

Insights on Navigating the Two-Body Problem

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Of all the tricky problems they teach you to solve in college, an exact solution to the “two-body” problem faced by dual-career couples is not one of them. Although the physics version of this problem often has a deterministic solution, the solution sought by life partners where one or both are pursuing an academic or STEM career is inevitably unique, may require flexibility and creativity, and often must be found iteratively. Because the uncertainties faced by student and early-career couples can seem daunting, this installment of the Acoustical Society of America (ASA) Women in Acoustics Committee’s *Sound Perspectives* column describes how some ASA members have successfully navigated this problem. In addition, this article highlights the professional careers of the 2017 Women in Acoustics Named Luncheon Honorees, Barbara Shinn-Cunningham (Spring 2017) and Juliette Ioup (Fall 2017), and presents their insights on the two-body problem. Additional familial degrees of freedom (e.g., children) will be discussed in a future article.

Honored Women

Spring 2017 Honoree Barbara Shinn-Cunningham



Barb Shinn-Cunningham

Barbara (Barb) Shinn-Cunningham’s (left) research connects auditory neuroscience with perception and computational modeling. Barb earned a ScB in electrical engineering from Brown University, Providence, Rhode Island, and a PhD in electrical engineering and computer science from the Massachusetts Institute of Technology, Cambridge, Massachusetts. She joined the biomedical engineering faculty at Boston University, Massachusetts, in 1997 where she is now a professor.

Throughout her career, Barb has supported the mission of the ASA and has served in a variety of leadership capacities. She is an ASA Fellow, has served on at least 12 different ASA committees, and was vice president (2014-2015).

Barb is known for her willingness to give to others. Many of her PhD students are now professors or in industry. She is an exceptional mentor and received the ASA Student Council Mentor Award in 2013. She exudes warmth and friendliness and provides advice and support for other women who also want to pursue a career in science without having to sacrifice their personal goals.

Notably, Barb has achieved her prominence in the field while raising two sons, fencing the saber competitively, and playing the English horn and oboe in a local orchestra. According to Barb, these activities would not have been possible without the support of her husband, who allowed her to balance both personal and professional endeavors. Barb’s comments on this aspect of her life are as follows:

“My approach to balancing work and personal life has always been about being mindful of my choices. By this, I mean that I thought about what made sense for me and my family jointly rather than putting one aspect of my life first all the

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time. I knew I had to make compromises, but I tried to be kind to myself and not feel guilty about what I was *not* doing. Sometimes, I decided that staying late at work one night and missing a family dinner in order to finish a poster for a conference was worth it. Other times, I decided that my son's Little League game was important enough that I would just put off getting my paper out for another few days. And once I made a choice, I tried not to dwell on what I was giving up; at the Little League game, I enjoyed myself 100% and didn't let myself feel stressed about work. I was present in the moment.

"I have also been incredibly lucky: I was able to *make* choices because my husband, whom I met while still an undergraduate, has always been supportive. We split duties at home in ways that made sense for us (he cooks, I do the laundry; he does the monthly bills, but I handle the taxes and the college investment funds), but we both try to be flexible and fill in when there was a pressing deadline or a business trip. This approach, of being understanding and willing to bend, has let us both raise our two sons while pursuing demanding, rewarding careers."

Fall 2017 Honoree Juliette Ioup



Juliette Ioup

Juliette Ioup (left) is a professor of physics, geophysics, and electrical engineering at the University of New Orleans (UNO), Louisiana. Her research interests span many areas of computational physics including geophysical, acoustic, and aerospace signal analysis and processing; digital filtering and neural networks; and underwater acoustics modeling and simulation.

Juliette completed her bachelor's and master's degrees in physics from the University of Florida, Gainesville, and her PhD in physics from the University of Connecticut, Storrs.

Since 2009, Juliette has served as the Seraphia D. Leyda University Teaching Fellow at UNO that is given to outstanding faculty members for excellence in teaching. Juliette is a dedicated, knowledgeable, and helpful advisor. Juliette is also active in the ASA and was named a Fellow in 1993. In 2013, she received the Rossing Prize in Acoustics Education for her significant contributions.

