%	35%	44%
Another gender identity	<1%	<1%	1%	2%

Findings were statistically significant, $p < .001$. Due to small group sizes, “Agender”, “Non-binary”, and “Two spirit” were combined into “Another gender identity.”

Primary Membership

73% of respondents considered AMS to be their primary society of membership. Respondents who studied atmospheric science were most likely to consider AMS as their primary society of membership. Respondents with non-science degrees were also more likely to consider AMS as their primary society.

Degree Major of AMS Survey Respondents who Consider AMS as their Primary Society		
	AMS primary society	AMS not primary society
Atmospheric science major	84%	16%
Other geophysical science major	50%	50%
Other science or engineering major	53%	47%
Non-science major	75%	25%
Two or more majors	74%	26%

Findings were statistically significant, $p < .001$.

2020 AMS Membership Survey Results

AMS Events

Overall, 63% of AMS survey respondents attended an AMS sponsored event in the past five years. There were no significant differences in whether AMS events were attended by racial, ethnic, or cultural identity. There were significant differences by employment sector. Those employed at FFRDCs, NOAA cooperative institutes, and academia were more likely to have attended AMS events in the past, and those employed in media were less likely to have attended AMS events in the past.

Employment Sector of AMS Survey Respondents in the United States by AMS Sponsored Event Attendance in the Past Five Years		
	Attended AMS events	Did not attend AMS events
Government	69%	31%
Academia	73%	27%
Industry	66%	34%
Media	56%	44%
FFRDC, NOAA, or other	76%	24%

Findings were statistically significant, $p < .05$. FFRDC = federally funded research and development center, NOAA = National Oceanic and Atmospheric Administration cooperative institute. Does not include students.

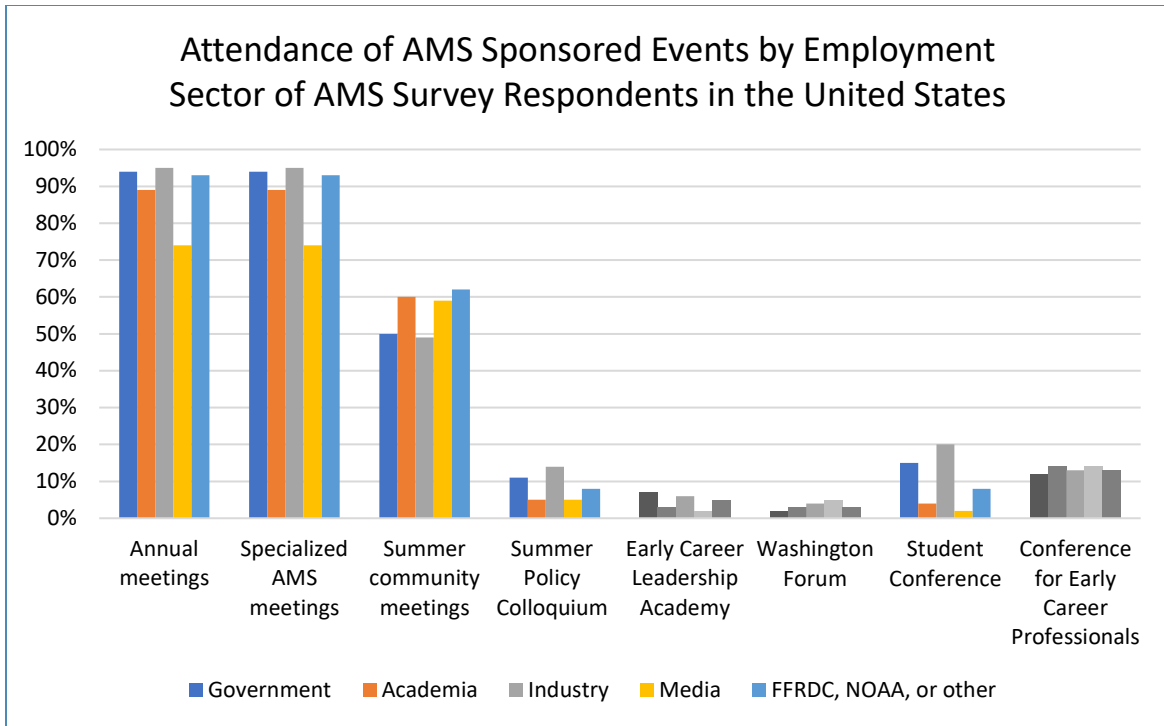
If respondents attended an AMS event in the past 5 years, they were asked which events they attended. The most commonly attended events were annual meetings (90%), specialized AMS meetings or conferences (90%), and summer community meetings (52%). Black/African American respondents were significantly more likely to have attended the AMS Student Conference. There were no other significant differences in which AMS events were attended by racial, ethnic, or cultural identity.

