Biographical Information
Eric Courchesne, Ph.D., is a professor in the Department of Neurosciences, University of California, San Diego. He is also Director of the Center for Autism Research at Children’s Hospital Research Center, San Diego, California. His Center is dedicated to uncovering the brain bases and biological causes of autism. Current MRI studies of autism aim to identify the brain structures that are abnormal at infancy in autism and to discover patterns of abnormal growth from infancy through adulthood. Current functional brain imaging techniques (“fMRI” and “ERP”) are used to establish links between autistic symptoms and the brain sites responsible for them. Dr. Courchesne’s studies have resulted in over 145 publications. His research is supported through grants from the National Institutes of Health.

Presentation Abstracts
Early Brain Overgrowth and Arrest of Growth in Autism: Microstructural Defects and Disrupted Circuit Formation (4 pm presentation)
Due to the relatively late age of clinical diagnosis of autism, the early brain pathology of children with autism has remained largely unstudied. The increased use of retrospective measures such as head circumference along with a surge of MRI studies of toddlers with autism, have opened a whole new area of research and discovery. Recent studies have now shown that abnormal brain overgrowth occurs during the first 2 years of life in children with autism. By 2–4 years of age, the most deviant overgrowth is in cerebral, cerebellar, and limbic structures that underlie higher-order social, emotional, cognitive, speech and language functions. Excessive growth is followed by abnormally slow or arrested growth. New postmortem studies have identified neuronal defects and unexpected abnormal processes that could underlie the early brain growth pathology. Early brain growth pathology in autism occurs at the very time when the formation of cerebral circuitry is at its most exuberant and vulnerable stage, and it may signal disruption of this process of circuit formation. Studies of early brain growth pathology in autism may lead to the discovery of early-warning signs, effective treatments and causes of the disorder.

What Goes Wrong in Brain Development in Autism (6 pm presentation)
Due to the relatively late age of clinical diagnosis of autism, the early brain pathology of children with autism has remained largely unstudied. New brain imaging and postmortem studies show that in the first years of life, there is pronounced brain growth pathology in autism. This growth pathology may underlie the emergence of autistic behavior because it is most evident in those specific brain regions that are responsible for high-order social, emotional, cognitive, speech and language development. Studies of early brain growth pathology in autism may lead to the discovery of early-warning signs, effective treatments and causes of the disorder.

Recent Publications

