

**CURRENT RESEARCH AND CURRICULUM**  
**DIVISION OF CHILD AND ADOLESCENT PSYCHIATRY**

**COLUMBIA UNIVERSITY (CU)**  
**NEW YORK STATE PSYCHIATRIC INSTITUTE (NYSPI)**



## OVERVIEW OF THE DIVISION OF CHILD AND ADOLESCENT PSYCHIATRY



### **Moira Rynn, M.D., Division Chief**

The Columbia University (CU) Division of Child and Adolescent Psychiatry has grown into one of the largest faculty and training programs in the United States. There are 57 M.D.s and 75 Ph.D.s in child psychiatry's faculty, as well as 12 postdoctoral fellows and 28 child psychiatry residents. The division consists of research investigators and expert clinicians who provide state-of-the-art evidenced-based treatments across the full range of childhood and adolescent psychiatric disorders, and a three-campus residency education and training program.

The federally-funded research activities of the division are focused on developing a better understanding of the underlying mechanisms of psychiatric disorders and developing effective assessment tools and interventions. The division's research program benefits greatly from national and international collaborations that bring together scientists from across many disciplines, and clinicians with diverse skill sets. Specific research interests include prevention of child and adolescent suicide, assessment and treatment of psychiatric conditions in childhood, clinical trials of psychotherapy and psychopharmacology, brain imaging, developmental neuropsychiatry, child-services research and screening, and epidemiology.

The division provides a variety of services for the community, including a Special Needs Clinic, a School-Based Mental Health Program, a Consultation-Liaison and Emergency Service, and pediatric-psychiatry subspecialty clinics that include the Interpersonal Psychotherapy Clinic, the Attention-Deficit/Hyperactivity Disorder Clinic, the Developmental Neuropsychiatry Clinic, the Evaluation Clinic, and the Learning-Disability Clinic. In addition, the division established a Center for the Promotion of Mental Health in Juvenile Justice and operates a Children's Day Treatment Unit, as well as the Columbia University Clinic for Anxiety and Related Disorders.

New York-Presbyterian Hospital (NYPH), in conjunction with the Departments of Psychiatry at the Columbia College of Physicians and Surgeons and the Weill Cornell Medical School, offers a two-year, fully accredited training program in child and adolescent psychiatry. This unique, bi-departmental training program accepts 12 residents each year. In addition, the program, in conjunction with the New York State Office of Mental Health and Queens Children's Psychiatric Center, accepts two additional residents each year in a specialized child psychiatry track. This specialized track meets all of the Residency Review Committee requirements in child and adolescent psychiatry, while providing more experience in the area of community and public psychiatry. We invite you to visit us on the New York-Presbyterian Hospital web site (<http://www.nyp.org/for-professionals/child-and-adolescent-psychiatry-residency-training-program>) to learn more about our program.

## A. CURRENT RESEARCH IN THE DIVISION

### **Boricua Youth Study Lab (BYSL)**

Directed by **Cristiane Duarte, Ph.D.**, this lab carries out a longitudinal study (now in its fourth wave) that originally enrolled about 2,500 children at two sites (South Bronx and San Juan). The public health relevance of the BYSL lies on its: (1) Early focus on high-risk, understudied youth: The first BYSL assessment was carried out in 2001, when the children were ages 5–13. In 2014, most of the BYSL cohort was within the ages of 17 and 25. For this reason, the BYSL can provide insights into the development of mental health problems in Latino youth that no other existing cohort we know of can. (2) Relevance to global mental health: The Puerto Rican site sample is the only child cohort focused primarily on mental health problems in Latin America. (3) General population sample retained over time: As the sample was drawn from the general population (as opposed to being a service- or school-based sample), highest-risk participants (who usually lack contact with formal institutions) are likely included. (4) Two-site design: The design permits the investigation of very sophisticated and relevant hypotheses about the role of different contexts in determining mental disorders, with high implications for interventions.

