Cognitive and Neurobiological Processes in Reading Comprehension

Guest Lecture by Laurie E. Cutting, Ph.D.

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Abstract: Studies have shown that there is a particular network associated with being able to recognize and decode words, a critical component of reading success. Additionally, behavioral studies indicate that other linguistic and domain general processes also contribute to reading, especially reading comprehension. Nevertheless, few studies have examined the neurobiological correlates of higher level linguistic and domain general processes with regard to their roles in lower-level (word recognition) versus higher-level (comprehension) aspects of reading. This presentation will review findings regarding the various levels of reading (word-level, comprehension), discuss the inter-relationships between the two, and examine how neurobiological approaches may inform and refine our understanding of how to identify and treat reading difficulties. Additionally, time-permitting, new exploratory work examining the role of socio-economic status on brain systems involved in reading will be presented.

Laurie E. Cutting, Ph.D., the Patricia and Rodes Hart Professor of Special Education, Psychology and Human Development, Radiology, and Pediatrics, is a member of the Vanderbilt Brain Institute, and training faculty for Vanderbilt’s Neuroscience Ph.D. program. She is also a Senior Scientist at Haskins Laboratories. Her work focuses on brain-behavior relations in children and adolescents, with a particular emphasis on reading disabilities, language and executive function. Currently, she is the principal investigator of NIH-funded research projects on reading and reading comprehension and a co-investigator on other NIH-funded and Department of Education-funded projects on reading and reading disabilities.