

Research Divisions

Analytical Psychopharmacology

Thomas B. Cooper, M.A.

Division Chief

The division develops and applies state of the art technology to study the pharmacokinetics and pharmacodynamics of psychotropic drugs, to explore the mode of action of new psychotropic compounds, and the basic molecular pharmacology of alcohol abuse and alcoholism with particular emphasis on the endocannabinoid system. The laboratory serves as a core facility in two NIMH and one NIDA clinical research centers, a NIDA Medication Development Research Unit and several large multicenter clinical studies within the Institute.

Departmental programs include both clinical and basic research. On the clinical side, Dr. Raymond Suckow's work in the development of a highly specific and sensitive liquid chromatography/mass-spectrometry procedure for measuring plasma dihydroxidine, an experimental D1 dopamine receptor agonist, has progressed to the validation level. Other procedures for measuring GABA receptor agonists baclofen and vigabatrin are presently under development. The Immunoassay group has developed and validated an assay for spinal fluid CRH content.

On the basic research side, we have established a role for the recently-discovered endocannabinoid system (ECS) in alcohol-dependence and voluntary alcohol consumption and demonstrated possible utility of drugs targeted against the ECS system in reducing alcohol tolerance/dependence and voluntary alcohol consumption. We have also shown that an altered ECS could contribute to depressive and suicidal behavior.

Behavioral Medicine

Richard Sloan, Ph.D.

Division Chief

The division's research focus is on the contribution of psychological and behavioral factors to the onset, progression, and management of physical and mental disease. Projects range from the purely behavioral to the cellular, with new studies extending to gene expression. Our goal is to elucidate the mechanisms by which psychological and behavioral factors confer risk of physical and mental disease.

Current research includes a series of NIH- and American Heart Association-funded studies examining the role of the autonomic nervous system in the connection between psychosocial factors and coronary artery disease. With funding from Intel, we are developing an instrument assisted brief CBT program to treat hostility. The program is built around a smart cell phone that simultaneously monitors psychosocial states and underlying cardiac autonomic activity. The phone alerts patients to states of elevated stress and instructs them to apply the techniques learned during CBT sessions.

Other research includes a series of studies investigating the influence of maternal mood disorder on fetal and neonatal development, and

studies of the cognitive sequelae of chemotherapy for breast cancer.

Biological Psychiatry

Steven Roose, M.D.

Acting Chief

The Division of Biological Psychiatry is engaged in a wide range of pre-clinical and clinical research efforts focused on somatic therapies in psychiatry. These include the operation of four outpatient research clinics: Brain Behavior Clinic, Late Life Depression Clinic, Huntington's Disease Center of Excellence, and Memory Disorders Center. The division has laboratories for the study of psychiatric treatments in preclinical models, laboratories and clinical research programs in Electroconvulsive Therapy (ECT), Vagus Nerve Stimulation (VNS) and is about to begin a program in deep brain stimulation (DBS).

The ECT program remains a leading research effort on this treatment modality. The division continues in its mission to develop strategies to reduce the cognitive side effects of ECT by studying the use of ultra-brief pulse width stimulation and seizure induction in the prefrontal cortex through the use of unidirectional stimulation and an altered electrode design.

Other research includes a multi-center clinical trial to determine the necessary duration of antipsychotic medication treatment for Alzheimer's patients who develop psychosis or agitation; studies of which patients with mild memory and cognitive problems go on to develop dementia, and the first prospective study of whether the use of combined antidepressants and cognitive enhancers will slow the onset of dementia in patients who present with both depression and mild cognitive impairment.

Biometrics Research

Robert L. Spitzer, MD

Division Chief

The work of the division focuses on improving psychiatric classification, criteria for psychiatric diagnosis, and the development of standardized instruments for evaluating psychopathology.

Drs. Spitzer and Janet Williams continue their collaboration with colleagues at the Regenstrief Institute and University of Heidelberg to develop measures for anxiety and depression. In a sample of over two thousand primary care patients, they developed and validated an ultra-brief self-report composite scale to identify probable cases of anxiety and depression, the Patient Health Questionnaire for Depression and Anxiety (PHQ-4).

Dr. Williams is working with colleagues on new models of training raters in clinical trials. She has continued her work with an international collaborative group testing a reformulation of the Hamilton Depression Scale, the GRID-HAMD, and developing a new rating scale for

depression.

