

APS Time Trend Analysis

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Reasons for Joining

Question formats changed only slightly over the past 11 years; we combined the rank-ordering (#1, #2, #3) results this year to the older surveys which asked respondents to indicate up to three reasons without prioritizing. We see the following trends in the table below:

- 1) A progressive increase in the relative importance of abstract submission over time and a slight increase in the importance of reduced registration to APS meetings.
- 2) A sharp decrease in the importance of keeping in touch with the community of physicists.
- 3) A sharp recent decrease in the importance of supporting the physics community after a sharp increase in 2008, with the share indicating its importance decreasing considerably since 2004.
- 4) A similar bounce in the importance of Division/Topical Group/Section/Forums in 2008 that decreased in 2015 but remains considerably higher than in 2004.
- 5) A sharp increase recently in the share who were influenced by low dues for students/recent graduates, and a slight increase in the share who joined in part for career guidance/employment help, both of which may be partially driven by an increasing proportion of student respondents in 2015.
- 6) A steady decline in those who join for journal subscriptions at reduced rates.
- 7) A relatively stable share joining to receive APS News and for eligibility for a possible fellowship between 2008 and 2015, after a sharp rise from very low levels in 2004.

Factors that most influenced decision to join the APS (top 3)	2015	2008	2004*
Ability to submit abstract for APS meeting	39%	35%	33%
Keep in touch with community of physicists	33%	40%	43%
Keep in touch with developments in the field	34%	41%	42%
Receive <i>Physics Today</i>	31%	42%	40%
APS meetings registration at reduced rates	31%	28%	27%
Support the physics community	26%	52%	41%
Networking opportunities that facilitate professional connections	21%	N/A	N/A
Professor/employer/colleague recommended I join	19%	17%	19%
Division, Topical Group, Section and/or Forum participation	19%	22%	13%
Low dues for students and recent graduates	17%	8%	11%
Career guidance/employment help	10%	9%	8%
Journal subscriptions at reduced rates	7%	10%	15%
Receive <i>APS News</i>	6%	8%	0%
Eligibility for possible fellowship	6%	6%	2%
Other	1%	3%	2%

2004 data was available only as total, combined U.S. & International.

One change in the survey's administration that may exaggerate the apparent trends lies in the addition of networking opportunities as a response option in 2015. The one-fifth of respondents who indicate it as among their top three reasons will have been less likely to indicate some of the other (and perhaps more general) responses.

Comparing trends for International suggests that from 2008 to 2015, the importance has increased for the ability to submit abstracts among the more popular reasons, and for professor/employer/colleague recommendations, low student/recent graduate dues, and career guidance/employment help.

The importance of keeping in touch with the community of physicists and with developments in the field, receiving *Physics Today* and *APS News*, reduced rates for journal subscriptions, and supporting the physics community are considerably lower.

Reasons for Remaining a Member

While we expect greater stability over time in terms of why members joined—if their recollection remains accurate, there was only one set of reasons a typical member had to join and fluctuations in the aggregate should simply reflect variations in the group of members who retain over time.

However, there is probably some selective recollection that occurs among longer-time members and the reasons for retaining should shift in response to variations in the perceived benefits and the availability or elimination of other benefits of membership. Key trends here include:

- 1) Similar to their reasons for joining the APS, members report that their reasons for remaining a member are far less driven today by keeping in touch, supporting the community, or receiving *Physics Today*.
- 2) There is also a decline in the proportion who remain a member for journal subscriptions at reduced rates, although the decline is less pronounced than it is as a reason for joining the APS.
- 3) There has been a steady increase in the proportion who remain a member to submit APS meeting abstracts and registrations for APS meetings at reduced rates.
- 4) Reduced-rate journal subscriptions and *APS News* are relatively stable/changing within the survey margin of error.
- 5) The addition of networking opportunities and low dues for students/recent graduates have had some impact on the decreasing proportion who indicated other reasons for remaining a member.
- 5) Overall the reasons for retention are becoming less concentrated and less generic—in 2004, three reasons (keeping in touch and supporting the community) were mentioned by 50% or more respondents, so they accounted for about half of the total reasons mentioned for renewing. In 2015, no reasons were mentioned by half of respondents, and the top three reasons combined account for less than 40% of the total reasons for renewing.

Factors that most influenced decision to remain a member	2015	2008	2004*
Keep in touch with developments in the field	41%	48%	53%
Keep in touch with community of physicists	40%	44%	51%
Support the physics community	35%	55%	50%
Ability to submit abstract for APS meeting	34%	30%	28%
Receive <i>Physics Today</i>	34%	44%	44%
APS meetings registration at reduced rates	30%	26%	22%
Networking opportunities that facilitate professional connections	23%	N/A	N/A
Division, Topical Group, Section and/or Forum participation	23%	25%	17%
Receive <i>APS News</i>	9%	10%	0%
Career guidance/employment help	9%	8%	6%
Low dues for students and recent graduates	7%	N/A	N/A
Eligibility for possible fellowship	7%	4%	3%
Journal subscriptions at reduced rates	6%	6%	9%
Other	3%	2%	2%

2015 & 2008 are U.S. only; 2004 data is combined U.S. & International.