Juliette shared a 51-year marriage with ASA Fellow George Ioup, who passed away on January 20, 2016. Through many years of research, course development, and championing of the program, Juliette and George helped shape the physics

program at UNO. They mentored many students whom they considered their children. Juliette shared their two-body experiences in an interview, summarized here.

"While George started teaching and doing research at UNO, I taught entry-level math classes and finished my dissertation. When I finished my PhD, I applied to the numerous universities in New Orleans. I was hired for a one-year visiting faculty position at Xavier University, which turned into a tenure-track position. During this time, I was still associated with UNO, teaching evening graduate-level signal-processing courses that George developed. After nine years at Xavier, I took a job at Texaco doing geophysical signal processing on seismic data. After three years, I wanted to be back in academia. I was hired at UNO, officially as full-time, tenure-track faculty. This was ideal.

"George and I always did research together; we had complementary skills. I really miss his part now. I do very well at running the computer and doing all the detailed work. On the other hand, he was much better at administrative skills. Together we accomplished much more that we could have done separately. I am currently trying to continue the teaching, research, and mentoring and promote the department that became successful and well-known in large part because of George. It is extremely hard without him, but I cannot give up on what he started and what we built together."

Barb's and Juliette's experiences highlight some of the challenges faced by couples pursuing two careers. We asked some other ASA members to share their experiences as well, and the full responses are available on the ASA Women in Acoustics webpage (womeninacoustics.org). A theme was drawn from each story on how to deal with two body-challenges, and an excerpt from each story that portrays the theme is presented here.

Be Willing to Compromise

Marcia Isakson (immediate ASA past president) finished her PhD in atomic and molecular physics before switching to an underwater acoustics research position as part of her two-body solution.

"My husband and I met at West Point. I had plans to go to graduate school, so he picked Fort Hood Army Base for its proximity to the good physics graduate program at the University of Texas at Austin (UT). My husband left the army and found Austin to be a great place for electrical engineers. Because he was established in Austin, I only looked for jobs there after completing my PhD. I ended up staying at Applied Research Laboratories (ARL) at UT (ARL:UT).

“Through the years, there have been a lot of compromises to make the two-body equation work. I have been encouraged to apply for great positions in DC, Massachusetts, and even Italy. However, accepting a job in any of these locations would have disrupted my husband’s position. Therefore, we have chosen to stay and enjoy Austin.”

Be Patient

Tessa Bent (ASA Strategic Task Force 2 Chair) and her husband needed patience as they navigated the uncertainties associated with securing suitable jobs. Tessa and her husband met when she was working as a postdoctoral fellow at Indiana University (IU), Bloomington.

“One of the most difficult aspects of our career situations was that I was looking for faculty positions. I had known for years that I would need to go wherever the job took me and that I may not have a lot of choice about where that would be if I wanted a tenure-track position. For my husband, this very “up-in-the-air” existence was a challenge; as a computer programmer, he could essentially live anywhere he liked. The stars eventually did align, and one month before our wedding, I was offered a faculty position in the Department of Speech and Hearing Sciences at IU. We were happy living in Bloomington and thus the decision to take the position was straightforward. Again, we prioritized my career over the next few years. My husband consulted part time, and after three years, took a full-time position within the Information Technology Systems Department in Bloomington. Although it took many years, we are quite happy to both have full-time jobs that we find fulfilling.”

Be Realistic

When Megan Ballard (ASA Underwater Acoustics Technical Committee [TC] Chair) was two years into a PhD at Pennsylvania State University, University Park, her husband took a job at ARL:UT, selected such that Megan would have opportunities to participate in the student community at UT and collaborate with researchers at ARL while finishing her PhD.

