

Description of Research	<p>The primary goal of Dr. Law's research is to identify and understand the role of genetic factors in psychiatric, neurodevelopmental and behavioral disorders. Her research focuses on understanding the molecular and cellular mechanisms of genetic susceptibility to severe psychiatric disorders, including schizophrenia, translating this at the level of brain development and behavior. Using a multidisciplinary basic neuroscience approach, her research incorporates: human postmortem studies of the adult and fetal brain, primary human cell models, rodent primary neuronal culture, transgenic animal models and clinical genetics. Her work is highly translational and employs state-of-the-art molecular and cell biology techniques (e.g., quantitative real-time PCR, in-situ hybridization, recombinant DNA technology, lentiviral technology, primary hippocampal, striatal and cortical culture and proteomic studies) combined with comprehensive behavioral, anatomical and neurophysiological studies in transgenic rodents to determine the role of susceptibility genes in early brain development and adult brain function. In the past years, her research has focused on a key neurodevelopmental pathway, the neuregulin (NRG1/NRG3)-ErbB4-phosphoinositide 3-kinase (PI3K)-AKT gene network, as it relates to genetic risk for schizophrenia and related disorders. This work has recently expanded to include examination of a number of closely interacting genes and pathways, including Neurexin 1 (NRXN1), AKT2, AKT3 and mTOR, all of which have been strongly implicated in neurodevelopmental disorders including autism, schizophrenia and bipolar disorder.</p>
Methodology	Genetics; Molecular and Cellular Biology
Clinical and special developmental populations	Bipolar; Child; Schizophrenia
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