



Reading the genome for genes for reading

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The development of skilled reading involves major re-organization of language systems in the brain. We will present new research from our lab on the neural bases of learning to read across multiple writing systems (both alphabetic and non-alphabetic). We also focus on atypical language and literacy development in our research program, and ongoing studies indicate that children with reading disability (RD) fail to develop a coherent left hemisphere reading circuitry, that in typically developing (TD) readers comes online to support fluent word reading. With regard to neuroplasticity and remediation, treatment studies from our group and others have examined the influence of intensive reading remediation in at-risk children and adolescents, revealing substantial gains in both reading scores and corresponding development of key LH reading networks for readers afforded this treatment. Finally, we present new findings from an ongoing longitudinal study that reveal important gene-brain-behavior relations in young children at risk for language and reading problems, including new findings from magnetic resonance spectroscopy that reveal abnormal levels of key neurochemicals in high-risk learners.