Reflections from Three Early-Career Acousticians

Sarah M. Young

Address:
Department of Physics and Astronomy
Brigham Young University
N203 ESC
Provo, Utah 84602
USA

Email:
sarahmyoung24@gmail.com

Tyler J. Flynn

Address:
Department of Mechanical Engineering
University of Michigan
1231 Beal Avenue
Ann Arbor, Michigan 48109
USA

Email:
t.jayflynn@gmail.com

Three early career acousticians from three separate professional paths reflect on their budding careers and provide insight for student and future acousticians looking to follow suit.

The change from student life to career life is one of the biggest transitions a student must face, and the Acoustical Society of America (ASA) Student Council is on a quest to provide resources for the student body of the ASA. With this in mind, this article is part of a continuing series of student-directed articles (acousticstoday.org/student-council-acoustical-society-america), centered around the needs and interests of students, including how to navigate the rich and diverse field of acoustics. One of the often underappreciated benefits of acoustics is the number and variety of career opportunities available to the budding acoustician. Despite this grand lot of available careers, there are still many challenges and obstacles that the enterprising student/young professional may encounter while stepping foot on their career path. In an effort to identify and elucidate some such pathways, the Student Council reached out to three early-career acousticians to learn a little bit about their goals and experiences and to share their combined wisdom with others interested in pursuing similar, or even wholly different, acoustic ambitions.

Meet the Interviewees

The interviewees are **Jazz Myers** (JM), who works as a physicist at the Naval Air Warfare Center Aircraft Division (NAWCAD), Patuxent River Naval Air Station in Lexington, MD; **Joelle Suits** (JS), an associate at Cross-Spectrum Acoustics in Salt Lake City, UT; and **Dr. Shima Abadi** (SA), an assistant professor of mechanical engineering at the University of Washington, Bothell. These three interviewees, whose careers span from systems engineer to consultant to academic professor, represent a valuable cross section of the acoustics job market. And although there are certainly many additional acoustical career opportunities available, the responses below provide some valuable insight for realizing the job that, for you, sounds best.

What does your job entail and what type of responsibilities do you hold?

JM: I am a sonar systems engineer. I analyze data from underwater sonar missions to assess system performance and develop new signal processing algorithms, primarily using MATLAB. I compile briefs and regularly give presentations about fleet usage of sonar systems, system performance, and new algorithm development. The algorithms I work on almost all have the objective of reducing clutter and increasing accurate detections. Another aspect of my job is numerically reconstructing the acoustical environment of the subsurface ocean to predict sound propagation and sonar performance.

JS: My company specializes in acoustic consulting services relating to public transportation (e.g., light rail trains, bus routes, commuter rail). We are brought on as subcontractors to do noise and vibration environment impact statements for new public transportation. Although this is the majority of what we do, we also work on smaller projects that involve community noise complaints or things like putting in a new gas station.

My duties entail taking noise and vibration field measurements, analyzing those measurements, assessing projects, and writing reports. We are a small company and we all pitch in where we can. I can have one day where I'm analyzing noise measurements and the next I'm working on a completely different project that uses different regulations and analysis.

SA: As an assistant professor, my job consists of three components: teaching, research, and service. I mostly teach mechanical engineering courses such as fluid mechanics, heat transfer, and ocean acoustics. I also mentor undergraduate and graduate students in my research group and help them conduct research. For service, I chair the Curriculum Committee in which we review courses to make sure they are aligned with our program criteria and are beneficial to students. Also, I am involved in creating a new minor in ocean engineering that focuses on training students for the high-demand marine industry in the Pacific Northwest.

What makes you passionate about the career you chose?

JM: I enjoy briefing results, compiling evidence into a cohesive story and making complicated algorithms easy to understand. I enjoy working with real-world data to improve a system. It is a different approach from basic research where the questions are very open ended. In military research, every project has a clear objective: improve system performance for the servicemembers. It helps me stay focused on my work and know that the tasks and deadlines really benefit someone.

JS: The fact that every day is different. Every project has its own problems to solve, and I am applying what I learned in college on a practical level.

SA: I enjoy working with students and helping them become independent researchers and critical thinkers. Teaching and mentoring students can be very satisfying because you quickly see the impact of your work on their life. I am also very passionate about learning new material and tackling complex problems in science. I am constantly learning, challenging myself, and improving my skills.

How did you go about networking in your field before you got a job and how do you continue to network?

JM: I was able to find this job opportunity through the Brigham Young University (BYU) job fair. The Naval Air Systems Command (NAVAIR, the group I support in the Naval Air Warfare Center Aircraft Division) recruited at BYU in 2014. I was also able to network through an internship between my junior and senior years, reaching out to former BYU grads and applying to MANY jobs online. I continue to receive emails from BYU, high school, and college students in the area.

