

**Judicial Seminar on Emerging Issues in Neuroscience**  
Sponsored by the  
**American Association for the Advancement of Science,  
American Bar Association,  
Federal Judicial Center, and National Center for State Courts**  
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**SPEAKER BIOGRAPHIES**

**Monte S. Buchsbaum, M.D.**, Director of the Neuroscience PET Laboratory at Mt. Sinai Hospital in New York City, has been a pioneer in brain-mapping studies of schizophrenia, both with topographic EEG and PET explorations of antipsychotic-drug effects and the role of the prefrontal cortex and attention in this complex disorder. Since 1980, the primary focus of Dr. Buchsbaum's research has been brain imaging, combining positron emission tomography, computerized EEG and evoked potential brain mapping, and later magnetic resonance imaging and diffusion tensor imaging. While in the Intramural Research Program at the National Institute of Mental Health, Dr. Buchsbaum published some of the first PET studies in psychiatry. Because the PET field was still in its relative infancy, he developed a family of computer programs for specialized PET analysis. In 1982, Dr. Buchsbaum left the NIMH to head the Brain Imaging Center at the University of California, Irvine (UCI), where he carried out studies on the prefrontal cortex in schizophrenia using FDG-PET and EEG. Dr. Buchsbaum is the author of over 450 published scientific articles in reviewed journals. He is Editor of *Psychiatry Research* and Co-Editor of *Psychiatry Research: Neuroimaging*.

His work on the prefrontal cortex led Dr. Buchsbaum to the applications of PET in traumatic brain injury since vehicular accidents frequently involve damage to the frontal lobe. Moreover, frontal lobe injuries, which affect mood, executive function and personality are harder to demonstrate than extremity loss or motor disabilities, and thus more likely to be litigated. Diminished frontal activity may also be associated with deficits in impulse control and future-oriented planning, and may be present in individuals who commit violent acts. Applications of PET scanning to understanding of mitigating circumstances have been presented in some capital cases. Dr. Buchsbaum is the author of over 450 published scientific articles in reviewed journals. He is Editor of *Psychiatry Research* and Co-Editor of *Psychiatry Research: Neuroimaging*.

**Lila Davachi, Ph.D.** conducts research focused on understanding the cognitive and neural mechanisms underlying memory. After majoring in Psychology at Barnard College, Lila Davachi went on to earn her Ph.D. in Neurobiology at Yale University. The focus of her Ph.D thesis was the examination of brain networks important for short-term and long-term memory in non-human primates. She continued her training in the Brain and Cognitive Sciences Department at MIT where she focused on human learning and memory studies using functional imaging. She is now an Assistant Professor in Psychology and Neural Science at New York University.

**David J. Heeger, Ph.D.** is a Professor of Psychology and Neural Science at New York University. He received his Ph.D. in computer science from the University of Pennsylvania. He was a postdoctoral fellow at MIT, a research scientist at the NASA-Ames Research Center, and an Associate Professor at Stanford before coming NYU. His research spans an interdisciplinary cross-section of engineering, psychology, and neuroscience, the current focus of which is to use functional magnetic resonance imaging (fMRI) to quantitatively investigate the relationship between brain and behavior. He was awarded the David Marr Prize in computer vision in 1987, an Alfred P. Sloan Research Fellowship in

neuroscience in 1994, the Troland Award in psychology from the National Academy of Sciences in 2002, and the Margaret and Herman Sokol Faculty Award in the Sciences from New York University in 2006.

**Robert Swift, M.D., Ph.D.** received his A.B. in Biological Sciences from the University of Chicago in 1972, where he also received a Ph.D. from the Department of Pharmacological and Physiological Sciences in 1977, and an M.D. with Honors from the University's Pritzker School of Medicine in 1979. Dr. Swift moved to Brown University in 1983 to become a psychiatrist at Roger Williams Medical Center, and subsequently was appointed Chief of Psychiatry in 1988. In 1997, he became the Associate Chief of Staff for Research at the Providence VA Medical Center, where he is responsible for the development and oversight of all research. He is currently a Professor in the Department of Psychiatry and Human Behavior at Brown University Medical School. He is also Associate Director of the Brown University Center for Alcohol and Addiction Studies and Associate Director of the Post-doctoral Training Program at the Center. He is a diplomat of the American Board of Psychiatry in Adult Psychiatry and in Addiction Psychiatry.

Dr. Swift conducts clinical and laboratory research on the psychosocial and pharmacological treatment of alcohol abuse and dependence, with the goal of developing new treatments and determining the efficacy of current therapies for the treatment of alcohol dependence and drug abuse. He is also working to develop a transdermal alcohol sensor to improve the assessment of alcohol consumption in treatment and research settings, and has begun an exploratory study on the genetics of alcoholism in American Samoa. He is a recipient of research grants and contracts from the National Institute on Alcohol Abuse and Alcoholism (NIAAA) and National Institute on Drug Abuse (NIDA) of the National Institutes of Health, and from foundations and industry. He is the author of more than 90 peer-reviewed scientific articles in the field of psychiatry and the addictions. He is a Distinguished Fellow of the American Psychiatric Association and was elected to membership in the American College of Neuropsychopharmacology.