



DREXEL UNIVERSITY

A.J. Drexel

Autism Institute



Neurobiological Variability in Individuals with Autism Spectrum Disorders

Friday, December 14, 2018

1:30 PM – 3:00 PM

AJ Drexel Autism Institute
3020 Market Street
Suite 501
Idea Lab

Dr. Jennifer Bruno is a translational researcher at the interface of developmental cognitive neuropsychology and neurobiology. Her research is aimed at understanding the neural basis of intellectual and developmental disorders with goals of improving early diagnosis using biomarkers and designing and testing targeted interventions. Current research projects include longitudinal investigations of neurobiological and behavioral outcomes in fragile X Syndrome and autism spectrum disorders. Dr. Bruno is also developing adaptable non-constraining functional near-infrared spectroscopy (fNIRS) paradigms to assess the neural circuitry underlying cognition in healthy typically developing individuals and in individuals with neurodevelopmental disorders. Working towards the goal of informing the design of targeted treatments while providing important outcome and progress metrics, Dr. Bruno's research includes infant developmental studies to uncover early, objective biomarkers and epidemiological studies to investigate brain functioning correlates in populations.

Individuals with autism spectrum disorders are known to vary widely in the type and severity of symptoms they experience. Understanding symptom variability is critical to advance early identification and personalized interventions. Individuals with fragile X syndrome, the leading single gene cause for autism spectrum disorder, can play an important role in understanding autism symptoms. In this talk I will discuss objective metrics of variability in individuals with fragile X syndrome and idiopathic autism spectrum disorders. Specifically, I will discuss neurobiological variability as assessed by multimodal brain imaging (functional and structural MRI) and how this variability can help us further understand the variability and development of behavioral symptoms of autism. Knowledge of neurobiological variability can be used to plan treatments and provide measures of individual response to treatment. I will also discuss applications of non-invasive optical brain imaging (functional near infrared spectroscopy or fNIRS) which can be used to quantify brain functioning in diverse populations and in naturalistic settings. fNIRS offers immense potential as a cost-effective developmental and treatment outcome that can readily be applied in large scale studies and in community settings.

*For more information contact
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