

ASA Education and Outreach Program

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Currently, many people do not know what acoustics is. For example, at the 2016 Quadrennial Physics Congress (PhysCon), the undergraduate attendees most often asked, “What is acoustics?” As it stands, the field of acoustics is highly dependent on students accidentally discovering acoustics instead of seeking it out. Even worse, there are very few undergraduate institutions that offer acoustics-focused majors (Columbia College Chicago offers an Acoustics BS, <https://goo.gl/GwS6Ko>; University of Hartford offers an Acoustical Engineering and Music-focused BSE, <https://goo.gl/Msmi3a>; University of Kansas offers an Architecture Acoustics Undergraduate Certificate, <https://goo.gl/NnrLLz>), and others have very few courses focused on acoustics. So how can students get exposure to acoustics if they must rely on such low odd chances? One answer is outreach.

Acoustics outreach efforts promote awareness and understanding of acoustics. By conducting outreach, whether that be through lecture series, hands-on demonstration sessions, lab tours, or science blogging, acousticians can cultivate an appreciation for and an understanding of acoustics. Acoustical Society of America (ASA) members, as scientists and educators, would benefit themselves and their communities by getting involved in outreach activities. Successful outreach not only serves a very important teaching role, but it can also impact those doing outreach by giving positive impressions of their work and organizations.

Outreach allows scientists to interact with the wider, typically nonacademic, general public. In sharing our scientific expertise with those who pursued different academic aspirations or who may not have attended college at all, we can generate public interest and support for acoustics research and scientific research more generally. This can lead not only to a greater understanding of how acoustics research applies to everyday challenges but also to increased financial support. For example, grant providers, such as the National Science Foundation, often want to know how research will “advance discovery and understanding while promoting teaching, training, and learning [...]” (March, 2007). Therefore, by developing and including acoustics outreach programs, researchers will improve their likelihood of getting research funding.

Outreach aimed at college students, academics, and professionals helps build and strengthen networks. Reaching out to undergraduate students exposes them to acoustics courses, faculty, and research opportunities at various institutions. This can result in higher class enrollments, more acoustics-related majors, and even developing new undergraduate or graduate programs. Outreach at national, regional, and local events introduces acoustics to a wider audience, exposing people from related fields to acoustics programs and career opportunities. Outreach for those still in K-12 education improves students’ chances of discovering acoustics before enrolling in college. This means that more students can actively pursue acoustics or acoustics-related programs, avoiding late-stage discovery.

Member Age Distribution

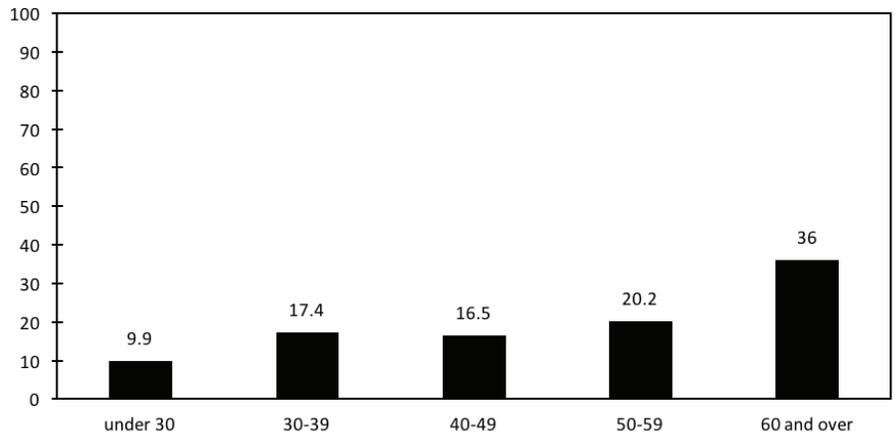


Figure 1. Distribution of ASA members by age. The data are based on 6,344 responses collected in 2015.

ASA members conducting outreach will simultaneously enact the purpose of the Society to generate, disseminate, and promote the knowledge and practical applications of acoustics. In addition, ASA members can act as representatives to help grow and diversify the membership. Currently, there are far fewer younger members in the Society, as shown in **Figure 1** (data from the ASA Profile of the Society Membership website, <https://goo.gl/Q2bb2b>). It is unclear if young people are not joining ASA due to lack of awareness or if they are not entering the field at all. By doing outreach, members will be able to interact with potential members and become better equipped to understand why the ASA age distribution skews older.

The most obvious benefit of science outreach is that it can be both fulfilling and fun. By conducting outreach, I have learned how to create interactive lesson plans, how to convey complex scientific concepts to children, how to talk to mixed-aged groups to ensure that everyone is following along, and how to address misinformation. Depending on the type of outreach you engage in and what you put into it, your personal benefits will vary.

If you're planning your own outreach effort, think about the format and audience. For example, if you want to create a website for children, complex equations will not be well received. At a loud university fair, interactive activities and flyers may work better than videos. Remember that you and your colleagues have a diverse set of skills and expertise. Your outreach will work best when you take advantage of these strengths. You can learn from those who are already doing acoustics outreach (Brigham Young University Acoustics Outreach, <https://goo.gl/ld2lFH>; ASA Georgia Tech Student Chapter, <https://goo.gl/jD7VHM>) but be sure to focus on what makes your program or research unique. The best way to learn how to be successful in outreach is to practice and you are welcome to participate in ASA outreach efforts.

The ASA Committee on Education in Acoustics (EdCom) hosts a hands-on demonstration session for middle-/high-school students and cosponsors with the Women in Acoustics (WIA) Committee a demonstration session for Girl Scouts called "Listen Up and Get Involved." Anyone interested in helping at an upcoming ASA meeting should contact the EdCom or WIA.

Finally, look for my reports in future *Acoustics Today* magazines. I will continue to write about how to get involved with acoustics education and outreach.

In the meantime, the following links are good resources for general outreach guidelines: University Engagement in Festivals: Top Tips and Case Studies, <https://goo.gl/OldLc>; Surrounded by Science: Learning Science in Informal Environments, <https://goo.gl/qs47nq>; and Center for the Advancement of Informal Science Education, <https://goo.gl/ls8SXJ>.

Biosketch



Keeta Jones is the Acoustical Society of America (ASA) Education and Outreach Coordinator. She works closely with the Committee on Education in Acoustics. She received her BA in linguistics and German at the University of Toledo, OH, and is completing her MA in linguistics at The Ohio State University. She conducted sociophonetic experiments and informal science education at the Buckeye Language Network facility located inside the Center of Science and Industry (COSI).

References

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