Agreement with Statements Regarding APS

The image of APS measured by the proportion who strongly or somewhat agreed has fluctuated somewhat.

- 1) For keeping them informed, the proportion agreeing has declined among all members from 92% to 81% between 2004 and 2015, and among U.S. members it has declined from 86% to 81% from 2008 to 2015.
- 2) For serving the needs of the physics community, the proportion agreeing has declined among all members from 82% to 73% between 2004 and 2015, and among U.S. members it has declined from 84% to 75% from 2008 to 2015.
- 3) For providing direct member benefits, the proportion agreeing has remained constant among all members at 50% between 2004 and 2015, and among U.S. members it has declined from 56% to 57% from 2008 to 2015.

These estimates may fluctuate somewhat over time because the number of response options has varied: in 2008 there were four including “somewhat” and “strongly disagree,” and an additional “no opinion.” In 2015 they could indicate an additional response to “neither agree nor disagree.”

I am an APS member primarily because the Society ...	2015 Total	2015 U.S.	2008 U.S.	2008 Intl.	2004 Total
Keeps me informed about physics research and activities in the physics community.	81%	81%	86%	91%	92%
Serves the needs of the physics community (e.g., lobbying, improving education, and bringing the importance and excitement of physics to the general public) and I want to support these efforts.	73%	75%	84%	78%	82%
Provides direct member benefits (e.g. reduced journal prices and meeting fees, the directory, and group insurance programs).	50%	47%	56%	65%	50%

Value of APS Benefits

With uniform five-point scales used in the surveys over time, we matched the “top box” analysis used in previous reports to compare the relative perceived value of APS benefits below. The percentages below show the proportion who responded “extremely valuable” or “very valuable” (rather than moderately, not very, or not at all valuable) for U.S. respondents. In 2015 U.S. results varied by only 0-2 percentage points for each question compared to the overall results. Key findings include:

- 1) The proportion who place a higher value on the opportunity for them or their students to contribute a paper at APS meetings has risen over time.
- 2) The proportion who place a higher value on Physics Today, APS News, and career services/Job Fairs at meetings has declined over time.
- 3) The proportion who place a higher value on member registration fees at APS meetings and Division, Topical Group, Section and Forum membership rose between 2004 and 2008, but have remained roughly constant between 2008 and 2015.

Value: Extremely or Very Valuable	2015	2008	2004
Opportunity for you/your students to contribute paper at APS meetings	62%	56%	53%
<i>Physics Today</i>	55%	70%	77%
Member registration fees at APS meetings	45%	44%	37%
Division, Topical Group, Section and Forum membership	42%	42%	36%
<i>APS News</i>	35%	42%	42%
APS online journals at greatly reduced cost to member subscribers	22%	N/A	N/A
Career services/Job Fairs at meetings	20%	30%	33%
APS Local Links events (networking groups)	12%	N/A	N/A

Web Use

The two most recent surveys varied considerably in terms of specific content listed and in the timeframe, as respondents indicated their past six months' behavior in 2015 and their past year's behavior in 2008.

- The two surveys varied considerably in the proportion who indicated never visiting the website, as 8% of U.S. and 4% of international members indicated never visiting in the past year in 2008, and 21% of U.S. and 19% of international members indicated not visiting in the past six months in 2015. Some but not all of this apparent decrease in use reflects the change in time period covered, since the 2015 survey would treat some visitors who come once a year as non-users with the six-month period in the question.
- Fewer U.S. members indicate visiting the website to keep up-to-date with an APS unit (from 26% in 2008 to 21% in 2015) or APS programs (24% to 13%), to read APS News (from 21% to 16%), or to use the Member Directory (23% to 12%).
- International members show similar declines compared to how they responded in 2008. Fewer international members compared to U.S. members visited the APS website for four of the reasons listed below, but they show a smaller decreases than the U.S. members do for visits that access meeting information, keep up-to-date with an APS unit. The proportion of international members who visit to use the Member Directory or keep up-to-date with APS programs has dropped by half in the past seven years.

	2015 Total	2015 U.S.	2008 U.S.	2008 Intl.
Access APS meeting information	45%	47%	60%	49%
Keep up-to-date with an APS unit	19%	21%	26%	21%
Read APS News	18%	16%	21%	26%
Keep up-to-date with APS programs	14%	13%	24%	30%
Use the Member Directory	11%	12%	23%	21%

Factors that Would Drive Web Use

APS U.S.-based employed members indicated in 2008 that the tools most likely to bring them to the APS website more often were an APS blog with editorials on science/policy (53%), APS News articles (30%), career advice (28%), or unit newsletter topics (14%). Frequent updates to homepage articles (35%) or a networking bulletin board (21%) were also felt to be useful to bring more members.