Racial, Ethnic, or Cultural Identity of AMS Survey Respondents by AMS Student Conference Attendance		
	Attended Student Conference	Did not attend Student Conference
Asian	5%	95%
Black or African American	25%	75%
Hispanic or Latinx	5%	95%
White or European	11%	89%
Another racial, ethnic, or cultural identity	10%	90%
Two or more racial, ethnic or cultural identities	11%	89%

Findings were statistically significant, $p < .05$. Only United States residents were asked to provide their racial, ethnic, or cultural identity, and residents outside the United States are not included in this table. Due to small group sizes, "Native American or Alaska Native", "Indian or Pakistani", "Native Hawaiian or other Pacific Islander", and "Middle Eastern or North African" were combined into "Another racial, ethnic, or cultural identity."

By employment sector, respondents working in media were significantly less likely to have attended AMS annual meetings and specialized meetings or conferences. Respondents working in government and industry were less likely to have attended summer community meetings, but were more likely to have attended the AMS Student Conference and the AMS Summer Policy Colloquium.

2020 AMS Membership Survey Results



Findings in color were statistically significant, $p < .05$. FFRDC = federally funded research and development center, NOAA = National Oceanic and Atmospheric Administration cooperative institute. Does not include students.

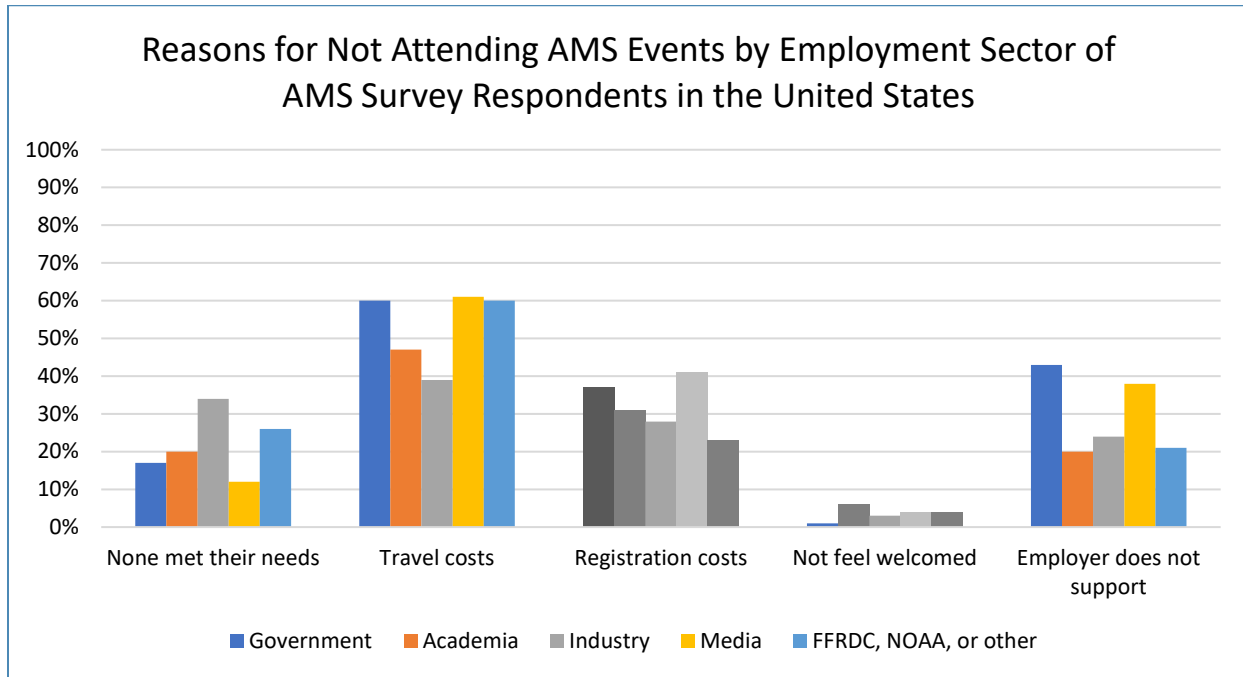
If respondents did not attend any AMS events in the past 5 years, they selected why they did not attend. Respondents did not attend because of travel costs (50%), registration costs (31%), none of the events met their needs (22%), attendance was not supported by their employer (23%), and they would not feel welcome (3%). Black/African American respondents were more likely to not attend AMS events due to registration costs. There were no other significant differences by racial, ethnic, or cultural identity.

