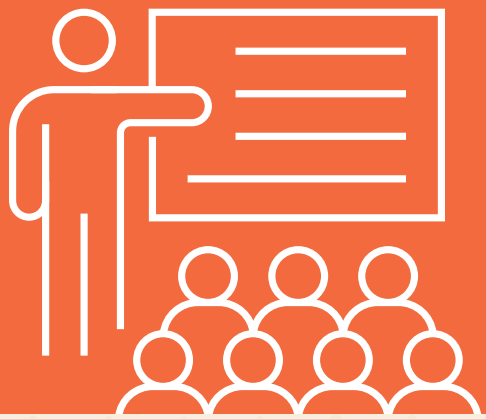
A HOME BASE FOR YOUR CAREER

Trevor Owens and Anne Marie Porter

Professional societies can foster a sense of belonging and offer early-career scientists opportunities to give back to their community.



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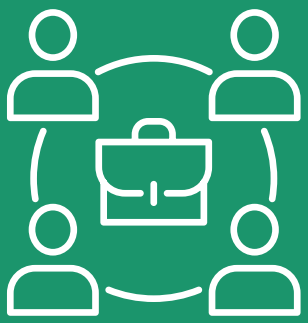

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Katie Burzynski was anxious. It was October 2018, and she was at her first AVS International Symposium and Exhibition, held every fall. (AVS is a professional society focused on the science and technology of materials, interfaces, and processing.) A graduate student at the time, she "was really nervous on how to present" her science. To her surprise, the symposium ended up being a great experience, and she recalls that "the AVS community was just so welcoming and inviting and really nurturing." Burzynski left the event thinking, "This is really fun, and I can see myself needing to have a larger community outside of my school." Burzynski, now a materials engineer at the Air Force Research Laboratory, attributes much of her career success to her ongoing engagement with AVS.

KATIE BURZYNSKI gives a student an award while serving as the 2023 AVS Ohio chapter chair. (Photo courtesy of Katie Burzynski.)

Tips for students and early-career professionals

- **Join societies and engage.** Most societies have discounted rates for students. Undergraduate students who join the Society of Physics Students get to join two of the societies in the American Institute of Physics federation for free.
- **Get to the conferences.** Throughout our interviews, we heard how important in-person interaction with colleagues has been for developing connections and careers.
- **Volunteer for leadership roles.** As a starting place, look for student or local chapters. Most societies also have open committee sessions that students can attend at conferences to learn how to get involved. Ask if a committee allows guests to experience what a committee meeting is like before joining it.

Science careers are often winding and weaving pathways across different jobs, fields, and institutions. As careers shift and evolve over time, people need a home base where they can reliably find support from their peers and friends.

As it's uncommon for someone to spend their whole career with a single institution, Burzynski says, "it's really important to have that network outside of your home organization, to help understand the different pathways that are open to you . . . other perspectives, other industries, other jobs." A society can be "your home base, no matter who's signing that paycheck."

Burzynski's society experience illustrates many of the themes that our research team at the American Institute of Physics (AIP, publisher of Physics Today) found in conversations with 22 early-career scientists and engineers. Given the critical role that professional societies play in career development, we interviewed society members to better understand why early-career scientists join societies and how their society connections advance their careers. AIP will release a full report on the results of this research in fall 2025. We highlight here some of the personal journeys of those early-career members: how they found a sense of belonging in societies and how societies gave them opportunities to give back to the scientific community.

A growing home for industry professionals

Benjamin Cromey is a member of Optica and a principal optical engineer at BAE Systems' Space and Mission Systems in Boulder, Colorado. There, Cromey has worked on the civil space business team, where he has been instrumental in leading optical design and analysis for the wide-field instrument on NASA's *Nancy Grace Roman Space Telescope*.

Cromey's connection to Optica started during a summer NSF Research Experiences for Undergraduates program after his freshman year at the University of Arizona in Tucson. His mentor for that summer was part of the Optica student chapter and encouraged him to get involved. He recalls, "I became a student member in the fall of 2012, and I'm now a life member of Optica. I'm sticking with it." He shares a number of fond memories about his undergraduate experience. He helped plan and run outreach programs, like Laser Fun Day: "We turn the optics building into a museum for the day, and we'll get anywhere from 600 to 1400 people showing up from the community." He later served as president of the Optica student chapter at the university as he was working on his PhD.