Dr. First continues to be centrally involved in the research planning stages of the DSM-V revision process. He is co-principal investigator and a member of the Steering Committee overseeing the NIMH/NIDA/NIAAA-funded DSM-V/ICD-11 diagnostic research conference co-operative agreement, and he is involved in the planning and execution of each of the 11 diagnostic conferences preparing for the DSM-V revision process.

Biopsychology

Gerard Bruder, Ph.D,
Division Chief

Using behavioral, cognitive, and physiological techniques, the Biopsychology Division investigates brain-behavior relationships and the neurobiological and cognitive mechanisms underlying neuropsychiatric disorders.

Drs. Michael and Juan Su Terman (Clinical Chronobiology) completed an NIMH-supported six-year study of three nonpharmaceutical treatments for seasonal affective disorder (SAD): dawn simulation, high-density negative air ionization, and bright light therapy. The findings, published in *American Journal of Psychiatry*, indicated that all three interventions exceeded the placebo rate.

Drs. Gerard Bruder, Craig Tenke and Jürgen Kayser (Psychophysiology) continued their NIMH-funded studies of right-left brain function in depressive disorders. Most recently, they replicated prior findings suggesting the potential of electrophysiologic (EEG) measures of regional hemispheric asymmetry as predictors of therapeutic response to an SSRI antidepressant.

Dr. W. Crawford Clark (Somatosensory and Pain Unit) and his associates continued to study the dimensions underlying painful and emotional experiences, validating the 101-item Multidimensional Affect and Pain Survey (MAPS) in cancer patients and developing a short 30-item MAPs questionnaire.

Brain Stimulation and Therapeutic Modulation

Sarah H. Lisanby, M.D.
Division Chief

The Brain Stimulation and Therapeutic Modulation (BSTM) Division specializes in the use of emerging electromagnetic means of modulating brain function to study and treat psychiatric disorders. The ability to stimulate targeted brain structures non-invasively has opened for the first time the potential to probe the circuitry underlying brain-based disorders, and represents a powerful new tool for treating disorders that fail to respond to conventional therapies.

A focus of our work is on the development of Magnetic Stimulation Therapy (MST) as a less invasive means of performing convulsive therapy. Results include the first publications on the safety of MST

(and electroconvulsive therapy) in a preclinical model, the finding that MST has a better acute safety profile than ECT in patients with depression, and neurophysiological evidence that MST-induced seizure are more focal and result in relative sparing of deeper brain structures compared to ECT.

Other techniques studied include deep brain stimulation (DBS), electroconvulsive therapy (ECT), transcranial direct current stimulation (tDCS), transcranial magnetic stimulation (TMS), and vagus nerve stimulation (VNS).

Child and Adolescent Psychology

David Shaffer, F.R.C.P., F.R.C.Psych
Division Chief

Research activities in the Division of Child and Adolescent Psychiatry include state-of-the-art neuroimaging; therapeutic trials with medication and psychotherapy; epidemiological studies on suicide, conduct disorder, and the impact of trauma; and identifying the determinants of suboptimal clinical interventions.

Key projects in the past year include investigation of the neural systems underlying attention regulation and impulse control, the role of neural plasticity in Tourette's syndrome, the role of the limbic system in the pathology of ADHD, and the development of advanced techniques for multimodal imaging.

The Division's clinical services include a large outpatient service that comprises a series of specialty clinics (Children's Anxiety and Depression, Disruptive Behavior Disorders, Neuropsychiatry) and the Pediatric Consultation and Liaison Clinic in the Children's Hospital of New York. In Columbia University, it operates a specialized Anxiety Disorders Clinic and the Developmental Neuropsychiatry Program for Autism and Related Disorders. The division also serves a large network of school-based mental health clinics.

The Pediatric Psychiatry Service at the Morgan Stanley Children's Hospital of New York-Presbyterian Hospital is one of the major providers of child and adolescent psychiatric services in upper Manhattan. In 2006, the service generated almost 30,000 outpatient visits and 1,800 consultations to inpatients at Children's Hospital. On an annual basis, the Pediatric Psychiatry Service provides mental health evaluation and treatment to approximately 3,250 children and adolescents.

The joint New York-Presbyterian Hospital Child and Adolescent Psychiatry Residency Training Program of Columbia and Cornell Universities began its first year on July 1, 2005. It represents an exciting collaboration between New York-Presbyterian Hospital, Columbia and Cornell Universities, and New York State Psychiatric Institute. In its first year, the program successfully recruited 12 highly qualified residents out of approximately 116 applicants. There are currently 11 MDs and PhDs in the division's research training program. Fellows are working in fields of laboratory research, fMRI, services, and treatment research in the areas of anxiety, depression, eating disorder, bipolar disorder and developmental disorders.

