

**Pacific Northwest Neuropsychological Society
Children's Hospital of Seattle
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**Acquiring Language Through Early Experience:
Connecting Behavioral & Neural Measures**

The roots of a person's cognitive and social competencies start well before first words. Based on compelling evidence from measures of infants' behavior, brain development and environment, there is a more nuanced understanding of how we define the *quality* of early learning, right down to the first relationships a child develops. In this presentation, I will share recent data using behavioral, neural and environmental measures to characterize and predict language and pre-literacy in early learners. Findings highlight how domain-general learning mechanisms interact with key social experiences, and underscore how school readiness begins at birth. Longitudinal data from bilingual children are of particular interest, given the unique neural and cognitive adaptations to variable input. Practitioners of all backgrounds can apply knowledge of language acquisition, social-emotional learning, and relationships to inform decisions on early assessment, intervention, and family health advocacy.

The discussion will support participants' abilities to:

- Articulate the importance of how experiences in the first three years of life relate to later learning, using language acquisition as an example
- Describe how infants' sensitivity to important environmental cues relate to brain development
- Describe how each of these predicts later language skills
- Identify ways in which social interaction, play, language and literacy are related in the overall health of young children
- Generate specific strategies on how basic research on early learning & the brain can inform both family health practice and everyday interactions with children

Suggested Readings:

Kuhl, P. K. & Rivera-Gaxiola, M. (2008). Neural substrates of early language acquisition. *Annual Review of Neuroscience*, 31, 511-534.

Meltzoff, A. N., Kuhl, P. K., Movellan, J., & Sejnowski, T. J. (2009). Foundations for a New Science of Learning. *Science*, 325, 284-288.

Kuhl, P. K. (2007). Is speech learning 'gated' by the social brain? *Developmental Science*, 10, 110-120.



Dr. Gina Lebedeva (“LEH-beh-dev-ah”) is the Translation, Outreach, and Education (TOE) Specialist at the University of Washington’s Institute for Learning and Brain Sciences (I-LABS). Partnering with both local and national groups, their focus is on translating and disseminating current research discoveries in developmental cognitive neuroscience to educators, policy makers, parents and the public, to help bridge the gap between the science and practice of early learning.

Her doctoral research with Patricia Kuhl explored several aspects of language acquisition and development including relationships between speech perception, emergent language and early literacy, word learning in toddlers. She led studies examining infant-directed speech, brain-behavior relationships in preschoolers, and parallels between infants’ perception of music and speech. Dr. Lebedeva is also trained as a speech-language pathologist, specializing in early intervention and infant mental health. With a foundation in evidence-based practice and coaching the caregiver-infant relationship, she believes that by translating research on how early experiences sculpt the brain, we can better support children’s learning, whether through policies, classroom practices or everyday interactions.

Prior to joining UW, Dr. Lebedeva’s research in psycholinguistics led to a magna cum laude BS from Cornell University, after which she managed the Language and Cognition Lab at Columbia University. A native of Pittsburgh and resident of Seattle, her other passions include playing the oboe, social dancing with her husband, and witnessing infinite magical moments with her son.

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