1065-92-155 **Raina Robeva*** (robeva@sbc.edu), Department of Mathematical Sciences, Sweet Briar College, VA , and **Jennifer Kim Penberthy**. *A Computational Method for Psycho-Physiological Assessment of Attention Deficit/Hyperactivity Disorder (ADHD).*

Attention Deficit/Hyperactivity Disorder (ADHD) is the most common developmental disorder of childhood and often continues into adulthood. The US Centers for Disease Control and Prevention estimate that approximately 4.6 million (8.4%) American children aged 6-17 years have at some point in their lives received a diagnosis of ADHD. However, unlike a neurological condition such as stroke, in which examination and neuroimaging provide clear, objective criteria in diagnosis, ADHD lacks the "hard evidence" that aids in evaluation and treatment. Even though ADHD is a physiologically based disorder with a multifactorial etiology, the diagnosis has been traditionally based on a subjective history of symptoms. Currently there is no objective criteria for diagnosis and no objective way to determine what medication and doses are optimally effective or if the condition is changing with maturation.

We present a combined psycho-physiological computational procedure that has been shown to improve the assessment of ADHD. We use this method to combine data from five studies that examine the diagnostic abilities of different behavioral rating scales and EEG assessments of ADHD, enrolling a total of 56 ADHD and 55 control subjects of different age groups and gender. (Received September 12, 2010)