RESEARCH DIVISION, *continued*

The Division continues to make great inroads with its nationally-recognized Teen Screen Program, which assists communities throughout the country with developing locally operated and sustained mental health screening programs for youth. Since its inception in 1999, more than 100,000 teenagers have been screened. TeenScreen helped lead the way to passage of the nation's first federally funded youth suicide prevention program, the Garrett Lee Smith Act.

Clinical and Genetic Epidemiology

Myrna Weissman, Ph.D.

Division Chief

The Division of Clinical & Genetic Epidemiology focuses on understanding the rates and risk factors primarily of mood and anxiety disorders (using methods of epidemiology and genetics), and applying these findings to develop and test empirically based interventions. As new findings, evolving interests, and new technology have been introduced, the research has extended to include neuro-psychological and brain imaging studies; health services research, a section in mathematical genetics which includes a research and training program to strengthen statistical methods in genetic studies.

Current funded grants include a total of 29 from NIH, private foundations, and pharmaceutical companies. Last year the group published 44 papers in scientific journals.

Over the past year, the Division released findings on the long-term effects of 9/11 in high-risk clinical populations, identified a major gene for adolescent-onset epilepsies, presented a new method to correct for the population stratification factors that can seriously hamper case control genetic association studies, and reported on a genome-wide linkage scan in early onset recurrent major depression.

Clinical Psychobiology

Anissa Abi-Dargham, M.D.

Acting Chief

This division focuses on the use of imaging, combined with clinical, genetic and cognitive assessments to study the pathophysiology of schizophrenia, alcoholism and related mental illnesses in order to develop biomarkers for early diagnosis, subgroup characterization and to better guide treatment including new drug development.

Using cortical D1 imaging, investigators in the pathophysiology research section discovered that available D1 tracers are not appropriately selective in the cortex, highlighting the need for a more selective tracer to continue the investigation of D1 transmission as a marker of dopamine tone in the cortex.

Treatment research studies are now preparing for a D1 agonist clinical trial funded by the National Institute of Mental Health, aimed at providing a proof of concept for cognitive enhancement in schizophrenia with subacute administration of a D1 agonist.

The magnetic resonance spectroscopy (MRS) research program exam-

ined the well-known phenomenon of contamination of GABA signal by macromolecules, showing that while GABA and macromolecule signal have significant anatomic variability, the percent contribution is stable anatomically. This will provide a correction factor for ongoing and future clinical studies using these methods.

Clinical Psychopharmacology

Alexander H. Glassman, M.D.

Division Chief

Our research efforts have focused on depression, reward systems and their comorbidity. Areas of interest include: biological characteristics and treatment modalities in patients with late-life depression; the relationship of depression to the development of cardiac mortality/morbidity; pharmacological and psychological treatment of eating disorders; psychological concomitants of and risk factors for eating disorders; and smoking dependence.

Dr. Glassman, in association with the Department of Medicine and School of Public Health is completing a five-year follow-up of patients who participated in the study of an SSRI vs. placebo in major depression following myocardial infarction. Drs. Gregory Pelton, Dev Devanand and Steven Roose began the first study of whether the combination antidepressants and cognitive enhancers will decrease the rate of conversion of depressed patients with cognitive impairment to dementia.

In the past year, the division has also continued its study of the psychobiological concomitants of bulimia nervosa, showing that these patients appear to have diminished sensitivity to gastric distension, and publishing results suggesting that lack of early medication response predicted an ultimate failure to respond. It completed the largest study of medication in the treatment of this devastating illness, aimed at examining the role of fluoxetine in the prevention of relapse.

Communication Sciences

Joseph Jaffe, M.D.

Division Chief

This laboratory-based Division was founded by Dr. Lawrence Kolb to study the Psychiatric Interview. Current research focuses on infant attachment and the mother-infant communication system, finding that 12-month insecure attachment is associated with both higher and lower 4-month values of self- and interactive regulation than secure attachment, as a function of partner (mother, infant) and communication modality (gaze, facial and vocal affect, touch). It found that infant self-regulation yielded the most associations with 12-month attachment, suggesting that in the origins of attachment security, more coordination is not necessarily better.

Another recent study found that, contrary to hypothesis, insecure attachment at one year of age is statistically unrelated to parental mixed-handedness – a task-specific dysjunction of lateral hand preferences, long proposed as a biological marker for vulnerability to various

pathologies.

Developmental Psychobiology

Michael Myers, Ph.D.