### **CARING at Columbia**

Directed by **Robin Snow, MPS, ATR-BC, LCAT**, CARING (Children at Risk: Intervention for a New Generation) at Columbia is a community-based prevention program focused on strengthening coping skills in children and adolescents through integrating psycho-educational and creative-arts methods (including visual art, music, and drama). In addition to our initial elementary-school-based manual, a CARING Head Start program manual, “CARING at Columbia Head Start: Promoting Resilience Through Creative Art and Play” by William C. Wu, M.D., and Robin Snow, was published this year. **Helena Duch, Psy.D.**, assistant professor at CUMC and CARING board member, is leading our preschool research project to assess the preliminary impact of a preventive parent-child, play-based intervention on key developmental outcomes essential to preschoolers’ healthy social-emotional development. Baseline data for this study have been presented at two national meetings: the Society for Research in Child Development (2013) and Head Start’s 12th National Research Conference on Early Childhood (2014).

### **Center of Prevention and Evaluation (COPE)**

**Ragy Girgis, M.D., Director:** The Center of Prevention and Evaluation (COPE) is an outpatient research program for teenagers and young adults experiencing changes in thoughts and feelings that have led to problems in relationships, school or work. Our research focuses on the causes and course of these symptoms. Individualized treatment is provided.

COPE was developed to provide a setting for the evaluation and treatment of *prodromal symptoms*. These are symptoms that develop relatively early in life (from childhood to young adulthood) and that resemble symptoms found in some psychiatric disorders but occur in individuals who do not have a definite psychiatric illness. In some individuals, these symptoms may represent the early stages of a disorder that will develop over time, while, in others, the symptoms seem to fade with time or remain mild, and no psychiatric illness develops.

COPE has three primary goals, reflecting our focus on both research and clinical treatment. Research goals include:

- Understanding the nature of prodromal symptoms, including their change over time and relationships between different symptoms
- Detailing the relationships between prodromal symptoms and a variety of clinical and biological features (such as family history, substance use or abuse, stressful life events and brain structure and function)
- Clarifying whether specific prodromal symptoms or patterns can help us predict which individuals with prodromal symptoms will eventually develop a full disorder

We believe that this work will help in the development of more specific and targeted treatments to reduce prodromal symptoms and to prevent the development of psychiatric disorders in those individuals at highest risk.

### **Center for Autism and the Developing Brain (CADB)**

**Jeremy Veenstra-VanderWeele, M.D.:** Dr. Veenstra-VanderWeele’s molecular lab focuses on the serotonin, oxytocin, and glutamate systems in genetic mouse models related to ASD and OCD. While developing a molecular neuroscience research program, he also built a clinical/translational research program to study new treatments for ASD and Fragile X Syndrome. He moved both arms of his research program to Columbia University, NYSPH, and the NewYork-Presbyterian Hospital Center for Autism and the Developing Brain (CADB) in 2015 to continue to pursue novel treatments for children with these challenging conditions. His molecular lab is following up on some intriguing findings, including an unexpected impact of the maternal serotonin system on the developing embryonic brain. They are also studying the impact of an OCD-associated glutamate transporter on repetitive behavior in mice. His CADB translational medicine group is currently conducting an NIH-funded trial of intranasal oxytocin in children and adolescents with autism spectrum disorder.

### **Center for the Promotion of Mental Health in Juvenile Justice**

**Gail Wasserman, Ph.D., and Larkin McReynolds, Ph.D.,** collaborate on evaluating services along the continuum of behavioral healthcare for youth in the juvenile justice system. For the past year, we have participated in NIDA’s JJ-TRIALS activities, along with five other research centers, to develop and implement a plan to investigate the most effective ways to promote access to behavioral health services for substance-using youths in community justice settings. We are evaluating the results of a two-year collaboration with Illinois justice authorities examining service access and the efficacy of systematic screening for self-injury status. Based on data in our national archive, we recently worked with a visiting scholar to write three papers on the mental health correlates of juvenile and adult re-offending and on the mitigating consequences of a mental health referral.