Now working in industry, Cromey sees a lot of value in continuing to engage with the community in Optica. That's in part, he says, because a lot of his company's customers are scientists, "so it is helpful to go to these conferences and give presentations that they're going to see." But unless there is a clear benefit for the business, companies may not fund conference attendance or provide employees with the time off to travel.

"The way that I've been able to stay involved is always having a business-related angle for going to the conference," Cromey says. "I resolved the first time I went to a conference to be the world's greatest notetaker. That way, if I went to a whole bunch of presentations, then other people could benefit from my going." He has informed his coworkers about new technological developments, for example, and identified new specialists to invite for potential company presentations.

In industry, Cromey has had fewer opportunities to mentor and teach students, which were two of his passions. Being an Optica member gave him the chance to teach. With encouragement from his supervisor at Ball Aerospace (which became the Space and Mission Systems sector at BAE), Cromey applied to and was admitted into Optica's ambassador program. He did not get into that competitive program the first time, but he was persistent and made it in the second time he applied.

BENJAMIN CROMEY (center) at a speed mentoring event in 2025. (Photo courtesy of Benjamin Cromey.)

As an ambassador, he gave back to future industry professionals by giving "talks about how to transition well into industry out of a PhD program, how to write a good résumé, how to give good presentations." It's rewarding to help students have great careers, Cromey says, and "getting students to think about their careers years before they might graduate is super satisfying."

Cromey's journey in Optica demonstrates how a society's student chapters can initiate a long-term relationship between their members and the society and how industry professionals can stay connected and mentor others in the community built by the society.

"Maybe there's one kid in that class who sees your presentation and it blows her mind, and she wants to go into physics," says Cromey. "She might not have thought about it before, and that's why you do it."

A community for international students

Chuqiao "Elise" Chen was born and raised in Beijing. She attended Waseda University in Tokyo and graduated with a BS degree in chemistry in 2018. She completed a PhD in molecular engineering at the University of Chicago and is

Tips for mentors

- **Show students and early-career professionals the value of societies.** Nearly all of the early-career volunteers in scientific societies attributed their success to a specific mentor who encouraged them to get involved.
- **Help find financial support for conferences.** Early-career members often need financial assistance for conference travel, lodging, and registration. That could come from research funding or from travel grants that societies offer.
- **Support and engage with local student chapters.** Many of our participants got their start with volunteering through society student chapters or the Society of Physics Students. These are great places for students to start building their career skills and confidence.

now working as a postdoctoral researcher at the University of California, Santa Barbara. She recalls that her graduate adviser sent her to a Society of Rheology (SoR) meeting in her third year, which was one of her first times presenting research at a conference. She vividly remembers the excitement of attending: "I was very nervous, but I saw that people are very kind and patient, and I also had really good conversations with people in the community."

The SoR conference exposed her to the broader field of rheology—the study of the flow and deformation of matter—beyond her own project and provided her with a way to "get to know the people who are behind these research works." Outside of the conference, the society has been a valuable resource for career advice and connections with others in her field. She says the sense of community has made her feel more motivated in her research work. "When I got to know these societies, it helped me pursue my own graduate research and feel I'm not alone. I'm not just one person isolated in my own research."

Chen wanted to contribute to maintaining that community with others, especially to help students stay connected and pursue their career goals. At the conferences, she became curious about how they and other activities at SoR are organized. "It's really nice to learn the machinery that is behind all these activities we engage in. I get to know the people who are running these activities, and one thing I learned is that none of us is paid to do this," she says. "People do it totally out of their love for the community."

Science careers are often winding and weaving pathways across different jobs, fields, and institutions. As careers shift and evolve over time, people need a home base where they can reliably find support from their peers and friends.

CHUQIAO "ELISE" CHEN (center) at an activity she organized—a student trivia night at the 2024 Society of Rheology annual meeting, held in Austin, Texas. Also pictured are Arshiya Bhadu (left) and Aldaly Pineda Hernandez (right). (Photo courtesy of Elise Chen.)

Chen has been giving back by serving as the student representative to the SoR executive committee in 2024 and 2025 and helping organize the Future of Rheology seminar series. Webinars in the series showcase the "very wide variety of research that is being carried out by the student members, postdoctoral researchers, and early-career industrial researchers," she says. Supporting that work is something that she has found to be "a very inspiring thing." Scientists like Chen show how international students find homes in their fields and create community for others.

