Trends In Amplification

From the Editor

Over the last several decades, our understanding of the auditory system in both listeners with and without hearing loss has improved dramatically. Although a lot of research still needs to be undertaken to complete the picture, we have a better understanding than ever before of the limitations that the presence of hearing loss imposes on the auditory system. In addition to increased knowledge related to hearing loss, we have seen great advancements in signal processing technology.

The question at the intersection of these two bodies of knowledge is: “How far have we come”? That is, what modern techniques are used in hearing aids to combat deficits related to hearing loss, and how well do these techniques work? This is by no means a small question and work continues on several fronts to offset hearing deficits, and in some cases, to offset new problems that have been generated by the introduction of, or interaction between, new technologies that have been introduced.

We are fortunate that King Chung, PhD, has agreed to tackle the daunting task of examining how far we have come over the next two issues of Trends in Amplification. Dr Chung is an assistant professor in the Department of Hearing And Speech Sciences at Purdue University. She received her PhD in audiology from Northwestern University in 2001. Prior to joining Purdue, she was the director of the research division for two years at Lexington School/Center for the Deaf in Queens, New York. Dr Chung’s current research interests are in the application of hearing aid technologies to enhance cochlear implant performance, hearing conservation, and the evaluation of current hearing aid technologies.

In this issue, Dr Chung discusses hearing aid technologies aimed at offsetting problems introduced by noise in the listening environment. The problem of “listening in noise” is one of the most common complaints of those with hearing loss and is especially difficult to solve because “noise” is difficult to define using simple acoustic terms. Specifically, noise can be defined as any unwanted signal. Unfortunately, hearing aids have not progressed so far as to know which signals are wanted and which are unwanted at a particular point in time for an individual listener. An example that is commonly given to accentuate this dilemma is that sometimes speech is the signal you want to listen to and sometimes the “noise” in an environment consists of speech. Currently we are left with attempting to define speech and noise by acoustic and spatial terms. Although defining speech and noise in these terms provides a built in limitation, it also provided a starting point for development of technology to improve listening in noise. How far will technology with these limitations take us? Only time will tell.

Todd A. Ricketts, PhD
Editor-in-Chief
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