Dr. Wasserman continues work with colleagues in the SPH on the consequences for children of environmental arsenic exposure in Bangladesh. A successful renewal has allowed for the innovative use of computerized neuropsychiatric assessment for adolescents in that cohort. A more recent application will consider exposure and nutritional features in relationship to cognitive development.

### **Child Psychiatric Epidemiology Group (CPEG)**

The CPEG, led by **Christina Hoven, Dr.P.H., M.P.H.,** focuses on understanding the development of psychiatric disorders by studying children as they mature and into adulthood. Epidemiological research, primarily longitudinal, is conducted by the CPEG both nationally and internationally. The purpose of the

investigations is to produce population-based knowledge that is generalizable, inclusive of underserved and high-need groups, especially those of high public health relevance. With CDC funding, and in collaboration with the NYC DOH WTC Health Registry, we are currently studying the consequences to children who were directly exposed to 9/11 when they were 0–18 years of age and their controls. A birth cohort from 9/11–exposed pregnant women is currently being assembled. These populations, in combination with our existing cohort of children whose parents were directly exposed to 9/11, are expected to provide an unprecedented view of child psychiatric disorders, including the possible transmission of trauma. CPEG is also conducting a large imaging study focused on specific decision-making tasks by children whose parents are substance abusers.

The CPEG is actively involved internationally, most recently in Israel, Taiwan, Zimbabwe, Tajikistan, Jordan and South Korea, in addition to 11 European countries, including 4 in Eastern Europe. The foci of these often large-scale epidemiological investigations vary, but always have the psychological wellbeing of children as a primary agenda, and include randomized control trials (RCT), examination of factors related to suicide and deliberate self-harm, and childhood trauma resulting from war.

### **Columbia University Clinic for Anxiety and Related Disorders (CUCARD)**

Directed by **Anne Marie Albano, Ph.D.**, CUCARD is a specialty clinic specializing in delivering empirically-supported cognitive-behavioral therapies for children, adolescents, and young adults suffering from anxiety or anxiety-related disorders.

In the past year, CUCARD received two \$25,000 gifts from private donors and a new \$40,000 gift. Part of these gifts are designated for the “Launching Emerging Adults Program (LEAP),” a new clinical program with a research component in the pilot stage, focused on the development of treatments for transition-aged youth with anxiety and mood disorders. In this first phase of manual development, feasibility, acceptability, and treatment procedures are being developed and will be tested in a small, open pilot. Funds for staff development will be directed towards specialized training of our anticipated faculty members in parent-child interaction therapy.

In addition, CUCARD is celebrating its 10-year anniversary, and, through the generosity of families who have been served at the clinic, a fundraising effort is underway. The clinic is undergoing renovation and expansion as a result of this effort.

**Research:** The Child/Adolescent Anxiety Multimodal Extended Long-Term Follow-Up Study (CAMELS) (Principal Investigator, **Anne Marie Albano, Ph.D.**; Co-Investigator, **Moira Rynn, M.D.**; linked multicenter R01 “Long-term follow-up of treatments for childhood anxiety disorders”): We are now completing the no-cost extension and data analyses of a 5-year study following up the sample of children and adolescents who presented for the Child/Adolescent Anxiety Multimodal Study (2008).

### **Communication Sciences**

Directed by **Beatrice Beebe, Ph.D.**, this lab is dedicated to the microanalysis of human communicative behavior. Our research program investigates the dyadic mechanisms organizing mother-infant social communication, the role that infant and maternal distress plays in this communication, the effects of early mother-infant communication patterns on emerging infant and childhood attachment styles, and the long-term continuity of communication and attachment styles from infancy to young adulthood.