Division Chief

Research in the Division of Developmental Psychobiology is focused on understanding processes involved in the development of behavior and fundamental relationships between behavior and biology. Ongoing studies use a variety of novel animal models to investigate the neurobiological substrates of attachment, separation anxiety, fear responses, and pain regulation. Studies involving human subjects examine the role of pre- and post-natal experiences on fetal, infant, and child behavior and physiology.

Many of the animal studies in the division continue to focus on models designed to help us understand the developmental origins of normal and abnormal expression of fear and anxiety. Other animal studies focus on the roles of serotonin in early development and modulating behavioral inhibition, maternal attachment, and gene expression changes associated with painful stimuli and neuronal damage.

Human subjects research includes pioneering work on how interpersonal violent trauma subsequently affects the ways mothers interact with their toddlers and preschoolers, the effects of maternal anxiety, depression, and behavioral and SSRI treatments on neurobehavioral traits of the fetus and newborn, and studies of infants in populations at high risk of exposure to alcohol and nicotine during gestation.

Epidemiology of Brain Disorders

Ezra Susser, M.D., Dr.PH.

Division Chief

The Division of Epidemiology of Brain Disorders has two main areas of research. The first focuses on prenatal determinants of schizophrenia and other neurodevelopmental disorders, and involves a series of follow-up studies in "prenatal" cohorts. Our work on schizophrenia is the most advanced and has produced important findings on prenatal exposures (infection, nutrition, toxins, paternal age) that may play a role in the pathogenesis of schizophrenia. The second area of research investigates psychosocial treatment for schizophrenia and interventions for homeless mentally ill persons. Among these are the "Critical Time Intervention" (CTI) to reduce homelessness, and "Sex, Games and Videotapes" a 15-session AIDS prevention curriculum. The CTI project has become a model for programs throughout the US and internationally.

Current research focuses on prenatal determinants of schizophrenia and other neurodevelopmental disorders and psychosocial treatments for schizophrenia and interventions for the homeless mentally ill. In the newly funded Columbia Center for Homelessness Prevention Studies, Dr. Daniel Herman continues his groundbreaking research on effective service delivery models for adults with severe mental illness, and is now completing a randomized trial on the CTI.

Epidemiology of Mental Disorders

Elmer Struening, Ph.D.

Division Chief

The Epidemiology of Mental Disorders Division houses diverse research activities including studies of factors affecting the onset and course of mental illness, mental health services, homelessness and community impact. In addition it provides technical services including data coordination, psychometrics and statistics.

Current research foci include the assessment of the effects of multiple anxiety disorders on well-being; procedures for training and assessment of caregivers of individuals with borderline personality disorder; and assessment protocols for research on homeless persons with psychiatric and substance abuse disorders. Dr. Susan Barrow is planning a pilot study under the auspices of the new Columbia Center for Homelessness Prevention Studies to examine pathways to homelessness in Upper Manhattan, while Dr. Patricia Cohen and her team had over 20 new publications based on the ongoing Children in the Community Study.

Drs. Bruce Link and Dorothy Castille continued work on a New York State Department of Mental Health-funded study of the implementation of Kendra's Law, which mandates participation in outpatient treatment for people with serious and chronic mental disorders.

Epidemiology of Substance Abuse

Denise B. Kandel, Ph.D.

Division Chief

This division investigates the natural history of drug involvement, the risk factors and consequences of drug abuse, and comorbidity of substance abuse with problem behaviors and psychiatric disorders in adolescents and adults. Cigarette smoking and nicotine dependence represent a major focus of current research activities.

An important current research interest is a longitudinal follow-up of the Transition to Nicotine Dependence in Adolescence study. A major goal of the study is to describe the natural history and risk factors for nicotine dependence in different ethnic groups, and to examine the comorbidity, sequencing and reciprocal effects between depression and other psychiatric disorders, smoking and nicotine dependence. The study established that 25% of youths experience the full syndrome of nicotine dependence within 23 months of having started to smoke.

The Division has also initiated a completely novel area of research, focused on the molecular basis of epidemiological paradigms in mice, in collaboration with Drs. Eric Kandel and Amir Levine from the Center for Neurobiology and Behavior. This approach will allow the identification of causal relationships underlying smoking behaviors that are not possible to establish in human populations studied in epidemiological studies.

Geriatrics and Gerontology/Stroud Center for Study of Quality of Life

Barry J. Gurland, FRC Physicians (London) FRC Psychiatry
Division Chief

The Center's mission is to foster scholarly activities contributing to the prevention or delaying of losses in quality of life that may accompany chronic diseases and aging.

