

## **Ask an Acoustician: William A. Yost**

**William A. Yost**

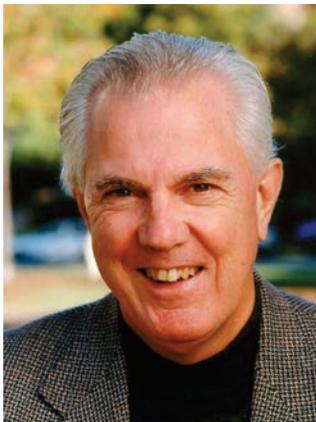
*Address:*  
Hearing Science  
Arizona State University  
Tempe, Arizona 85287  
USA

*Email:*  
william.yost@asu.edu

**Micheal L. Dent**

*Address:*  
Department of Psychology  
University at Buffalo  
State University of New York  
B76 Park Hall  
Buffalo, New York 14260  
USA

*Email:*  
mdent@buffalo.edu



### **Meet William A. Yost**

For the third *Ask an Acoustician* column, one of the leaders in our field, William A. Yost, was interviewed. Bill doesn't need too much of an introduction; he served as president of the Acoustical Society of America (ASA), and it is likely that many of our readers have his *Fundamentals of Hearing* textbook on their bookshelf right now. Bill received the Gold Medal at the ASA meeting in Minneapolis for his contributions to the field of acoustics. Let Bill tell you the rest.

### **A Conversation with William Yost, In His Words**

#### ***Tell us about your work.***

My career has had three interrelated dimensions: education, service, and research/discovery. Education: While I immensely enjoy teaching, my most obvious contribution to education is probably the textbook *Fundamentals of Hearing: An Introduction* (Yost, 2007; first published in 1977, now in its 5th edition, with over 290,000 copies sold worldwide). My 15 PhD students and 4 postdoctoral fellows are important to my dedication to education. Service: My service covers leadership positions such as ASA president, president of the Association for Research in Otolaryngology (ARO), member of the National Advisory Council to the National Institute of Deafness and Other Communication Disorders (NIDCD) of the National Institutes of Health (NIH), and national associate of the National Research Council (NRC). Research/Discovery: I study auditory perception where I use behavioral techniques to understand peripheral and neural processing that underlie auditory perception. My research is integrated around sound source perception (e.g., Yost et al., 2007). My work on pitch perception (e.g., Yost, 2009), modulation processing (e.g., Yost et al., 1989), and spatial hearing (e.g., Yost and Gourevitch, 1987) are all components that allow for sound source perception. My recent research is focused on sound source localization when sound sources and listeners move, which reveals that sound source localization is not just an auditory process but is a multisystem neural interaction (e.g., Yost et al., 2015).

#### ***Describe your career path (how you got your start, what made you choose your field).***

I had a supportive mother (a journalist) and father (a PhD physicist who was briefly an ASA member) who encouraged me to be a lifelong learner. My youth was dominated by sports. I attended The Colorado College (CC), Colorado Springs, where I majored in psychology with a minor in math. I loved my psychology courses and the faculty at CC, two of whom, Gilbert Johns and Don Shearn, have provided lifelong mentoring and friendship. I went on to Indiana University, Bloomington, for a PhD in experimental psychology in the math psychology program (applying

mathematical principles to behavioral phenomena). I was fascinated with the theory of signal detection (TSD) that was the topic of interest for two of my mentors, Jim Egan and, especially, Don Robinson. The TSD is a mathematical/statistical application for understanding decision making. Hearing was a good way to test many aspects of the TSD, so my work quickly gravitated toward hearing. I received a National Science Foundation (NSF) postdoctoral fellowship to work with Dave Green at the University of California, San Diego (UCSD), La Jolla. Dave is an ASA icon and a developer of the TSD. He was/is a fantastic mentor. I then spent seven years on the faculty of the Speech and Hearing Sciences and the Psychology Departments at the University of Florida, Gainesville, where Don Teas took me “under his wing” and provided strong mentoring in being an academic. I then took over from Terry Dolan (another mentor and life-long friend) the directorship of a small endowed research institute, the Parmly Hearing Institute at Loyola University Chicago. With the help of several colleagues, especially Dick Fay, Parmly grew into a fairly large and well-respected hearing research enterprise. While at Parmly, I took a two-year leave to direct two neuroscience programs at the NSF. In the 1990s, Loyola ran into serious challenges, and I was recruited to be associate vice president for research and dean of the Graduate School to help Loyola with what was a financial disaster. By 2005, Loyola had financially recovered and I returned to Parmly. However, in the reorganization of Loyola, Parmly was not going to receive the support it once did. So in 2007 I decided not to retire and accepted the opportunity to come to Arizona State University (ASU) and chair the Speech and Hearing Science Department, which I did until 2014 when I migrated to my current position as research professor. So it is people who got me interested in hearing and kept me informed as to how to be a lifelong learner, and they are why I enjoy what I have been doing.

### ***What is a typical day for you?***

“Typical days” have varied greatly over my career. Because the question implies what a typical day is for me now, I will say that, in general, it is as stress free as it has ever been, with the exception of my postdoctoral year. As a nontenured research professor (having given up tenure three years ago), my main responsibility is to oversee research funded by my NIH grant and industrial contracts. I am fortunate to be able to afford a wonderful postdoctoral fellow with whom to work. Although I truly miss classroom teaching, I do not miss some of the stress of dealing with students and espe-

cially those stresses related to the university bureaucracy. Not having to attend university-related meetings has also reduced the stress. Although I enjoy my current situation, I occasionally miss the opportunities that teaching and working with others afforded me in the past. What I find worrisome is the amount of time I have to spend on bureaucratic work for compliance with university mandates for submitting a paper for publication or a grant for funding. I believe I should be doing research (or mentoring) and not working for something like a journal. The same problem exists for many other situations, and these situations are made even worse by the horrible websites used for these purposes. I cannot see how this can continue without it having dire consequences for research, teaching, and service.