***Follow-Up Study from Infancy to Adulthood:*** We are collaborating with Drs. Miriam and Howard Steele, New School for Social Research, and Dr. Karlen Lyons-Ruth, Harvard Medical School, following up a community sample of mother-child dyads, collected in infancy from 1985 to 1989, and seen again now as the offspring turn 21–25 years old. Data collection on this study remains ongoing.

***Pregnant and Widowed on 9/11:*** This clinical/research project follows a cohort of 30 women who were pregnant and widowed on September 11, 2001, and whose first visit occurred in 2002–2003 (infants ages 4–18 months). The clinical project is conceptualized as primary prevention. The research project compares mother-infant interaction of the 9/11 families with a community sample.

***High-Risk NICU Intervention:*** We are collaborating with Drs. Michael Myers, Martha Welch, and Howard Andrews on the project “Multifaceted NICU Nurture Intervention: Biopsychosocial Impact on Infant and Mother.” Preliminary findings document significant differences between the high-risk NICU group and a community sample, as well as differences between the intervention vs. control infants within the NICU sample.

***Precursors of Nonverbal Learning Disability:*** Using microanalysis of nonverbal communication in 4-month mother-infant interactions to understand the precursors of Nonverbal Learning Disability Dr. Beebe is collaborating with Dr. Amy Margolis, with a small grant, to identify individual differences in processing speed in four-month infants as they interact face-to-face with their mothers in facial expression and gaze.

***Prenatal Endocrine-Disrupting Chemicals and Social/Cognitive Risk in Mothers and Infants: Potential Biologic Pathways:*** We have begun collecting pilot subjects for a grant submission with the above title. This work is in collaboration with Julie Herbstman, Ph.D., Department of Environmental Health Sciences, Mailman School of Public Health, Columbia University; Virginia Rauh, ScD, Heilbrunn Department of Population and Family Health, Mailman School of Public Health, Columbia University; Frances Champagne, Ph.D., Department of Psychology, Columbia University; Amy Margolis, Ph.D., Columbia Center for Children’s Environmental Health, Mailman School of Public Health; NYSPI.

### **Developmental Neuroscience Lab**

The Developmental Neuroscience Lab, led by **Amir Levine, M.D.**, is interested in utilizing molecular approaches to find translational tools that will improve psychiatric treatment, gain a better understanding of the effect of environmental exposures on adolescent brain development, and decipher the role of social involvement in health and longevity. Below is a short summary of each area of interest.

***Adolescent Brain Development:*** Our research focuses on molecular regulation of various mental states, with a special interest in the molecular processes that are unique to the adolescent brain and, especially, how experiences in adolescence shape adult phenotypes. To this end, we are using PET imaging to explore, in rats, in vivo, the effect of exposure to various substances on shaping the adult brain. We are also interested in modeling how the use of puberty-suppressant medications in adolescence may affect the adult brain.

***Precision Medicine and Biomarker Research:*** Our work seeks to characterize molecular signatures in small extra cellular vesicles in the blood that may be able to point at specific emotional states and

predict treatment outcomes. We are pursuing this in various patient populations, including a clinical trial evaluating treatment response to SSRIs by children, adolescence, and young adults and people who are addicted to opiates. We have also established a unified protocol for the collection and storage of biospecimens to be used by other investigators.

***The Role of Social Involvement in Health and Longevity:*** Attachment has been shown to play a key role in an infant's survival, yet the systems involved in attachment processes remain important to health and longevity throughout life. We are interested in studying the mechanisms by which social involvement in adulthood affects health. To do this we take a reductionist approach that utilizes animal models to investigate the effects of social involvement on stress response and behaviors related to health and longevity as well as conduct a study in humans and their response to fear in the presence and absence of a companion.

### **Developmental Neuropsychiatry**

The Developmental Neuropsychiatry Scholar Award Program, co-directed by **Agnes Whitaker, M.D. and Jeremy Veenstra-Vanderweele, M.D.**, provides intensive mentoring, salary, and resource support for recently graduated child psychiatrists and others interested in the overlap of mental health problems and developmental disabilities such as autism.