The Center is currently involved in a wide range of studies, including the identification of key risk markers for impairments in quality of life; international focus groups on improving quality of life in dementia based on the experience of patients and caregivers; the heritability of healthy aging; and the identification of a science-based model for quality care in aging, which will contribute to a major reform movement in nursing home standards.

The Columbia Active Life of Minority Elders (CALME) Center is one of six Resource Centers for Minority Aging Research (RCMARs). Staff of the Center have partnered with the New York State Department of Health and the Agency for Healthcare, Research and Quality (AHRQ) on several projects aimed at improving quality of care, most recently an evaluation of best practices for nursing home care.

HIV Center for Clinical and Behavioral Studies

Anke A. Ehrhardt, Ph.D.
Division Chief

Now in its 19th year, the HIV Center for Clinical and Behavioral Studies at New York State Psychiatric Institute and Columbia University is one of the oldest and most productive continuously funded AIDS research centers in the United States.

Its research focuses on studying sexual risk behavior and gender in order to design effective interventions to reduce risk for HIV infection among children and adolescents, heterosexual women and men, persons who engage in same-sex behavior, and people with mental illness.

The HIV Center is part of a consortium of NIMH-funded AIDS research centers conducting behavioral research on acute HIV infection to better understand the social and psychological context of recent HIV transmission and to assess sexual behavior, substance use, and psychological state of individuals with acute infection.

Other key research projects this year include a structural intervention in promoting use of the female condom, training for service providers in China in dual protection counseling, and the identification of risk and protective factors for the onset of sexual and drug use behavior in HIV-negative children with HIV-positive mothers to reduce risk behavior among patients with serious mental illness.

From the beginning, the Center has collaborated with researchers across the globe, including South Africa. In recent years, the focus has shifted to the impact of AIDS in the developing world, Nigeria and

Brazil. The HIV Center has also been an active site of training activities, training many postdoctoral fellows in behavioral science research training in HIV infection, and more recently in human sexuality research with a focus on applied problems in HIV prevention.

Lieber Center for Schizophrenia Research and Treatment

Jeffrey A. Lieberman, M.D.
Center Director

Since its inception, the mission of the Lieber Center for Schizophrenia Research and Treatment has been to unite world-class researchers in finding the cause of schizophrenia and developing strategies for prevention and cure. It has been effectively mandated that the efforts of researchers be synergistic and maintain a translational level of analysis.

The past year was a watershed year for the Center. Phase I of The Lieber Center's five year funding program drew to a close with a critical mass of innovative collaboration and patient-oriented research bringing into focus the results of the pilot-study research of the early years. Translational bridges from basic and clinical research findings to novel preventative and therapeutic strategies powered the genetic and neuroscience impact of experimental therapeutics in the plan for Phase II of the Center.

Many of these advances will come to fruition in the new Lieber Clinic for Comprehensive Care, an innovative approach to the treatment of schizophrenia which will combine psychiatric, medical and rehabilitation services under one programmatic umbrella. It will consist of an integrated, consumer-directed, individually tailored program that will offer comprehensive assessment, treatment and clinical management to patients with schizophrenia and related psychotic disorders.

In 2006 the Lieber Center also expanded to include the Center of Prevention and Evaluation (COPE) which, in conjunction with the Department of Medical Genetics, identifies and treats young prodromal subjects with the aim of developing diagnostic at-risk criteria for clinical use and pre-first-episode preventative programs.

Medical Genetics

L. Erlenmeyer-Kimling, Ph.D.
Division Chief

The Division of Medical Genetics, with several research subdivisions, continues its long-term goals of elucidating genetic aspects and potential treatments of schizophrenia, bipolar disorder, Huntington's Disease (HD), suicidality and several other neuropsychiatric, and other medical disorders.

A key focus of the division is the identification and characterization of risk for psychiatric disorders, exemplified by a three decade-long study of individuals at high genetic risk for schizophrenia in which several early predictors to adulthood schizophrenia have been identified. Another concentration has concerned the search for and functional elucidation of genes underlying psychiatric disorders. Significant advances

RESEARCH DIVISION, *continued*

in this regard have included finding of the gene or gene region for HD, retinosis pigmentosa and several medical disorders with behavior and components among their symptoms.

In the Cognitive Electrophysiology Lab, new work using event-related functional imaging in an endeavor to localize brain regions involved in a variety of cognitive processes is expected to significantly increase information on these several populations. The Center of Prevention and Evaluation (COPE) continues to evaluate symptom trajectories, neural changes of biomarkers for psychosis risk, and exposures to stress and drug use.