### ***How do you feel when experiments/projects do not work out the way you expected them to?***

Experiments/projects that do not turn out as I had hoped lead to two very different outcomes in my experience. On the one hand, failed experiments often lead to great discoveries. That is, you almost always learn something when an experiment fails and you try to understand why. Seeking this understanding can lead to insights you would not have had if the experiment succeeded as you had expected. In fact, a successful experiment may actually not lead to an advancement in that if you obtained the results that you expected, what have you learned that is new? On the other hand, it is more than humbling when you are sure that something will succeed and it does not. At times it is easy to lose your spirit for what you are doing when such failures occur. The successful people I know try to emulate find ways to keep their spirits high, to learn from the failure, and to find new paths.

### ***Do you feel like you have solved the work-life balance problem? Was it always this way?***

This is a constant challenge even today, with families that are fully on their own and a career that is winding down. I cannot imagine being where I am today without the support of my wife, who embraced my zeal for what I was doing and oversaw many of our important family responsibilities. I believe (I hope) I helped in this regard and I always wanted to, but for a great deal of my career, my time in the lab, at meetings, or in the classroom left little time for “life balances.” The fact that I have a great family and great friends and that I still enjoy what I do must mean that my wife and I were successful, to some extent, in balancing work (both hers and mine) and life.

### ***What makes you a good acoustician?***

As much as I like studying hearing and, therefore, aspects of acoustics, I am not sure that there is anything special about studying acoustics in particular that makes one good at it. I think that being good at doing anything is based on (1) the people one interacts with, (2) really liking what one is doing, and (3) actually enjoying working hard. Being able to interact with great people and to enjoy what you are doing is part luck, but it is also a skill one can develop if one realizes that these are important ingredients in being good at something.

### ***How do you handle rejection?***

Not as well as I would like. I try to convince myself that I should treat the rejection and its consequential disappointment as a learning experience, so I am less likely to be rejected in the future. I am not sure how well I do this.

### ***What are you proudest of in your career?***

Rightly or wrongly, I am proud that I have had what I think is a positive influence on some of my friends and colleagues, my students, my discipline, and, in some cases, society. I realized early in my career (based on great mentors) that having such influences is important and that to do so requires an ability to work with others. Working well with others means that you learn from them and that their positive influences on you dwarf your influences on them.

I am very glad that early successful interactions outside of the strict confines of my “job” were enjoyable. I enjoyed being placed in leadership roles in which I was asked to help others succeed. These leadership roles led to opportunities to interact with external organizations to work on issues relevant to societal needs (e.g., open access for journal publication or grant-funding decisions), sometimes on subjects that were somewhat removed from my expertise (e.g., Citro et al., 2003; a published NRC report on the protection of human subjects in the behavioral sciences).

### ***What is the biggest mistake you’ve ever made?***

I am very fortunate in the choices I have made. I have few regrets both in terms of my career and in my personal choices outside of my career, mostly because I have a great family, friends, colleagues, and mentors. I am not implying that I have not made mistakes, as I have made many. However, none that I can think of were major, life-altering mistakes. I do wish I had taken more math and biology as a student and spent more time over the years learning more math and biology.

### ***What advice do you have for budding acousticians?***

Do not be afraid to try new things; be a lifelong learner. Cultivate your friends and colleagues; learn from them. Find good mentors; listen to them. Work hard; enjoy what you are doing.

### ***Have you ever experienced imposter syndrome?***

#### ***How did you deal with that if so?***

I had not seen the term “imposter syndrome” before. Wikipedia says it is “a fear of being found to be a fraud.” I am not sure I ever had a strong “fear of being found to be a fraud.” But I have certainly worried at times that I may have overstated a finding or opinion. There is no doubt that my family, friends, colleagues, and, especially, mentors usually steered me toward a better path when such events occurred. These wonderful people have always demanded that I seek humility in my life, which I have tried to do.

### ***What do you want to accomplish within the next 10 years or before retirement?***

First and foremost at my age, I hope to stay healthy and mentally alert into my 80s and beyond. I want to continue to experience my family grow and prosper. I want to cultivate my friendships. I wouldn’t mind if I can come into a lab every once and a while and work with young energetic colleagues to contribute to their scholarly growth and help in discoveries of one type or another. However, if you truly want to know my real desire, it is to continually break 80 in golf.

## **References**

---

- Citro, C. F., Ilgen, D. R., and Marrett, C. B. (Eds.). (2003). *Protecting Participants and Facilitating Social and Behavioral Sciences Research*. National Academies Press, Washington, DC.
- Yost, W. A. (2007). *Fundamentals of Hearing: An Introduction*, 5th ed. Brill Press, Leiden, The Netherlands.
- Yost, W. A. (2009). Pitch perception. *Attention, Perception and Psychophysics* 71, 1701-1715.
- Yost, W. A., and Gourevitch, G. (Eds.). (1987). *Directional Hearing*. Springer-Verlag, New York.
- Yost, W. A., Popper, A. N., and Fay, R. R. (Eds.). (2008). *Auditory Perception of Sound Sources*. Springer US, New York.
- Yost, W. A., Sheft, S., and Opie, J. (1989). Modulation detection interference: Effect of modulation frequency. *The Journal of the Acoustical Society of America* 86, 2138-2148.
- Yost, W. A., Zhong, X., and Najam, A. (2015). Judging sound rotation when listeners and sound rotate: Sound source localization is a multisensory process. *The Journal of the Acoustical Society of America* 138, 3293-3308.