

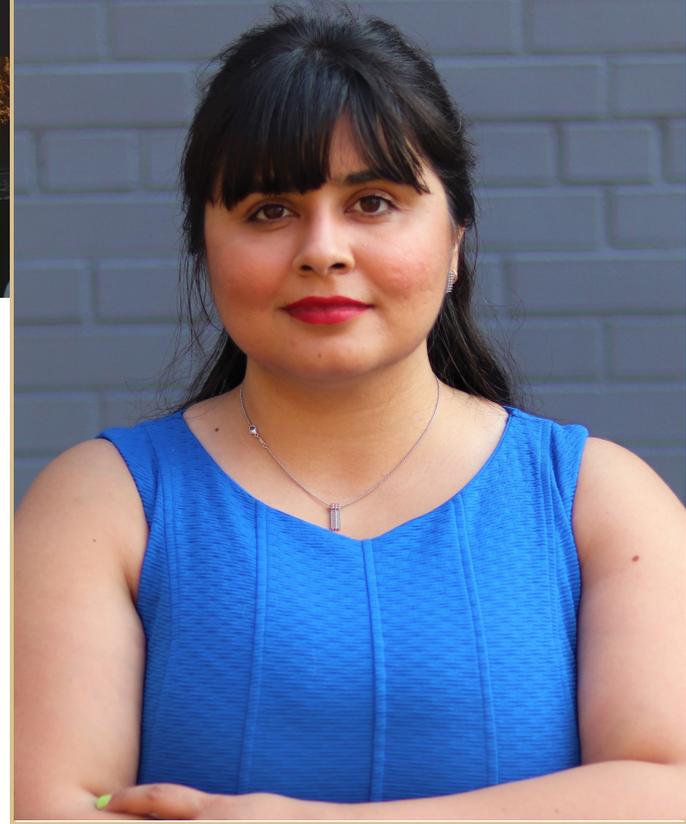
NEUROSCIENCE AND PHYSIOLOGY SEMINAR SERIES

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*“Spectrotemporal Modulation Coding in the Auditory Nerve:
Insights into Underlying Mechanisms.”*

Spectrotemporal-modulation (STM) sensitivity is a strong predictor of speech recognition in noise, yet the neural mechanisms underlying this predictive power remain unclear. We investigate how the peripheral auditory system encodes STM stimuli by analyzing single-unit responses from chinchilla auditory-nerve (AN) fibers and simulating responses using a computational AN model. A central question is which cues listeners rely on when listening to this stimulus and how these cues are preserved or degraded in the auditory periphery following various forms of sensorineural hearing loss (SNHL). We analyze spike-train data to quantify envelope coding, TFS coding, and short-term place coding.



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