Center for Neurobiology and Behavior

Eric R. Kandel, M.D.

Division Chief

The Center for Neurobiology and Behavior consists of 16 independent basic research laboratories in the Kolb Research Annex. The guiding research philosophy shared by the Center's faculty holds that an integrated approach, ranging from cellular and molecular biology to systems and behavioral analysis, is required to understand the basis of normal and abnormal human behavior.

Several ongoing projects may someday contribute to our understanding of the etiology of, and new therapeutic approaches to, addiction, anxiety, autism, benign-age-related memory loss, cerebral palsy, fragile-X syndrome, Rubinstein-Taybi Syndrome, schizophrenia, and spinal cord trauma.

Research in the Center focuses on several key areas: systems and cognitive neuroscience, learning and memory, and translational research. Major achievements in the Center this year include:

- The use of fMRI techniques to show that human emotional conflict is resolved through top-down inhibition of activity in the amygdala by input from the rostral cingulate cortex;
- The mouse-model discovery that a deletion of the gene encoding proline-dehydrogenase, a risk factor for schizophrenia, leads to alterations in transmitter release and synaptic plasticity in the hippocampus, potentially contributing to the defect in learning and memory;
- Identification of neurons in the parietal cortex that integrate information about the location of a task-relevant object with information about the action instructed by that object and with information about behavioral context.

Neuroscience

J. John Mann, M.D.

Division Chief

The Division of Neuroscience spans the research spectrum from basic cell biology to in vivo imaging, molecular genetics and treatment trials. It emphasizes translational research and employs a multidisciplinary approach to psychiatric research to examine the biological substrate of

mental illness at multiple levels. It is one of the largest at NYSPI and conducts a range of basic and clinical studies. Neuroscience has three sub-divisions. The Neurochemistry SubDivision spans basic molecular recognition studies to treatment studies. The Neuropathology SubDivision conducts neuroanatomical mapping, quantitative morphometric and gene expression studies in human, nonhuman primate and rodent brains. The Brain Imaging SubDivision conducts functional and structural brain imaging studies in rodents, baboons and human subjects, and the subdivision develops novel PET ligands for monoamine receptors, enzymes and transporters.

Neuroscience has four center grants. The NIMH-funded Silvio O. Conte Center for the Neuroscience of Mental Disorders: The Neurobiology of Suicidal Behavior investigates risk factors for suicidal behavior in mood disorders, schizophrenia, and personality disorders. The Stanley Medical Research Institute's Center for the Applied Neuroscience of Bipolar Disorders uses neurochemical postmortem studies to examine the neurobiology of bipolar disorders and to inform the design and goals of functional imaging studies in bipolar clinical studies. The third center, the Moody Center for the Study of Early Onset Bipolar Disorder, seeks to use functional MRI and genetics to detect early onset bipolar disorder as a step towards preventative intervention. The fourth center is the NIMH-funded Suicide Intervention Center.

Current major studies include a randomized, double blind study of the efficacy of a psychotherapy called dialectical behavior therapy versus an SSRI medication in the prevention of suicidal behavior in borderline personality disorder; a randomized trial comparing lithium and divalproex maintenance treatment on suicidal behavior in bipolar disorder; a study of the familial transmission of depression, suicidal acts and impulsive-aggressive traits; research on the synaptic underpinnings of schizophrenia; and studies of the fundamental neurochemical differences between suicide victims and mood disorder patients. The Division is continuing to study unipolar and bipolar depressed subjects before and after treatment with an SSRI or ECT, bipolar depressed subjects, suicide attempters and non-attempters, and healthy volunteers. These studies have generated important new data that for the first time demonstrate that many of our findings in postmortem human brain tissue can be detected in vivo in depressed subjects.

Personality Studies

Andrew E. Skodol, M.D.

Division Chief

The Division of Personality Studies conducts research on personality traits and disorders in collaboration with investigators from other research departments at Psychiatric Institute and other university departments of psychiatry. Personality disorders are important contributors to impairment in social and occupational functioning and high mental health treatment utilization. They also have negative prognostic effects on a variety of other mental disorders.

Members of the Division capitalized on the unique longitudinal perspectives of the Collaborative Longitudinal Personality Disorders Study

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(CLPS) to further elucidate the nature of personality psychopathology. Specifically, Drs. Skodol and Bender extended findings on the impact of personality disorders on psychosocial functioning and on treatment utilization, respectively, using longitudinal data over three years. Dr. Skodol also demonstrated the advantages of dimensional representations of personality psychopathology over categories in predicting associations with functional impairment. Dr. Markowitz showed how depressive personality disorder differed from dysthymic disorder over time.