Racial, Ethnic, or Cultural Identity of AMS Survey Respondents who Did Not Attend AMS Events Due to the Cost of Registration		
	Registration cost was an issue	Registration cost was not an issue
Asian	7%	93%
Black or African American	77%	23%
Hispanic or Latinx	27%	73%
White or European	31%	69%
Another racial, ethnic, or cultural identity	27%	73%
Two or more racial, ethnic or cultural identities	40%	60%

Findings were statistically significant, $p < .05$. Only United States residents were asked to provide their racial, ethnic, or cultural identity, and residents outside the United States are not included in this table. Due to small group sizes, “Native American or Alaska Native”, “Indian or Pakistani”, “Native Hawaiian or other Pacific Islander”, and “Middle Eastern or North African” were combined into “Another racial, ethnic, or cultural identity.”

2020 AMS Membership Survey Results

By employment sector, respondents working in industry were less likely to attend AMS events because AMS events did not meet their needs. Respondents working in government and media were less likely to attend AMS events because their employers did not support it and because of travel costs.



Findings in color were statistically significant, $p < .05$. FFRDC = federally funded research and development center, NOAA = National Oceanic and Atmospheric Administration cooperative institute. Does not include students.

Volunteer Status

32% of AMS survey respondents performed volunteer activities for AMS. Those identifying as Asian, Hispanic/Latinx, women, and another gender identity were more likely to have volunteered.

Racial, Ethnic, or Cultural Identity of AMS Survey Respondents by Volunteer Status		
	Volunteered	Never volunteered
Asian	50%	50%
Black or African American	39%	61%
Hispanic or Latinx	47%	53%
White or European	32%	68%
Another racial, ethnic, or cultural identity	49%	51%
Two or more racial, ethnic or cultural identities	46%	54%

Findings were statistically significant, $p < .001$. Only United States residents were asked to provide their racial, ethnic, or cultural identity, and residents outside the United States are not included in this table. Due to small group sizes, “Native American or Alaska Native”, “Indian or Pakistani”, “Native Hawaiian or other Pacific Islander”, and “Middle Eastern or North African” were combined into “Another racial, ethnic, or cultural identity.”