JS: The best way I found of networking in this field is to go to conferences and participate in the social events there. The National Council of Acoustical Consultants (NCAC) student mixer at the ASA conferences was a great place to network when I was in school and continues to be one of my primary networking activities.

SA: I was/am involved in professional organizations such as the ASA, the American Geophysical Union (AGU), and the Institute of Electrical and Electronics Engineers (IEEE). Going to conferences and talking to other researchers is the best way of networking. Preparing an elevator pitch (a short description of your work) can help you to connect with people and start a conversation.

What was the process like finding and getting hired for a job?

JM: Through career fairs, online applications, and networking, I was able to get four job offers. This really helped me to choose the best job for myself and my family. Getting a job in the US government is a lengthy process, so that route definitely takes some patience and persistence.

JS: I started looking for a job before I finished working at The University of Texas (UT). I knew I wanted to do acoustical consulting in some capacity, so I went to the NCAC job board and started looking at the postings there. I limited the jobs I applied for to places where I wanted to live for at least three years but was open to expanding my search if I could not find one where I was looking. I also sent emails to companies I was interested in to see if they were going to have job openings any time soon.

I was interviewed by several companies before I got an offer from Cross-Spectrum. Some companies only did phone interviews, but some had me come in for an in-person interview. Usually, the interviews focused on my work experience during grad school.

SA: Finding a tenure-track position can be very competitive and time consuming. It may take a couple of years until you find a position that is a good fit for you. My advice is: do not give up. Stay in the field, keep publishing, and establish a strong network. Always talk to people and ask them if they have any open positions at their institute. I learned about my current position through one of my colleagues. Before officially applying for the position, I talked to the chair of the Search Committee to learn more about the position. Then I applied though their website, submitted my research and teaching statements, and asked my letter providers to send recommendation letters. After a few months, I was invited to the campus for an interview that had three main parts: research presentation, teaching presentation, and one-on-one interviews.

Is there any one piece of advice or lesson you wish you would have known when beginning your job search?

JM: Cast a broad net. Be broad in your applications, and you'll hopefully end up with many options to choose from.

JS: Start early. If you know when you are going to need a job, start a few months beforehand and just let them know your time line. Also, make sure you do some research on the company before you send in your resume; then optimize your resume for that particular company and job posting.

SA: I wish I'd known how long it would take to prepare a job application package. Writing a good research and teaching statement and preparing a job talk requires a lot of time. I recommend you start thinking about your research direction and teaching philosophy in advance, even before graduation and applying for the academic jobs.

How was the transition from being a student to having a real job? What was difficult? What was great?

JM: After being a student for 16 years, it was VERY intimidating going into the full-time workforce. I experienced a lot of self-doubt at the beginning, questioning whether I had truly prepared well enough to excel in a career. My employer didn't expect me to know how to do the job; they expected me to know how to learn how to do the job. On-the-job training was my primary focus for the first few months, and I am still (four years employed) learning how to better perform my job. Most graduates I know had the same experience. Hard work and an eagerness to learn will get you far in the early years. All that being said, it was AMAZING to go home in the evenings and weekends with no schoolwork and be able to truly relax. After a demanding major taking all of that free time, I finally found some good hobbies once I graduated.

JS: The transition was pretty easy. The hardest thing for me to get used to was that I usually have a plan for what I'm working on that day, but it often goes awry.

The best advice I have for someone going into the workforce is know what you know and what you do not know. You may know how to analyze data, but you don't know how your new field looks at it. Ask questions often.

SA: The most challenging part for me was doing multiple tasks at the same time. As a grad student, I only focused on my research and writing my thesis. As a professor, I need to multitask. Teaching, research, mentoring students, writing proposals, and serving on multiple committees are only a few of my responsibilities. However, it is very rewarding to work with students and see how they succeed in their education and their future career.

Has the ASA or any other professional society been beneficial for you in your early career? If so, how?

JS: The ASA has been beneficial for my early career in that it helped me network and know the different kinds of careers that were open to me.

SA: As a young researcher, I need to establish my own research. The ASA and other professional societies provided opportunities for me to meet people, learn about their work, and establish new collaborations. A lot of my research ideas were initiated during the ASA meetings.

What's something you're really looking forward to in your career in the short and/or long term?

JM: Right now I am pursuing my master's degree in acoustics, funded by the Navy, through Pennsylvania State University. I am enjoying the classes and looking forward to learning more about acoustics.

JS: I'm really looking forward to learning more about my industry and helping it move forward as technology advances. I am able to apply what I know about acoustics and technology to innovations in this industry.

SA: My goal is to have a positive impact on the communities that I'm involved with. I have learned a lot from these communities; now it's time to give back.