Center for Psychoanalytic Training and Research

Robert A. Glick, M.D.

Director

The Center for Psychoanalytic Training and Research is the psychoanalytic institute within the Department of Psychiatry. In addition to participating in many of the department's and the university's educational, therapeutic, and research programs, the Center provides education and training in the theory and practice of adult and child psychoanalysis; conducts research in psychoanalysis, psychoanalytic education and applied psychoanalysis; collaborates in interdisciplinary scholarship related to psychoanalysis; and provides therapeutic consultation and high-quality, low-cost psychoanalytic therapy to individuals and families in the greater New York metropolitan area community.

Dr. Eve Caligor has been the principal investigator on a study that systematically documents Axis I and axis II disorders, depression and anxiety symptom severity, structural diagnosis, and identity and defense functioning of patients applying for analytic treatment. Dr. Deborah Cabaniss is involved in a systematic evaluation of education using standardized goals and objectives. She has also embarked on a study to determine the impact of these new goals and objectives on psychoanalytic education, entitled the multi-center assessment project (MAP).

Psychiatry, Law and Ethics

Paul S. Appelbaum, M.D.

Division Chief

The Division of Psychiatry, Law and Ethics was created with the arrival of Dr. Paul Appelbaum at the beginning of January 2006. With its creation, the Division assumed responsibility for forensic psychiatry training, including the Forensic Psychiatry Fellowship Program, which recruits two post-residency fellows per year, and instruction in issues related to law and psychiatry for psychiatry residents in their PGY II-IV years.

Dr. Appelbaum teaches seminars in informed consent and in mental health law at Columbia Law School, where he is an affiliated faculty member. The Division also hosts a monthly seminar in Psychiatry, Law and Ethics, open to all Psychiatric Institute faculty and trainees. Division personnel are heavily involved in ethics teaching at CUMC, including in the Center for Bioethics, Ethics and Policy Core of the HIV Center, and

in the newly formed Irving Institute for Clinical and Translational Research. The Division runs a Forensic Psychiatry Fellowship Program for two fellows per year, funded by the Office of Mental Health.

Research Assessment and Training

Jean Endicott, Ph.D.

Division Chief

Members of the Division of Research Assessment and Training are involved in a variety of research projects focused upon obtaining a better understanding of the diagnosis, evaluation of severity of symptoms and impairment in functioning, genetics, course of illness, and treatment of patients with mood disorders, schizophrenia, and substance use disorders.

Current research includes the investigation of the genetic, epidemiological, and clinical aspects of alcohol and drug use disorders; treatment of antepartum depression and premenstrual dysphoric disorders; the assessment of patients with major mental disorders, particularly schizophrenia and other psychotic disorders; mood and behavior along the menstrual cycle; and the sexual behavior of patients with bipolar disorders.

Dr. Endicott and staff began conducting clinical interviews in a long-term project involving multiple independent assessments of patients with treatment resistant major depressive disorder. Approximately half of the patients will receive Vagal Nerve Stimulation therapy while the remainder will receive treatment as usual. The long-term follow-up of the Collaborative Depression Study found that subsyndromal depressive symptoms of patients with bipolar I and bipolar II disorders are associated with significant psychosocial impairment and are predictive of relapse.

Social Psychiatry

Bruce P. Dohrenwend, Ph.D.

Division Chief

The Social Psychiatry Research Unit develops and sustains a program of research on important substantive and methodological issues in psychiatric epidemiology.

The Community Research Group (CRG) studies community-level processes that affect health and mental health. Its work has examined AIDS, crack cocaine, violence, tuberculosis, asthma and other epidemics that have shaped life in poor neighborhoods in the US.

Two main studies are being conducted in the Social Psychiatry Research Unit. One is an NIMH-supported continuation of research on the conceptualization and measurement of major stressful events over the life course; the second, also NIMH-supported, involves research on post-traumatic stress disorder (PTSD) in U.S. veterans of the war in Vietnam. Both are being continued with grants from an anonymous private foundation.

The Community Research Group has two major research projects with

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the Columbia Center for Youth Violence Prevention; one is examining the effect of a new youth center on street life in Washington Heights, and the second is examining the experiences of youth who are re-entering the community after incarceration.

Substance Abuse

Herbert Kleber, M.D.