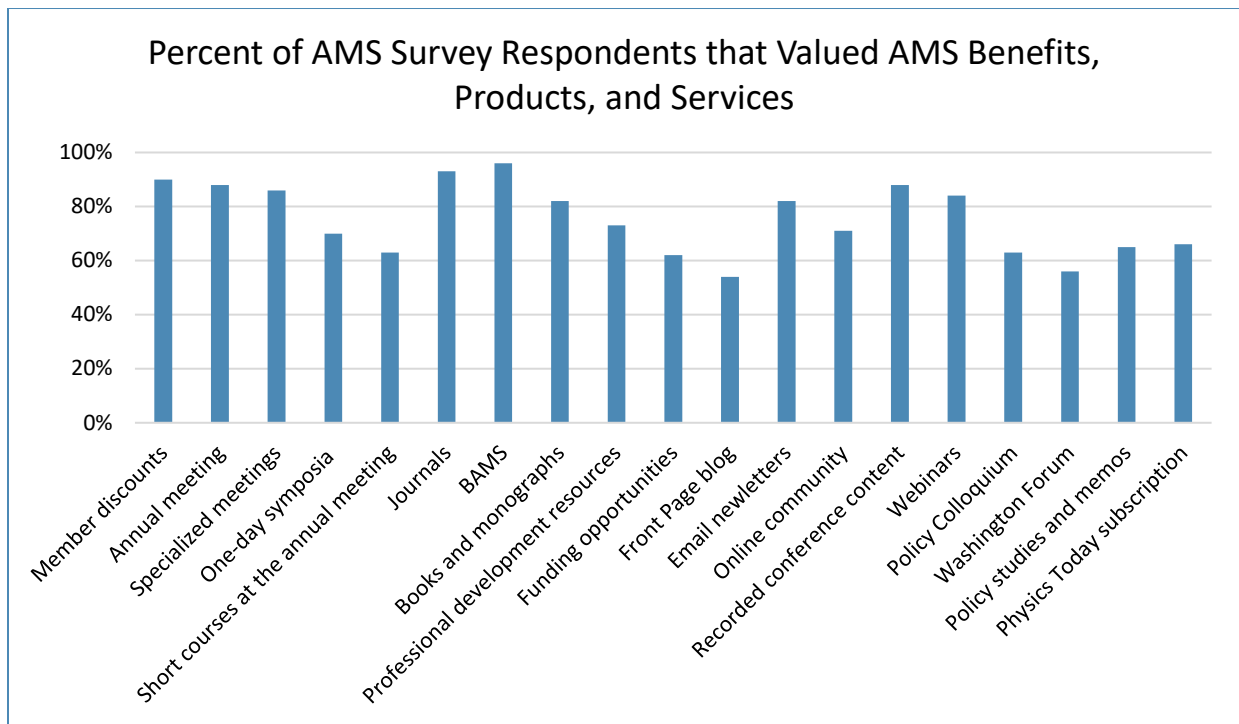
2020 AMS Membership Survey Results

Gender Identity of AMS Survey Respondents by Volunteer Status		
	Volunteered	Never volunteered
Men	31%	69%
Women	38%	62%
Another gender identity	41%	59%

Findings were statistically significant, $p < .01$. Due to small group sizes, “Agender”, “Non-binary”, and “Two spirit” were combined into “Another gender identity.”

Value of AMS Benefits, Products, and Services

All 19 of the AMS benefits, products, and services were extremely valued, valued, or somewhat valued by the majority of respondents. The greatest percentage of respondents valued the BAMS journal (96%), journals in general (93%), and member discounts (90%).



We examined respondents’ average perceived value of the 19 AMS benefits, products, and services listed in the survey by student status, when they joined AMS, and their employment sector in the United States. Students, younger respondents, and those working in academia valued these benefits more highly. Those working in media valued these benefits less than the other groups.

Average Perceived Value of AMS Benefits and Products by Student Status of AMS Survey Respondents	
Students	1.71
Non-students	1.34

Findings were statistically significant, $p < .001$. Values were recoded to range from 0-3 (0=not at all valuable to me, 1=somewhat valuable to me, 2=valuable to me, 3=extremely valuable to me). Higher average scores indicate higher perceived value.

2020 AMS Membership Survey Results

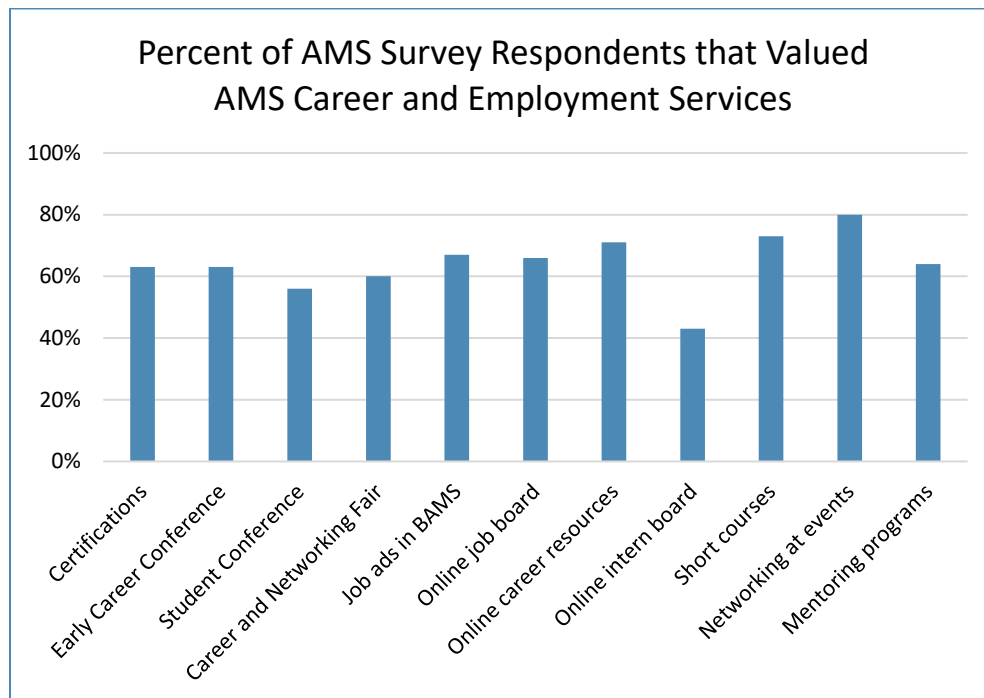
Average Perceived Value of AMS Benefits and Products by when AMS Survey Respondents Joined AMS	
Before 1995	1.25
1995-2004	1.37
2005-2014	1.43
2015-2020	1.63

Findings were statistically significant, $p < .001$. Values were recoded to range from 0-3 (0=not at all valuable to me, 1=somewhat valuable to me, 2=valuable to me, 3=extremely valuable to me). Higher average scores indicate higher perceived value.

