Opportunities and Challenges in Studying Genetic Risk for Substance Abuse in the ABCD Study[®]

Robert Loughnan^{1,2}, Jon Ahern^{1,2}, Anders Dale³, Terry Jernigan¹, Wesley Thompson², Chun Chieh Fan^{2,3}

¹Center for Human Development, University of California, San Diego, 9500 Gilman Drive, La Jolla, CA 92161, USA; ²Center for Population Neuroscience and Genetics, Laureate Institute for Brain Research, Tulsa, OK 74103, USA; ³Department of Radiology, University of California, San Diego School of Medicine, 9500 Gilman Drive, La Jolla, CA 92037, USA

The ABCD Study[®] is a socioeconomically and ancestrally diverse sample of >11,000 youth across the United States. We will give an overview of this cohort highlighting the rich mental health assessment with measures of relevance to substance use. With the initiation of risky behavior and increased psychopathology, adolescence represents a particularly vulnerable time for development of substance abuse problems. To study early adolescent factors related to this vulnerability, we present analysis showcasing detectable patterns of genetic risk for psychopathology and substance use in the ABCD Study as early as 9-11 years old. We will also present work evaluating polygenic risk score methods aimed at the challenging task of prediction in this ancestrally diverse sample. Finally, we will give a brief description of upcoming genetic data that will be available for this cohort in future data releases and the opportunities this may provide for the study of substance abuse.