



**UNC**  
GILLINGS SCHOOL OF  
GLOBAL PUBLIC HEALTH

## **BIostatistics Seminar**

**Rebecca Santelli, PhD**  
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**School of Medicine**  
**University of North Carolina**

### **Population Neuroscience of the Infant Brain**

Advances in magnetic resonance imaging (MRI) are transforming our understanding of the structural and functional organization of the human brain. But studies of prenatal and early childhood brain development have been limited by difficulties in acquiring and analyzing neuroimaging data in this age range. This represents a serious gap in current knowledge, as the prenatal period represents the foundational phase of human brain development, and the period from birth to 2 may be the most dynamic and important phase of postnatal brain development. In this talk, Dr. Knickmeyer Santelli will review major neuroimaging modalities and describe how they have been applied to a large and exceptionally well-characterized sample of human infants. In addition to describing the general trajectories of brain development during this critical period, Dr. Knickmeyer Santelli will share results from a genome-wide association study of neonatal neuroimaging phenotypes. Finally, she will present data demonstrating that differences in the composition of the gut microbiota in infancy are associated with alterations in the neural circuits responsible for visual processing, emotion regulation, and language.

**Thursday, March 9, 2017**

**3:30 pm - 4:30 pm**

**Blue Cross Blue Shield Memorial Auditorium**  
**0001 Michael Hooker Research Center**