



The University of Iowa Pain Research Program

Advancing cellular, molecular, integrative and translational studies of the neurobiology of pain

Mouse Models of Autism to Understand Causes and Discover Treatments



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Autism spectrum disorders affect approximately 1% of the population. Diagnosis is based on three categories of behavioral criteria: unusual reciprocal social interactions, communication deficits, and repetitive behaviors. Strong evidence for a genetic basis has prompted the development of mouse models with targeted mutations in risk genes for autism. Because the diagnostic criteria are behavioral, phenotyping these mouse models requires behavioral assays with high relevance to each category of the diagnostic symptoms. Dr. Crawley's laboratory has generated mouse assays for social interaction, olfactory and ultrasonic communication, stereotyped and repetitive behaviors, to test genetic hypotheses about the causes of autism. Comprehensive behavioral phenotyping for sensory, motor, anxiety-related, and cognitive abnormalities associated with autism spectrum disorders and other neuropsychiatric syndromes will be described, translational application of robust phenotypes in mouse models will be presented, to evaluate pharmacological and behavioral interventions for the core diagnostic symptoms of autism.