Average Perceived Value of AMS Benefits and Products by Employment Sector of AMS Survey Respondents in the United States	
Government	1.38
Academia	1.43
Industry	1.30
Media	1.19
FFRDC, NOAA, or other	1.38

Findings were statistically significant, $p < .001$. Values were recoded to range from 0-3 (0=not at all valuable to me, 1=somewhat valuable to me, 2=valuable to me, 3=extremely valuable to me). Higher average scores indicate higher perceived value. FFRDC = federally funded research and development center, NOAA = National Oceanic and Atmospheric Administration cooperative institute. Does not include students.

Of the 11 AMS career and employment services, the greatest percentage of respondents valued networking at AMS events (80%), AMS short courses (73%), and AMS online career resources (70%).



2020 AMS Membership Survey Results

We also examined respondents' perceived value of the 11 AMS career and employment services listed in the survey. Students and younger respondents also valued these services more highly. Unlike the previous benefits, those working in media and industry were more likely to value these services.

Average Perceived Value of AMS Career and Employment Services by Student Status of AMS Survey Respondents	
Students	1.86
Non-students	1.12

Findings were statistically significant, $p < .001$. Values were recoded to range from 0-3 (0=not at all valuable to me, 1=somewhat valuable to me, 2=valuable to me, 3=extremely valuable to me). Higher average scores indicate higher perceived value.

Average Perceived Value of AMS Career and Employment Services by when AMS Survey Respondents Joined AMS	
Before 1995	0.92
1995-2004	1.20
2005-2014	1.33
2015-2020	1.64

Findings were statistically significant, $p < .001$. Values were recoded to range from 0-3 (0=not at all valuable to me, 1=somewhat valuable to me, 2=valuable to me, 3=extremely valuable to me). Higher average scores indicate higher perceived value.

Average Perceived Value of AMS Career and Employment Services by Employment Sector of AMS Survey Respondents in the United States	
Government	1.09
Academia	1.13
Industry	1.25
Media	1.45
FFRDC, NOAA, or other	1.11

Findings were statistically significant, $p < .001$. Values were recoded to range from 0-3 (0=not at all valuable to me, 1=somewhat valuable to me, 2=valuable to me, 3=extremely valuable to me). Higher average scores indicate higher perceived value. FFRDC = federally funded research and development center, NOAA = National Oceanic and Atmospheric Administration cooperative institute. Does not includes students.

Appendix

To conduct significance testing analyses with regressions, one-way analyses of variance (ANOVA) and crosstabs, questions that allowed multiple responses were recoded. For the analyses to be interpreted accurately, the question categories need to be mutually exclusive, and respondents cannot be in more than one category simultaneously.

Gender identity was recoded into 3 categories: "Men", "Women", and "Another gender identity." If respondents picked more than one answer, they were coded into "Another gender identity." Due to having too few respondents (less than 20 in each group), 3 of the original categories were also combined into "Another gender identity": "Agender", "Non-binary", and "Two spirit."

2020 AMS Membership Survey Results

Racial, ethnic, and cultural identity was recoded into 6 categories: “Asian”, “Black or African American”, “Hispanic or Latinx”, “White or European”, “Another racial, ethnic, or cultural identity”, and “Two or more racial, ethnic, or cultural identities.” If respondents picked more than one answer, they were coded into “two or more racial, ethnic, or cultural identities.” Due to having too few respondents (less than 20 in each group), 4 of the original categories were combined into “Another racial, ethnic, or cultural identity”: “American Indian or Alaska Native”, “Indian or Pakistani”, “Middle Eastern or North African”, and “Native Hawaiian or other Pacific Islander.” When group sizes are too small, they do not have enough statistical power for significance testing and cannot produce reliable results.

Disability status was recoded into 2 categories: “Yes” when respondents indicated at least one disability, and “No” when respondents did not indicate any disabilities. The same recoding was done for accessibility aids required at AMS events.