Division Chief

Research in this Division focuses on antecedents and consequences of substance use and abuse, with particular emphasis on the development and testing of novel approaches to the treatment of substance abuse.

Our resources include non-human primate studies; separate human research laboratories for studying heroin and prescription opioid analgesics, methamphetamine, marijuana, nicotine, alcohol, and pain, all located in NYSPI; a cocaine human research laboratory located in the Irving Center General Clinical Research Center; an outpatient service (STARS) for clinical trials for new medications; a novel residential laboratory for studying a variety of workplace and other drug-related issues; and a regional Node in the NIDA Clinical Trials Network.

Our Division is supported by a number of NIH R01's as well as by a NIDA Medication Development Center that supports research using both laboratory models of substance abuse and traditional clinical trials research. A major strength of our Division is the ability to conduct initial safety and effectiveness studies using human laboratory models, with the results obtained then used to design our larger scale clinical trials. Our Division is also engaged in brain imaging research that is mapping neuroreceptors (particularly of serotonin and dopamine) in response to cocaine and heroin administration. We have recently added a novel clinical cognitive laboratory for the study of cognitive functioning in substance abusers and its relations to treatment outcome within our regional Node in the NIDA Clinical Trials Network.

Among the highlights of our work this year are the development of a laboratory model of heroin abuse, efficacy assessment of pharmacological treatments for depressed cocaine abusers, controlled laboratory studies and treatment trials on marijuana dependence and abstinence promotion, and studies of the effect of smoked marijuana in HIV+ populations. Dr. Margaret Haney completed an intensive laboratory study testing the effect of cocaine vaccine in cocaine-dependent volunteers, demonstrating that individuals who generate sufficient antibody in response to vaccination show a 60-80% decrease in the intoxicating effects of smoked cocaine, suggesting that immunotherapy is a promising approach for the treatment of drug dependence.

The Long Island Node of the NIDA Clinical Trials Network has completed six clinical trials, including a multi-site trial of buprenorphine for opiate dependence. It is now participating in three newly-initiated NIDA Trials and leading two nationwide multi-site randomized controlled trials of behavioral and risk reduction interventions for specific drug-dependent populations.

Our buprenorphine program, the first of its kind in the country, has

treated over 350 opioid dependent patients to date with most referred to physicians in the community and approximately 55 remaining at the Program for on-going maintenance.

Therapeutics

Donald F. Klein, M.D.

Division Chief

The Division of Therapeutics is comprised of four subdivisions that conduct research in mood, anxiety and related disorders.

Within the Depression Evaluation Service, co-director Patrick J. McGrath, M.D., was named as Regional Director for New York of the large NIMH effectiveness trial of the treatment of Major Depression (Sequenced Treatment Alternatives to Relieve Depression – STAR*D). Other ongoing studies include an exploration of the efficacy of several sequential treatments for refractory depression, collaborative neuropsychological studies of functional MRI testing in measurement of response to SSRI treatment, and studies of the relationship between aggression and substance abuse risk.

The HIV Clinical Research Program is currently conducting an NIH-funded, randomized trial of modafinil for the treatment of fatigue in HIV+ patients taking antiretroviral medication. Findings from a large, NIMH-funded double-blind randomized trial of DHEA for major depression, in which the Unit enrolled 145 HIV+ patients, were published in the American Journal of Psychiatry in January 2006.

The Anxiety Disorders Clinic includes programs in social anxiety disorder, obsessive-compulsive disorder, posttraumatic stress disorder and related traumatic conditions, generalized anxiety disorder, anxiety and depression in Hispanic Americans (Hispanic Treatment Program), pathological gambling, anxiety and depression. Current research includes studies of cognitive behavioral therapy to augment pharmacotherapy in obsessive-compulsive disorder, a multi-site study of CBT and paroxetine for social anxiety disorder, a pilot intervention for people affected by the 9/11 attacks, and a novel approach to help bridge the care of depressed Hispanic patients from primary care to specialty mental health services.

The Anxiety Genetics Unit's main goal is to understand genetic contributions to human anxiety and anxiety disorders. We are involved in both traditional family/linkage studies, and neurobiologically based "endophenotypic" and "translational" studies. Current family/linkage study projects include participation in a collaborative linkage study of panic disorder, a pilot study to assess the potential of an isolated population for the genetic study of panic, and continued analysis of our large anxiety disorder family study database to investigate possible familial subtypes of anxiety disorders. The focus of our endophenotype/translational work is on psychophysiological based paradigms involving associative learning of fear and safety.