



SEMINARS IN HEARING AND
COMMUNICATIONS SCIENCES (SHACS) PRESENT:

Visuospatial attentional influences on multi-talker speech recognition in autism and ADHD

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Many children with neurodevelopmental disabilities, including attention-deficit/hyperactivity disorder (ADHD) and autism spectrum disorder (ASD), experience difficulty understanding speech in multi-talker environments, with downstream consequences for learning and social participation. Effective speech perception in noisy environments depends upon interactions between auditory and visual perception and top-down cognitive processes. We present findings from a virtual reality (VR)–EEG study of children with ADHD or ASD compared to neurotypical development, demonstrating reduced audiovisual speech benefits and atypical allocation of visuospatial attention to target speakers, indexed by steady-state visual evoked potentials. Second, we describe the design and exploratory evaluation of a VR-based training game aimed at supporting attention and audiovisual integration, balancing mechanistic fidelity with child-centered engagement. Together, these studies motivate a theoretical framework in which disrupted selective attention and audiovisual integration jointly constrain speech-in-noise perception in children with ADHD and ASD and may be promising targets for mechanism-informed intervention design.

SHACS is a collaboration between the UW Department of Speech and Hearing Sciences and the Virginia Merrill Bloedel Hearing Research Center (VMBHRC).

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