

# NEUROSCIENCE AND PHYSIOLOGY SEMINAR SERIES

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*“Perceptual Similarity as a Benchmark for Neural Networks and Cross-Sensory Comparisons.”*

Building unified theories of human perception requires principled comparisons across sensory modalities while distinguishing domain general principles from modality specific mechanisms. In this talk, I present recent work demonstrating how artificial neural networks (ANNs) and human similarity judgments can be leveraged to enable such comparisons across audition and vision. First, I show that human similarity judgments provide a task agnostic benchmark for evaluating auditory and visual ANNs, identifying models whose representational structure best aligns with neural data. I then demonstrate how model derived measures of stimulus similarity allow fair comparisons of perceptual and long term memory across vision and audition. These comparisons reveal that apparent differences in memory capacity across these modalities are highly sensitive to stimulus similarity structure and presentation mode.

**TUESDAY, APRIL 28th | 12:00 PM | LILY 1-117**



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