

**Emerging Research Grants (ERG)**

As one of the only funding sources available to early-stage researchers, HHF's ERG program is critical. Without our support, these scientists would not have the needed resources for their innovative approaches toward understanding, preventing, and treating hearing and balance disorders.

# Meet the Researcher



**Julia Campbell, Au.D., Ph.D.**

*University of Texas at Austin*

Campbell received an Au.D. from the University of Colorado at Boulder, where she later received a triple Ph.D. in speech, language, and hearing sciences; behavioral neuroscience; and cognitive neuroscience while studying cortical plasticity in hearing loss. She is an assistant professor at the University of Texas at Austin in the department of communication sciences and disorders. Campbell's 2016 Emerging Research Grant is generously funded by the Les Paul Foundation.

## In Her Words

**I'VE ALWAYS BEEN FASCINATED** by tinnitus and how it largely remains a mystery. For instance, hearing loss and tinnitus are strongly related, but not everyone who acquires a clinical degree of hearing loss will develop tinnitus, and vice versa. We also have no way to objectively measure or diagnosis tinnitus, depending instead on a patient's report. Many physiological changes have been shown to take place in tinnitus patients, including at the inner ear, brainstem, and cortical levels of the central nervous system (CNS). But ultimately it is the individual's conscious perception of the phantom sound that impacts their daily life.

**A RECENT HYPOTHESIS** holds that tinnitus perception may arise from faulty "gating mechanisms" in the brain. In other words, the brains of some individuals may be unable to filter out or ignore irrelevant auditory signals generated by the CNS. Though it has been documented for many years in the field of neuropsychology, surprisingly, gating function has not yet been examined in tinnitus. If sensory gating differs in individuals with tinnitus, it may be possible to develop an objective clinical measure for this disorder and eventually inform treatment options.

**WHEN I WAS A CHILD** I had an anatomy book that I spent hours looking through, always curious about how systems function. After working as a research assistant in various labs throughout high school and college, I realized that the brain is the ultimate system, and that improved understanding of its function can positively impact people's lives.

**I EXPERIENCED TINNITUS** in my left ear for three weeks as a graduate student. We were testing one another to pilot

an experiment, and the sound was much too loud! My father had a repeat cholesteatoma (cyst), and a viral infection of the vestibular nerve, so he has a middle ear prosthetic as an ossicle replacement. I provided insights into the science while he shared the personal aspect of what patients go through.

**SPEAKING WITH INDIVIDUALS** suffering from tinnitus and/or hearing loss, as well as those with various neurological disorders, reminds one of the importance of research. It's not about the grants or the papers. It's about learning how to help people and improve their quality of life through the right kinds of scientific questions, leading to clinical breakthroughs.



Julia Campbell, Au.D., Ph.D., received the 2016 Les Paul Foundation Award for Tinnitus Research. We thank the Les Paul Foundation for its support of innovative research that will increase our understanding of the mechanisms, causes, diagnosis, and treatment of tinnitus.

**We need your help** in funding the exciting work of hearing and balance scientists. Please consider donating today to Hearing Health Foundation to support groundbreaking research. Visit [hhf.org/name-a-grant](http://hhf.org/name-a-grant).