Dr. Whitaker has convened a workgroup of junior and senior faculty from Child and Adolescent Psychiatry and Pediatrics (Neonatology) interested in studying attention-deficit/hyperactivity disorder (ADHD) and autism-spectrum disorders (ASD) in a cohort of low-birth-weight/preterm survivors. This group assists interested Scholars in conducting secondary analyses related to those interests.

Dr. Whitaker has also organized a workgroup of faculty to design and implement a project entitled the Mental Health and Developmental Disabilities Awareness Project (MDAP). The project seeks to improve awareness of the special needs of persons with dual diagnoses across all levels and sectors of the health service delivery system, with a special focus on outpatient and emergency room care.

### **Division of Translational Imaging**

The area of research of the Division of Translational Imaging (DTI) (Director to be named in July) at NYSPI (closely affiliated with the Division of Child and Adolescent Psychiatry) is the development of novel tools and techniques to study neurotransmission in the living human brain, and the application of these techniques to clinical studies to unravel chemical imbalances associated with severe mental illnesses and drug addiction. Molecular imaging techniques based on positron emission tomography (PET) are the main methods developed and used in the division. The imaging approach has a translational emphasis, using imaging to identify phenotypes that can be tested in animal models or vice versa using models derived from preclinical knowledge to be tested in clinical populations.

Clinical investigations within the Division focus on schizophrenia, cannabis dependence and comorbidity with schizophrenia, MDMA dependence, design of paradigms to assess dopamine release in response to alcohol challenge and reward related tasks, identification of biomarkers for disease prevention or drug discovery and aid in drug development. Additionally, the Division performs imaging studies in collaboration with other investigators who specialize in the study of various disorders.

The Division also trains fellows in the acquisition of the expertise and skills required for clinical investigation using PET, with focus on basic receptorology, neurochemistry, pharmacology and pharmacokinetics, in depth teaching of PET imaging, functional neuroanatomy, kinetic analysis on a region or voxel based approach, as well as general principles of clinical investigation (CGMP, statistics, drafting of IRB protocols).

### **Methodology and Measurement Group**

**Prudence Fisher, Ph.D., J. Blake Turner, Ph.D., and David Shaffer, M.D.:** In addition to providing open-door expert consultation on methodological and measurement/assessment issues and teaching a summer course in research methods, this group is working on projects that focus on three areas: nosology, measurement development, and suicide.

**Nosology:** Drs. Prudence Fisher (PI), J. Blake Turner (PI), and David Shaffer (Co-PI) are analyzing the data from a large study in which they compiled a database of diagnostic and symptom data collected by 16 investigations of youth (approximately 19,000 youth, with longitudinal data on many of these) to examine nosological issues in child psychiatry. They analyzed data from this archive to inform some of the DSM-5 decisions. They are currently using the data to examine whether the diagnosis of suicidal-behavior disorder (SBD) (currently in Section 3 of DSM-5) meets the standards for inclusion when applied to youth, as well as to determine which symptoms are most likely to cause impairment in children with various disorders.

Drs. Turner and Fisher, with Joel Nigg, Ph.D. (Oregon Health and Science University), undertook analyses on five widely variable existing datasets (some from representative samples, others from clinical samples) that contained data on adults to examine diagnostic criteria for ADHD specific for adults. These analyses are being written up.

With funding from the NVLD Project, Dr. Fisher is taking the lead in preparing a proposal to include NVLD as a diagnosis in the next revision of DSM-5 (DSM-5.1).

**Measure Development:** Funded by a small contract from the CDC, Dr. Fisher is preparing a revision of the Diagnostic Interview Schedule for Children (DISC), the most widely used of the diagnostic interviews for youth, to address the DSM-5 criteria. The DISC is a fully structured diagnostic interview designed to be administered by interviewers without advanced clinical training. Many faculty in the division (Drs. Anne Marie Albano, Laurence Greenhill, Moira Rynn, and David Shaffer), as well as those from NIMH and other institutions, serve as advisors on the project. Cognitive interviewing and limited psychometric testing will be carried out in the next several months.

