

2018-2019 Distinguished Lecturer Series
Alan S. Brown, M.D., M.P.H.
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Alan S. Brown, M.D., M.P.H. is Professor of Psychiatry and Epidemiology at Columbia University and Director of the Program in Birth Cohort Studies at New York State Psychiatric Institute. He is a research psychiatrist and epidemiologist. Dr. Brown is a leader in collaborative birth cohort studies of prenatal, perinatal, and other early life exposures in relation to risk of neuropsychiatric disorders in offspring, including autism, schizophrenia, bipolar disorder, major depression, and attention deficit hyperactivity disorder, with over 25 years of experience. Some of his seminal findings include the identification of maternal infections, inflammatory markers, micronutrient deficiencies, organic pollutants, and smoking as risk factors for neuropsychiatric outcomes. He is principal investigator of research investigations in large and prominent birth cohort studies, including the Finnish Prenatal Studies (FiPS), based on a national cohort, and the Child Health and Development Studies in California. He has published widely on these topics in peer-reviewed journals, has received numerous research grants from the National Institutes of Health and other sponsors, was the recipient of several scientific awards including the A.E. Bennett Research Award, and has served extensively on NIH study sections. He is an Associate Editor of the *American Journal of Psychiatry* and is on the Editorial Board of *Schizophrenia Bulletin*.

Presentation Title: Neurodevelopmental risk factors for Autism

Autism spectrum disorders (ASD) represent complex developmental syndromes of the central nervous system and most likely result from multiple etiologies with genetic and environmental contributions. Emerging evidence from epidemiologic, clinical, and preclinical studies indicates that environmental exposures, particularly those arising during the prenatal period and early childhood, may play important etiologic roles. We have evaluated relationships between prenatal environmental and early childhood factors and ASD in the Finnish Prenatal Study of Autism (FiPS-A), a large seroepidemiologic investigation based on a national birth cohort. This study is characterized by availability of over 1 million archived maternal serum specimens that have been drawn and stored in virtually all pregnancies in Finland since 1983, comprehensive national psychiatric registries, and other population databases. The total sample of ASD cases in this birth cohort is over 4,000. Using these unique resources, we have demonstrated novel associations between autism and several early gestational maternal biomarkers, including an indicator of inflammation, thyroid autoantibody, and DDE, a metabolite of the insecticide DDT. New findings on relationships between accelerated growth velocity of head circumference in the first year of life as an autism risk factor will be discussed. Moreover, novel data on other ASD risk factors to emerge from this cohort including interpregnancy interval and familial aggregation of neurodevelopmental disorders will be described. Finally, I will discuss new strategies aimed at improving our understanding of the specificity of risk factors for autism.