orienting, and conflict) and their respective ratios relative to mean reaction times. With regard to gender differences, group comparisons were performed for schizophrenic patients vs. healthy controls.

Results: Significant differences between patients and controls could be detected for mean reaction time (639 vs. 538 ms) and for conflict ratio (0.158 vs 0.191). The latter difference mainly resulted from gender-specific variances of the conflict network in opposite directions.

Conclusions: The executive function as represented by the conflict network of visual attention of the ANT is affected in schizophrenia. We have detected hitherto unreported gender-specific differences between healthy controls and schizophrenic patients. Especially as regards the conflict network the ANT offers a promising methodology to detect a neuropsychological endophenotype of schizophrenia.

SATURDAY, MAY 16

PLENARY SESSION

Clinical Application of Cognitive and Affective Neuroscience to Developmental Problems

Saturday, May 16, 2009 8:00 AM - 10:00 AM

Location: Regency Ballroom - 3rd Floor

Chair: Daniel S. Pine

526. Schizophrenia and Autism: Relationship Revisited

Judith L. Rapoport

Child Psychiatry Branch, NIMH, Bethesda, MD

Judith L. Rapoport M.D. is Chief of the Child Psychiatry Branch, NIMH. She is a graduate of Harvard Medical School. She did her clinical and research training at the Massachusetts Mental Health Center (Boston), Children's Hospital (DC), and the Karolinska Hospital (Stockholm). Her research has focused on diagnosis in child psychiatry, Attention Deficit Hyperactivity Disorder and Obsessive Compulsive Disorder. Over the past decade, her group has been studying the clinical phenomenology, neurobiology and treatment of Childhood Onset Schizophrenia, as well as normal and abnormal brain development in childhood and adolescence. She is an author or co-author of over 300 scientific papers, a member of the Institute of Medicine, and a Fellow of the American Academy of Arts and Sciences.

527. Bipolar Disorder: A Developmental Neuroscience Approach

Ellen Leibenluft

MAP, NIMH, Bethesda, MD

Ellen Leibenluft, M.D. is Senior Investigator and Chief of the Section on Bipolar Spectrum Disorders in the Emotion and Development Branch, Mood and Anxiety Program, National Institute of Mental Health. Her research focuses on the brain mechanisms mediating bipolar disorder in youth, and on the phenomenology and pathophysiology of severe irritability in children. Dr. Leibenluft received her B.A. from Yale University *summa cum laude* and her M.D. from Stanford University. After completing residency training at Georgetown University Hospital, she served on the faculty there as director of the psychiatric inpatient unit and day hospital. She came to the NIMH in 1989, and since then has been conducting research on bipolar disorder. She has approximately 100 professional publications and is a Deputy Editor of the *Journal of the American Academy of Child and Adolescent Psychiatry* and a member of the editorial boards of the *American Journal of Psychiatry, Biological Psychiatry*, *Bipolar Disorders, Depression and Anxiety,* and the *Journal of Child and Adolescent Psychopharmacology*. Dr. Leibenluft is a member of the American College of Neuropsychopharmacology and the American Psychiatric Association Work Groups on Childhood Disorders and Mood Disorders for DSM-V. Her awards include the Distinguished Psychiatrist Award of the American Psychiatric Association, Special Service Awards from the NIH, and the NIMH and NIH Outstanding Mentor Awards.

528. The Neural Bases of Emotion and the Familial Vulnerability to Depression

Bradley S. Peterson[1,2]

[1]Department of Child Psychiatry, New York State Psychiatric Institute, New York, NY, [2]Psychiatry, Columbia University, New York, NY

Dr. Peterson is the Director of Child & Adolescent Psychiatry and the Suzanne Crosby Murphy Professor in Pediatric Neuropsychiatry at Columbia University and New York State Psychiatric Institute. He is also Director of the MRI Research Unit at New York State Psychiatric Institute. He received his Bachelor's degree and graduated summa cum laude and Phi Beta Kappa from Tulane University before receiving his Doctorate of Medicine and Alpha Omega Alpha membership from the University of Wisconsin-Madison. He trained in General Psychiatry at Massachusetts General Hospital and Harvard University, and then in Child Psychiatry at the Child Study Center of Yale University. His research interests primarily concern the application of neuroimaging methods to the study of serious childhood neuropsychiatric disorders, including Attention-Deficit/Hyperactivity Disorder, Tourette syndrome, Obsessive-Compulsive Disorder, Autism, Bipolar Disorder, Depression, prenatal toxin exposure, and premature birth. His imaging studies integrate measures of brain structure and function with genetic, cognitive, and behavioral measures to define disease processes and therapeutic responses in large samples of children, adolescents, and adults. He has published more than 200 peer-reviewed papers and 25 book chapters or invited reviews. He has been the primary mentor for a dozen graduate and medical students and 40 postdoctoral fellows and junior research faculty members.