“The next step in my career was to obtain a postdoc position. Together, my husband and I decided it made the most sense for me to do my postdoc at ARL:UT because he was already working there. Because the postdoc would only be a temporary position for me, it did not make sense for us to move to a new city where my husband (who was becoming an established researcher at ARL:UT) would also have to find a temporary job. Near the end of my postdoc, I interviewed for several faculty and research positions. I received one job

offer from a prestigious research university, but, ultimately, I did not take the job. The reasons were partially because my husband was reluctant to move to a new city without a job lined up for himself and also because I was pregnant with our first child and not confident about starting a demanding job with a new baby in an unfamiliar city without any support system. After much consideration and prayer, we decided to stay at ARL:UT, and I was hired as a research associate. ARL:UT is a great place for both of us to work, and we have both developed successful careers.”

Be Creative

Andrew Morrison (ASA Musical Acoustics TC Chair) and his wife experienced many years of commuting; she commuted a long distance while he was in graduate school, and then they worked and lived two hours apart and saw each other on the weekends.

“During this time, I applied for and was offered my ‘dream job’ out of state. At the same time, my wife was earning another promotion and raise, and, ultimately, we decided that her career was going to determine where we lived. I turned down the dream job and worked a string of visiting faculty appointments for six years before I was offered a tenure-track position at a community college in the area.

“I certainly did not anticipate teaching at a two-year college, and building a research program there has been more challenging than it would have been at a university, but my college has always tried to give me whatever I have asked for with an educational purpose. So, although it doesn’t look like what I thought it would, I am ultimately doing what I set out to do originally: teach and use research as an extension of teaching.”

Be Open-Minded

Veerle Keppens (ASA Physical Acoustics TC Chair) met her husband at Oak Ridge National Laboratory, Oak Ridge, Tennessee, when she was a visiting postdoc from Belgium. They were engaged when her fellowship required her to return to Belgium for two years. After a few months, she applied for a physics faculty position at the University of Mississippi (UM), Oxford.

“I’d only been a couple months out of the country, but I decided to apply anyway to see what would happen. They ended up offering me the job and found an exception to the fellowship rule. I took the faculty position at UM, which was only 500 miles, instead of 5,000 miles, away from my fiancé. Measurable progress.”

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For 2½ years, they met in the middle every other weekend until the birth of their first son, which “made things a whole lot more complicated.”

“We explored all the options. The whole situation was complicated because we both have PhDs in physics. There was a job in the Material Science and Engineering Department at the University of Tennessee, Knoxville; my first reaction was, ‘But I’m not an engineer.’ I didn’t know what would be expected, but I looked at the course descriptions and thought, ‘I can teach a good fraction of those.’ I started over as an assistant professor, even though I was close to receiving tenure at UM. I thought it was a small price to pay to have our family together.”

Be Flexible

Andy Piacsek (ASA Strategic Task Force 1 Chair) met his wife, Lisa, while in graduate school. She accepted a tenure-track position at a Central Washington University (CWU), Ellensburg, before they were married. Shortly after their wedding, they lived two states apart while Andy completed a postdoctoral position at Lawrence Livermore National Laboratory.

“Looking for employment at the university where Lisa was on a tenure track was the easiest path to follow. Although there were no tenure-track positions available in my field (physics) when I arrived, CWU did offer many other opportunities for academic and scholarly engagement. I also explored opportunities elsewhere, but I eventually decided make the best of my situation at CWU.

“Because Lisa was very happy (and successful) with her position, and we both liked the academic community at CWU, I was willing to accept a non-tenure-track position. If I had accepted a job out of state, we would have had to make some difficult choices. But I quickly realized that teaching and mentoring undergraduates was a career path that I was well suited for, and I recognized that even without a tenure-track position, the grass was probably greener at CWU for both of us than anywhere else.”

After 11 years of adjunct status, Andy received a tenure-track position in the Physics Department. Today, he has tenure and is the department chair, and Lisa is a professor in the Department of Geological Sciences.

Summary

These experiences from ASA members illustrate how couples can be flexible, patient, realistic, creative, and open-minded in finding ways for both partners to have meaningful careers. Although no couple’s journey will be the same, communication, compromise, and willing sacrifices tend to be at the heart of two-body solutions.

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