

# Statistical Learning: A Core Mechanism in Language Acquisition and Reading Development

**SPEAKER: DR. REN JINGLEI**  
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**Date** : 20 August 2025 (Wednesday)  
**Time** : 11:30am-12:30pm  
**Zoom Link** : <https://cityu.zoom.us/j/83484615042?pwd=F3LWVcf3nxqkwLaagEgVrGS2VvyaYR.1>  
Meeting ID: 834 8461 5042 Password: 025757  
**Moderator** : Prof. Ben Li (Associate Professor)  
**Language** : English

## Abstract

Language is a uniquely human ability, enabling us to communicate complex, abstract, and creative ideas. Understanding how humans acquire and process language is crucial for advancing theories of cognition and developing interventions for individuals with language and reading disorders. My research investigates the role of statistical learning—the ability to detect patterns and regularities in sensory input—in language acquisition and reading development. I explore how statistical learning operates across modalities, domains, and languages, and how it interacts with other cognitive and environmental factors.

In this presentation, I will highlight findings from a series of behavioral, EEG, and fNIRS studies with both typically developing and at-risk populations. These studies reveal how statistical learning supports the mapping between orthography, phonology, and semantics, and how its efficiency can buffer against adverse socioeconomic influences on literacy development. I will also present neural evidence showing distinct pathways involved in reading, with implications for understanding differences between typical readers and those with reading disorders.

By integrating cognitive neuroscience methods with developmental and educational perspectives, my work aims to uncover the mechanisms that underlie individual differences in language and reading skills. These insights can inform targeted interventions, paving the way for more effective educational practices and improved outcomes for children facing language and reading challenges.

## Biography

Dr. Jinglei Ren is a developmental cognitive psychologist whose work bridges psychology, linguistics, and education. She earned her B.Sc. in Psychology and Biology, with a minor in Statistics, from the University of Waterloo, and completed her Ph.D. in Developmental Psychology at the University of Maryland, College Park, where she also obtained a certificate in Measurement and Statistics. Dr. Ren is currently a Postdoctoral Researcher at Haskins Laboratories, Yale Child Study Center. Her research focuses on statistical learning—the ability to detect patterns and regularities in sensory input—and its role in language acquisition and reading development. Using behavioral experiments, EEG, and fNIRS, she investigates how statistical learning operates across modalities, domains, and languages, and how it interacts with cognitive and environmental factors such as socioeconomic status. Her studies have shown that statistical learning supports the mapping between orthography, phonology, and semantics, and can buffer against the negative impact of adverse socioeconomic conditions on literacy outcomes.

Dr. Ren has published eight first-author papers in leading journals, including *Developmental Psychology*, *Journal of Experimental Child Psychology*, and *Journal of Educational Psychology*. She has presented her work at over 20 national and international conferences and has been recognized with numerous awards and fellowships, such as the Ann G. Wylie Dissertation Fellowship and the Beaumont Fellowship. Her long-term goal is to translate research insights into targeted interventions, improving educational outcomes for children with language and reading difficulties.

**ALL ARE WELCOME**