529. Targeting Impaired Cognition in Schizophrenia

Cameron S. Carter

Psychiatry and Psychology, University of California, Davis, Sacramento, CA

Dr Carter received his medical education at the University of Western Australia and his psychiatry residency training at the University of California at Davis, where he joined the faculty as an Assistant Professor in 1989 and conducted cognitive psychological studies in schizophrenia. In 1993 he moved to the University of Pittsburgh to obtain further training in cognitive neuroscience and non-invasive brain imaging. In October 2003 Dr Carter assumed the position of Professor of Psychiatry and Psychology at the University of California at Davis. Dr Carter holds an Endowed Chair in Schizophrenia Research and Education, and directs the Imaging Research Center at the University as well as the Schizophrenia Research Program which includes the innovative EDAPT (Early Diagnosis and Preventive Treatment) Dr Carter's research applies the tools and constructs of cognitive and affective neuroscience to understand the causes of the treatment refractory cognitive and negative symptoms in schizophrenia, to enhance the development of effective therapies for these symptoms, and the development of neuroimaging tools to aid in the early diagnosis of schizophrenia and other serious mental disorders. Dr Carter has published over 180 papers and he has been the recipient of the Klerman Award for Outstanding Clinical Research by a NARSAD Young Investigator, a NARSAD Distinguished Investigator Award, a Burroughs Wellcome Foundation Translational Clinical Scientist Award and an NIMH Independent Scientist Award. Dr Carter is Deputy Editor of Biological

Psychiatry and serves on the Editorial boards of the American Journal of Psychiatry, Schizophrenia Bulletin, Neuropsychopharmacology and Psychiatry Research: Neuroimaging.

530. WITHDRAWN

PRESIDENTIAL INVITED LECTURE
Saturday, May 16, 2009 11:00 AM - 12:00 PM
Location: Regency Ballroom - 3rd Floor
Chair: Husseini Manji

531. Signal Transduction Pathways used by Therapeutic Agents and Drugs of Abuse

Paul Greengard

Laboratory of Molecular and Cellular Neuroscience, The Rockefeller University, New York, NY

Dr. Paul Greengard is the Vincent Astor Professor of Molecular and Cellular Neuroscience at The Rockefeller University and Director of The Fisher Center for Alzheimer's Research. Greengard received his Ph.D. from Johns Hopkins in 1953. He spent five years in England receiving advanced training at the University of London, at Cambridge University and at the National Institute of Medical Research. Upon his return to the United States, Greengard worked as Director of the Department of Biochemistry at Geigy (now Novartis) Research Laboratories, in Ardsley, New York for eight years. In 1967, he left the pharmaceutical industry to return to academia. From 1968 to 1983 Greengard served as Professor of Pharmacology and Psychiatry at Yale University, at which time he moved to his current position at The Rockefeller University. Over the years, Greengard's achievements have earned him many distinguished awards including the Metropolitan Life Foundation Award for Medical Research, The Charles A. Dana Award for Pioneering Achievements in Health, the Ralph W. Gerard Prize in Neuroscience from the Society for Neuroscience, The National Academy of Sciences Award in the Neurosciences, the 3M Life Sciences Award of the Federation of American Societies for Experimental Biology. In the year 2000, Greengard was awarded the Nobel Prize in Physiology or Medicine for his discoveries concerning signal transduction in the nervous system. He is an Honorary Member of the National Academies of Science in Sweden, Norway and Serbia and has been the recipient of many honorary degrees. He is a member of the National Academy of Sciences and of the Institute of Medicine of the National Academies.

WORKSHOP
Neural Substrates of Developmental Risk for Psychiatric Disorders: Research Methods
Saturday, May 16, 2009 12:30 PM - 2:00 PM
Location: Regency A - 3rd Floor
Chair: Jennifer Urbano Blackford*
Moderator: Ned Kalin**

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**Supported by NIMH, Hedberg Foundation

532. Neural Substrates of Developmental Risk for Psychiatric Disorders: Research Methods

Carl E. Schwartz[1], Jennifer Urbano Blackford[2], David H. Zald[2], Ned Kalin[3]

[1]Massachusetts General Hospital, Boston, MA, [2]Vanderbilt University, Nashville, TN, [3]Department of Psychiatry, University of Wisconsin, Madison, WI

Over the past several years, it has become increasingly clear that many psychiatric disorders have neurodevelopmental origins. While studies of adults with psychiatric disorders may inform us about the end stage of the disease process, in order to identify the origins of disease, we must shift our research focus to developmental risk factors. Temperament, defined as biologically-based individual differences in emotions, cognitions, and behaviors, provides a framework for identifying developmental risk factors. Temperament has been implicated in the development of several psychiatric disorders including anxiety, depression, ADHD, and substance abuse. However, most of this early research was based on behavioral data. Modern brain imaging methods, such as fMRI and PET, provide new opportunities to discover the neural basis of these individual differences in temperament. This emerging field of research has the potential to provide unique insights into both the origins and development of psychiatric disease. This workshop will bring together the fields of developmental psychology and psychiatric neuroimaging to address the question: How can we use modern neuroscience methods to identify the neural substrates of developmental risk for psychiatric disease? Four investigators will present recent scientific advances based on structural MRI, fMRI and neuroreceptor PET studies of temperament and personality in both humans and primates. In addition, Dr. Kalin will lead a lively debate on the relative merits of a) imaging as a tool for identifying developmental risk, b) prospective versus retrospective study designs, and c) usefulness of preclinical animal models.