

“FETAL BRAIN FUNCTIONAL NETWORKS DYNAMICS REVEALED BY FUNCTIONAL CONNECTIVITY MRI”

INVITED TALK FEATURING



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Family Development & Pediatrics
Wayne State University School of Medicine

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BYENG 420

Abstract:

Many forms of psychopathology and neurological conditions are undergirded by disruptions in neural connectivity that may begin as early as in human fetal life. If altered dynamics can be identified before the emergence of clinical or preclinical symptoms and during the course of early functional specialization, such should advance understanding and facilitate earlier intervention. Advances in functional connectivity magnetic resonance imaging (fcMRI) have enabled a non-invasive means for examining neural dynamics at the beginning of life. We have applied fcMRI to > 50 human fetuses to learn about both typical and atypical fetal neural development.

Bio:

Dr. Moriah E. Thomason is an assistant professor in the Department of Pediatrics of the Wayne State University School of Medicine and in the Merrill Palmer Skillman Institute for Child and Family Development at Wayne State University, Adjunct Professor, Psychology, Affiliated Faculty, Translational Neurosciences Program, and Director, Perinatal Neural Connectivity Unit, Perinatology Research Branch, NICHD/NIH/DHHS.

The work of Dr. Thomason's research group stems from an interest in determining how function across multiple, distributed brain networks impacts the individual developmental trajectories of children. How does the maturation of wide-scale brain neural networks coincide with the development of cognitive abilities in children? How does development proceed in a characteristically different fashion in children with early emotional psychopathology? How are these brain systems altered as the brain chemistry of children differs? Dr. Thomason's lab uses novel methods for detecting and characterizing large-scale human brain networks. Her work has already provided new insights into how human brain networks develop, mature, and are altered with specific variations in genetic composition.

Dr. Thomason has served as a reviewer for federal grant funding agencies, and she currently serves on the Editorial Board for *Frontiers in Developmental Psychology*, and on the scientific advisory board for <http://www.lumosity.com>.