"It's not just a higher authority," Chen says. "I hope that they recognize that it consists of people who are actively there and who are their peers, their friends."

A place for mentorship and professional development

Martin Lawless earned his PhD in acoustics at the Pennsylvania State University and works as an assistant professor at the Cooper Union in New York City. He joined the Acoustical Society of America (ASA) as an undergraduate student and became more involved with the society in graduate school. His graduate program had an active ASA student chapter, and his adviser, Michelle Vigeant-Haas, encouraged all her students to publish research, join her at conferences, and participate in society activities.

When Lawless talks about his first ASA conference, he says that "it did feel like home right away." The experience made him "feel included in this community," he says, and the feeling of being welcomed inspired him to get involved in the society. Being an ASA member has connected him with "a huge social network" that helps him with his professional development and provides a place where he can talk with others "doing similar work and compare notes."

As a student, Lawless volunteered on the ASA student council. The council is responsible for organizing student orientations at conferences, planning social events, providing travel awards, and getting "students involved and feel-

Opportunities in professional societies

The 10 professional societies that are part of the AIP federation offer a wide range of programs, councils, conferences, workshops, and fellowships that provide avenues to get involved and form connections in the research community. Here are just a few examples:

- **Ambassador programs.** Many societies offer ambassador programs in which members act as representatives of the society to amplify resources and research. Some programs offer special trainings and focus on outreach by individuals to their home institutions, while others provide funding for ambassador-led outreach efforts, such as giving talks and writing articles that offer perspective and advice to students.
- **Committees and councils.** Serving as a council or committee member is a great way to learn about the inner workings of a society and gain experience in leadership and governance. Such groups often administer existing programs, fellowships, and awards and make decisions about what new programs should be developed. They offer a way for members to make their voices heard and shape the future of their research community.
- **Workshops and retreats.** Though conferences are a great way to connect across a discipline, workshops and retreats can provide tailored experiences that focus on specific research areas or career stages. They may be offered in connection with conferences or as stand-alone programs. Meeting in smaller, focused groups provides an ideal setting for building connections with new peers and mentors.
- **Conference sessions and abstract reviews.** Society meetings and conferences offer plenty of volunteer opportunities. Early-career members can serve as session chairs or co-chairs, roles in which they introduce speakers and provide technical support during presentations. Conferences also need volunteers to review abstract submissions for poster sessions, travel grants, and research awards.

ing comfortable in the society," he says. In 2016, he was one of the founders of the Early-Career Acousticians Retreat, which was held again in May 2025. Lawless says the retreat provides "professional development and workshops for those in industry, government, and academia" and encourages forming "collaborations between them."

Now Lawless serves on several committees. He also chairs the member engagement committee, which develops programming to attract new members and retain current members, with a particular focus on maintaining the diversity of ASA in all its aspects. Lawless continues to build communities and networks in ASA, including assisting the society in the launch of a new formal mentoring program in 2025.

Lawless says the goal of ASA's programming is not only getting members and students to engage with conference presentations but also having them "see ASA as their research or technical home."

MARTIN LAWLESS, an assistant professor at the Cooper Union in New York City and chair of the Acoustical Society of America's member engagement committee. (Photo courtesy of Martin Lawless.)

Building careers and communities

Throughout our interviews, we heard time and again that early-career leaders in scientific societies are simultaneously building their careers and their scientific communities. As Burzynski explains, when early-career scientists and engineers get involved in volunteer leadership roles, it also helps their own careers by demonstrating their capabilities as leaders and expanding their professional networks. Burzynski has worked hard to grow the AVS community by organizing regional chapter events in Ohio, and she now oversees the activities of all the society's chapters at the national level.

What does it mean for a society to be a home base for a career? Home is ultimately about belonging. It is about feeling welcome and being a part of something bigger than yourself, with people who care about your science and your community. Across the board, when our interview participants talked about what they were most proud of, it was the ways that they were able to build a sense of connection and help others advance their research and careers.

We hope this article and the upcoming full report inspire more students and early-career scientists and engineers to join a scientific society to experience the connection and sense of belonging that the participants describe.