International members differed considerably by prioritizing frequent updates to homepage articles (58%) much more highly than editorials on science/policy (39%) or career advice (14%), although they did place similar weight on blogs on APS News articles (35%) or unit newsletter topics (15%) and on a bulletin board (21%).

In a second question, members indicated they would definitely use or might try an APS blog with open discussion (56% overall), collaborating using a wiki (50%), an interactive listserv (43%), or updates on Facebook (25%). At the time, blogs were seen as the strongest tool for promoting more use/interaction with APS.

In 2015, question formats changed considerably as this survey measured usefulness and awareness as a yes/no opt-out question for each of a variety of APS communications efforts. However, it is worthwhile to examine the trend particularly for blogs, because they were seen as most effective in generating more traffic over time.

- In 2015, blogs (such as Physics Buzz and Physics Frontline) perform at around the midpoint of various APS, rated on average 2.68 on a 5-point scale for usefulness, with 14% rating them extremely or very useful, 39% somewhat useful, 25% not very or not useful at all and another 12% indicating not being aware.
- Geographically, U.S. members regard them as less valuable (2.61) than other members, particularly Asian (2.98) but lower than among Europeans (2.71).
- For now, blogs are rated by all members as less useful than unit newsletters, email newsletters, PhysicsCentral and particularly APS and journal websites, which have average usefulness ratings 14%, 10%, 13%, and 52% higher, respectively.
- A good strategic membership-related question to ask here is whether blogs need greater emphasis and/or improved implementation to deliver more member value. If this metric is moving slowly driven by refinements in content, it may be fine but for now it remains a work in progress. Similar/lower scores for social media and video suggest that members may be resistant to what most of us regard as web tools with common use but the typical APS member has yet to regard fondly.

Respondent Profile: Membership History

The average number of years reported by all members remains relatively constant between 2004 and 2015, at approximately 17.5 years, reflecting an identical proportion with 25 or more years of membership in both years and a shift toward more younger members in 2015 offset by a much larger cohort of members with 21-24 years in 2004.

Among U.S. members, the median dropped by two years, from 17.8 (estimated by ranges) in 2008 to 15.8 years in 2015.

Approximate years a member of APS	2015 Total	2015 U.S.	2008 U.S.	2008 Intl.	2004 Total
0-4	27%	22%	17%	23%	16%
5-9	14%	13%	15%	19%	14%
10-14	10%	10%	13%	17%	14%
15-20	14%	14%	9%	12%	12%
21-24	2%	2%	13%	12%	13%
25-29	8%	7%	10%	7%	9%
30-34	8%	10%	10%	6%	23%
35+	15%	21%	13%	4%	
Median	17.4	15.8	17.8	11.9	17.5

Education—The proportion who have earned a PhD or postgraduate degree (referred to in previous surveys as “Doctorate or PhD” dropped substantially from 95% in 2004 and 2008 to 85% among U.S. and all respondents in 2015.

There has been more than a doubling in the proportion with a Master’s degree in the U.S. since 2008 and a much larger increase in the proportion who have only completed a Bachelors. This primarily reflected our sampling process in 2015, which included graduate and undergraduate students who comprised 33% of the names sampled and 19% of the final survey results (due to a fairly low 12% response rate among this segment).

Highest Degree Earned	2015 Total	2015 U.S.	2008 U.S.	2008 Intl.	2004 Total
PhD or postgraduate	85%	85%	95%	95%	95%
Master's	9%	9%	4%	2%	4%
Bachelors	5%	6%	1%	1%	1%
AA or less	1%	1%	0%	2%	0%

Profession—The proportion of U.S. members identifying as physicists dropped only slightly among all members from 74% in 2004 to 72% in 2015, while among U.S. members it remained almost constant at 71% in 2008 and 70% in 2015.

- The proportion of engineers among U.S. members remained constant between 2008 and 2015, while it increased slightly among all members between 2004 and 2015.
- The proportion who were chemists in the U.S. decreased by half between 2008 and 2015, as did the proportion of all members between 2004 and 2015.
- Astronomer/Astrophysicists and Biophysicists have remained constant among all members 2004 to 2015 and among U.S. members from 2008 to 2015. The increase reporting “other” professions in 2015 primarily reflects the inclusion of students in the sample based on what we understand about the methodology from the earlier projects.

Profession	2015 Total	2015 U.S.	2008 U.S.	2008 Intl.	2004 Total
Physicist	72%	70%	71%	83%	74%
Engineer	12%	12%	12%	9%	11%
Chemist	3%	3%	6%	4%	6%
Astronomer/Astrophysicist	3%	3%	3%	1%	2%
Biophysicist	2%	2%	2%	1%	2%
Other	9%	10%	6%	2%	5%