In addition, Dr. Fisher continues to work on further development of the Columbia Health and Adverse Reactions to Medication Screen (CHARMS), a computerized screening instrument for assessing adverse events.

**Suicide:** Dr. Shaffer (PI), with Dr. Regina Miranda, carried out a study entitled, "Stressful events and mood states preceding suicide attempts in adolescents," with funding from the Carmel Hill Foundation. This study obtained information about the content, context, and duration of suicidal thoughts just prior to a suicidal attempt. Many teenagers think about suicide, even though the rate of suicidal death at that age is rare. The aim of the study was to examine the contextual factors (e.g., events, mood, and

cognition) occurring on the day that an adolescent makes a suicide attempt or has suicidal ideation that is severe enough to warrant an emergency room visit. This study is currently being written up.

**Other:** Drs. Fisher, Shaffer and Turner are working with Dr. Yuval Neria from the Division of Therapeutics on a novel investigation examining the efficacy of using equine-assisted therapy in treating veterans with PTSD.

### **Neuroimaging**

**Rachel Marsh, Ph.D.**, is using multimodal MRI to study the development of neural circuits that support self-regulatory capacities, learning, and memory in healthy individuals and in those with psychiatric disorders that arise in childhood and adolescents. She is currently conducting a longitudinal MRI study of adolescents with bulimia nervosa aimed at understanding how the abnormal development of specific neural circuits might contribute to the persistence of the disorder. In collaboration with Drs. Simpson and Rynn, Dr. Marsh is also conducting studies of adults and children with obsessive-compulsive disorder (OCD). Those studies are aimed at identifying circuit-based changes associated with the remission of symptoms following CBT in OCD. Dr. Marsh's lab is also conducting MRI studies of children with learning disabilities, specifically dyslexia and nonverbal learning disability.

**Jonathan Posner, M.D.:** Dr. Posner's laboratory uses multimodal neuroimaging strategies (e.g., structural and diffusion MRI; resting-state and multiband event-related BOLD fMRI) to address research questions in a number of psychiatric diseases, including ADHD, depression, anxiety, and anorexia nervosa. Current research in his laboratory focuses on: understanding how a randomized clinical trial of stimulants alters circuitry underlying emotional and reward processing, impulsivity, cognition, and aggression in youth with ADHD; unveiling how serotonin transporter (SERT) polymorphisms (or deletions) alter brain development in rhesus macaque monkeys as well as transgenic mice; understanding how gene (e.g., COMT or SERT SNPs) by family history (i.e., people at either low or high risk for depression) interactions influence connectivity within circuits underlying reward as well as emotional processing; elucidating the effects of two SNRI treatments for chronic depression/dysthymia on brain structure and connectivity in two randomized control studies; investigating potential differences in structure and connectivity between people with chronic depression and healthy controls with either high or low familial risk for depression; and investigating the pathophysiology of youth anxiety disorders (i.e., generalized anxiety disorder) as well as anorexia nervosa.

### **Pediatric Anxiety and Mood Research Clinic, the Child and Adolescent Psychiatry Evaluation Service, and Children's Day Unit (Moira Rynn, M.D., Director, Pablo Goldberg, M.D., Medical Director)**

The **Pediatric Anxiety and Mood Research Clinic**, conducts research on the development and improvement of treatments for youth, with a focus on obsessive-compulsive disorder (OCD), anxiety and depression. Through an NIMH-funded trial, the group is assessing the potential clinical benefit of adding minocycline to antidepressant treatment in youth with OCD. This study is paired with magnetic resonance spectroscopy (MRS) in order to examine the potential underlying mechanism of action. A second trial examines the feasibility and efficacy of ketamine as a rapid OCD treatment for adolescents and young adults. Additionally, in collaboration with the Neuroimaging Lab, the group is examining the structure, function, and connectivity of control and reward circuits in children and adolescents with OCD. The study will also assess circuit-based changes following a course of cognitive behavioral therapy

(CBT). Two other trials target anxiety and depression. The aim of one is to identify biological markers (in blood, saliva, or urine) that predict treatment response to SRI medication for anxious youth and young adults. The other focuses on identifying how interpersonal psychotherapy for adolescents (IPT-A) with depression affects sleep and related biological markers.

