Dr. Julie Arenberg appointed Herbert Silverstein Chair in Otology/Neurotology

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Julie G. Arenberg, PhD, CCC-A, Associate Professor of Otolaryngology–Head and Neck Surgery (OHNS) at Harvard Medical School, has been named the first incumbent of the Herbert Silverstein Chair in Otology/Neurotology at Mass Eye and Ear.

Herbert Silverstein, MD, FACS, graduated from the Harvard Medical School/Mass Eye and Ear Otolaryngology Residency Program in 1966, and since has been a pioneer in the field of otology/neurotology.

He is the President and Founder of the internationally acclaimed Silverstein Institute and the Ear Research Foundation in Sarasota, FL. Throughout his career, he has authored hundreds of publications and trained more than 50 fellows in otology and neurotology.

Some of Dr. Silverstein's clinical accomplishments include developing the vestibular neurectomy to relieve vertigo and preserve hearing in patients with Meniere’s disease; developing the Laser STAMP (Stapedotomy Minus Prosthesis) for otosclerosis, including the Silverstein MicroWick to self-deliver drugs to the inner ear for treatment of Meniere’s disease, tinnitus and sudden deafness; and developing the round and oval window reinforcement to relieve the symptoms of hyperacusis and noise intolerance.

In honor of Dr. Silverstein's trailblazing efforts in the field, it was deemed that the chairholder must echo the same level of commitment and excellence to otology/neurotology.

Dr. Arenberg serves as the Director of Audiology Research and Education at Mass Eye and Ear. Prior to joining Mass Eye and Ear in 2019, Dr. Arenberg served as Director of Audiology and Professor at the University of Washington, Department of Speech and Hearing Sciences. Her research efforts are focused on improving the quality of life for people with severe hearing loss, many of whom are treated with cochlear implants. Throughout Dr. Arenberg's career, she has used basic auditory neuroscience approaches to further understand the auditory system across the lifespan for individuals with normal hearing and those with cochlear implants. She has also developed new methods for optimizing hearing restoration with cochlear implants.

Dr. Arenberg was the first person to measure perceptual response in humans while employing cochlear implant focusing strategies, which were developed based on her previous animal model research that best mimic neural responses to natural sounds. She found that focused stimulation required higher current levels but revealed greater perceptual response variability and possible insight into the integrity of the auditory nerve cells. This research led to new cochlear implant programming methods that improve speech understanding, particularly for patients who struggle to understand speech with their implant.

To address challenges in translating focused stimulation into clinical practice, Dr. Arenberg and team developed a fast procedure for measuring perceptual thresholds and channel interactions on every electrode along the implant array, a method and software that has been used internationally. She also developed a novel dynamic focusing strategy that reduces power consumption and improves speech understanding in difficult listening environments.

During her time at Mass Eye and Ear, Dr. Arenberg's R01 grant from the National Institutes of Health (NIH) was renewed for her to study the perception and physiological responses of infants and children with and without cochlear implants to compare to adults with cochlear implants. In 2023, she additionally obtained two multi-PI R01 grants from the NIH.

Alongside her life-changing research efforts, Dr. Arenberg is a devoted educator in the department. Dr. Arenberg has mentored several post-doctoral fellows, provided insightful audiology-based lectures to both residents and doctoral students in Harvard’s Speech and Hearing, Biosciences and Technology program, presented at otology grand rounds and spoke at multiple audiology continuing medical education lectures.

A particularly notable academic contribution includes Dr. Arenberg's instrumental role in the development of the new Doctor of Audiology graduate program in a partnership between

Mass Eye and Ear and the MGH Institute of Health Professions.

"Dr. Arenberg has pioneered novel methods and devices tailored to meet the specific needs of individual patients, significantly improving the quality of life for people with hearing loss who do not respond to traditional cochlear implants. She is a trailblazing researcher and a well-respected leader in the field. It is with great honor that we announce her as the Herbert Silverstein Chair in Otology/Neurotology," said **Mark A. Varvares, MD, FACS,** The William W. Montgomery and John W. Merriam Professor and Chair of the Department of OHNS at Harvard Medical School and Chair of the Department of OHNS at Mass Eye and Ear.