



Career of the Month

September 2010, Based on Interviews With Professionals Using Science in the Workplace

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Audiologist

Hearing is an important sense that many of us take for granted. Unless we are affected by hearing loss, we often do not think twice about listening to our favorite tunes or a neighbor's conversation. Many things—from a viral infection to turning an MP3 player up too high—can contribute to hearing loss. Audiologist Brian Fligor works with hearing-impaired children and musicians to determine possible causes and treatments. His work blends together his passions for music, healthcare, science, and math.

Job overview.

Audiologists provide hearing and balance care for people of all ages, from newborns to the elderly. Pediatric audiologists oversee screening programs to check for hearing loss in newborns; they also provide follow-up care for those who do not pass the screening test. Audiologists who work with adults diagnose hearing loss and balance disorders and provide audiological treatment, such as prescribing hearing aids, cleaning ear canals, and fitting for cochlear implants. We work in many different settings, including private practices, hospitals, manufacturing, military, ear-nose-throat clinics, universities, and public health clinics.

I am both the director of diagnostic audiology in the department of Otolaryngology and Communication Enhancement at Children's Hospital Boston and an instructor of otology

and laryngology at Harvard Medical School. Most of my time is split between helping children with permanent hearing loss and musicians who have or are at risk for developing hearing loss and *tinnitus*, a ringing or swishing noise that seems to originate in the ear or head.

My remaining hours are spent teaching courses and doing research to figure out what factors cause hearing loss, such as genetic disorders, structural damage, age, and exposure to loud noise. Some of my more well-known research involves noise-induced hearing loss from the use of portable media players with headphones.

Career inspiration.

Looking back, I realize that a series of experiences led me to my current niche. My dad has noise-induced hearing loss from serving in the navy and then working in a noisy job after he was discharged. Because of this, growing up I wanted to be a physician and was accepted into an accelerated medical school program right out of high school. However, I chose to attend a four-year college instead, where I realized that I did not want to be a medical doctor after all.

As an undergraduate majoring in biomedical engineering, I researched how we use our ears to ignore echoes that would otherwise make it hard to hear. Although I was not a fan of that type of basic research, the clinical applications—working with patients to find causes and solutions for hearing loss—were interesting.

I have also played guitar in a lot of rock bands; in college, my band's lead singer had music-induced hearing



Brian Fligor uses an electronic medical record at Children's Hospital Boston.

loss. So the field of audiology was a perfect union of my science and math background and my interests in music and healthcare.

Helping people hear.

I remember the first time I diagnosed permanent hearing loss in a 1-month-old baby who did not pass his newborn hearing screening. The family was not prepared—who would be? It was a powerful and humbling experience to help those parents manage care for their baby as they went through stages of grief, acceptance, and empowerment. The child, now 8 years old, is doing incredibly well. From fitting him with hearing aids as a baby to working with his elementary school teachers and speech-language pathologists, it is so gratifying to see the positive impact I have had on his life.

On the other end of the spectrum, one of the coolest things I ever did was an *emergency cerumenectomy*, or

earwax removal. A famous rock star had a show to do and could not hear through his in-ear monitors. I met him on his tour bus at the concert venue. It turned out that his in-ear monitors had pushed a lot of earwax deep into his ear canals, and the combination of earwax and in-ear monitors acted like earplugs. I removed the earwax, and he had a great show!

Advice for students.

In this career, we must understand how communication works—both the hearing and speaking side—so a lot of audiologists have undergraduate degrees in speech and hearing sciences. We also need a background in math. To hear, a person must per-

ceive signals, which can be modeled with mathematical equations; using information from these models, we develop hearing aids and cochlear implants to manipulate incoming sound signals. In addition, knowledge of biology allows us to understand the anatomy and physiology of the ear.

There are several websites students can visit to learn more about this field. How's Your Hearing and Turn It to the Left are helpful websites managed by the American Academy of Audiology (AAA); the "Education and Research" section of AAA's website is also full of good information (see "On the web").

Audiology has fulfilled me in ways I never thought possible. I make a good living and get to do cool things almost every day. More often than not, I do not feel like what I do is work; I am sometimes surprised that I get paid to explore my passions for science, math, healthcare, and music. I feel challenged but successful.

In the coming years, we are likely to experience a serious shortage of audiologists in the United States. This is due in part to the baby boomer generation, who, as they age, will be prone to medical conditions that cause hearing problems. Now is the perfect time to investigate this incredibly rewarding career.

BONUS POINTS

Fligor's education:

BS, biomedical engineering; ScD, audiology

On the web:

American Academy of Audiology (www.audiology.org); How's Your Hearing (www.howsyourhearing.org); Turn It to the Left (www.turnittotheleft.org)

Related careers:

ear-nose-throat doctor, speech-language pathologist, speech-language-hearing scientist, sign-language instructor, hearing therapist, audiology assistant, acoustician, biomedical engineer, audio engineer

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