The **Child and Adolescent Psychiatry Evaluation Service (CAPES)** provides expert evaluations of children ages from 5 to 21 years old and all services are free of charge. A typical visit to the service is preceded by a detailed interview with the family by phone. The family then meets with a psychologist and an advanced psychology trainee for a full evaluation. The CAPES medical director (Pablo Goldberg, M.D.) reviews each case with the clinical team. The family is given immediate feedback, which is followed up with an extensive written report. A number of children qualify for IRB approved research studies underway at NYSPI and Columbia University, and families can participate in research if they wish, but it is not a requirement for a CAPES evaluation.

Finally, for youth in research studies and from the larger community who need a more intensive level of care or extended evaluation, the **Children's Day Unit** at NYSPI provides a day treatment program, offering a 5 day/week therapeutic milieu including a NYC Department of Education staffed classroom, group, individual, and recreational therapies, medication management, and family psychoeducation and support. Again, all services are free of charge.

### **Psychotherapy Research in Child and Adolescent Mood Disorders**

**Laura Mufson, Ph.D.:** Dr. Mufson's research focuses on transporting empirically supported psychotherapies into community settings to increase adolescent access to care, as well as the use of technology to change clinician behavior and increase engagement in treatment. She is involved in studies adapting the prevention model of IPT-AST for adolescents at risk for depression and anxiety and reporting high levels of peer victimization. The group treatment targets both the depression and anxiety symptoms that can accompany the experiences of being teased and bullied by peers. The treatment is being conducted in schools in Miami, Florida. Dr. Mufson continues to study the use of a motivational-engagement strategy plus IPT-A for black adolescents being treated in school-based mental health clinics in Baltimore city schools to decrease stigma and enhance engagement in evidence-based treatment. Dr. Mufson is also continuing to study a stepped-care model of adolescent depression treatment in pediatric primary care to further target the problems of access to mental health care and stigma for depressed minority adolescents. In addition, she is collaborating on an adaptation of IPT-A for adolescents with learning disabilities and sub-syndromal depression and anxiety (conducted in Tel Aviv, Israel). Along with a postdoctoral fellow, she is studying the adaptation of IPT-A to address the sleep difficulties of depressed adolescents, with the goal of improving rates of treatment response and recovery.

### **Suicide Epidemiology**

**Dr. Madelyn Gould:** Current projects in her research unit focus on the evaluation of suicide-prevention strategies, including telephone crisis services, chat crisis services, continuity-of-care enhancements in EDs, and youth suicide screening programs. She is also examining suicide risks related to contagion and modeling, with a specific focus on cluster suicides and the effect of a peer's suicide on fellow students.

*National Suicide Prevention Evaluation:* The project will evaluate three critical priorities of the National Suicide Prevention Lifeline: (1) clinical follow-up of suicidal individuals who have received care from

emergency departments (EDs) and hospitals; (2) interventions using emerging technologies, specifically chat interventions; and (3) callers at imminent risk of suicide. The evaluation of centers engaged in clinical follow-up of suicidal individuals discharged from EDs will involve a quasi-experimental design using multiple comparison groups/conditions. The evaluation of the impact of chat interventions will involve coding a random sample of de-identified transcripts of chat interventions with suicidal “visitors” provided by the 26 crisis centers in the “Lifeline Crisis Chat (LCC)” network over a two-year period. The primary purpose of the evaluation of callers at imminent risk is to provide a profile of these Lifeline callers deemed to be at imminent risk and assess the interventions implemented with these callers.

*Emergency Department Screen for Teens at Risk for Suicide (ED-STARs):* To improve the identification of youth at risk for suicide (in response to RFA-MH-14-070, Pediatric Suicide Prevention in Emergency Departments), a multi-site collaborative project has been proposed with the Pediatric Emergency Care Applied Research Network (PECARN) and the Whiteriver PHS Indian Hospital. We will follow-up a subsample of 30% of these youth, enriched for suicide risk factors, at 3 and 6 months. Our specific aims are to: (1) develop a computerized adaptive screen (CAS) for predicting suicide attempts; (2) compare the psychometric properties (e.g., sensitivity, specificity) of the CAS to those of a standard screen, the Ask Suicide-Screening Questions (ASQ); (3) test the ability of the Implicit Association Test (IAT), a behavioral test of implicit suicidal cognitions, to add incrementally to the prediction of suicide attempts above and beyond screening scores; and (4) develop and validate a parsimonious CAS-based algorithm for risk stratification to facilitate the triage of youths. In Study 2, we will recruit a new sample of 2340 youth (stratified by suicide risk factors), administer the CAS and ASQ, and follow-up youth at 3 months with interviews and medical chart reviews. Our Study 2 aim is to validate the specificity and sensitivity of the CAS and ASQ for predicting suicide attempts. The optimal screen developed in this collaborative project will have the potential to be disseminated nationwide to enhance the capacity of emergency departments to identify and effectively triage youth at acute risk for suicide attempts.

### **Koplowitz Fellowship Program**

Ian A Canino, M.D., Coordinator: The Alicia Koplowitz Foundation was established in 2005 in Spain. Its primary goal is “to take care of, protect, and defend children when basic needs are lacking.” It also supports child and adolescent mental health care in Spain through training and research programs in the field of child and adolescent psychiatry. Its research fellowship offers two-year grants in the United Kingdom and the United States to Spanish investigators or research teams (psychologists and/or psychiatrists) in order to acquire skills in scientific research in the fields of child and adolescent psychology and psychiatry. Examples of the investigative projects of fellows who have attended our Division at Columbia University are:

#### **Olga Santesteban, Ph.D. (2012-2014):**

Research Project: “Effects of Transitions in Parent Formation on Their Children’s Diagnosis” (PI: Cristiane Duarte, M.D., Ph.D.): This project studies how changes in marital status or family formation affect the development of the children in that family (measured as their final diagnosis), utilizing data from the Boricua study.

#### **Caridad Benavides Martinez, M.D. (2013-Present):**

Research Project: During Dr. Benavides’ time within the Division of Child and Adolescent Psychiatry, she has been working with her assigned research team at the Translational Imaging Department (Director,

Anissa Abi-Dargham). In addition, she is working with her team in the recruitment and scanning of neuromelanin sequences for 30 subjects, with Dr. Guillermo Horga as her mentor.

## **B. CHILD FELLOWSHIP CURRICULUM**

### **DIDACTICS GOALS AND OBJECTIVES**

Courses are chosen by the faculty with the purpose of providing critical medical knowledge and scientific grounding in research and clinical care. As such, attendance at classes is a required element towards establishing core competency in child and adolescent psychiatry. Readings should be reviewed prior to class.

#### **FIRST YEAR**

##### **Community Psychiatry: Culturally Diverse and Special Populations (CUMC)**

**Director: Ian Canino, M.D.**

This is a course with invited speakers that addresses relevant issues affecting urban, culturally diverse, and special populations of children and adolescents. Issues of culture, assessment, systems of care, ethics, and policy incentives are discussed.

##### **Development/Psychopathology (CUMC/PWM)**

**Coordinators: Rebecca Rendleman, M.D., Oliver Stroeh, M.D.**

- Comprehensive overview of the current understanding of most major pediatric psychopathologic disorders, including prevalence, etiology, clinical features, and treatment approaches
- General survey of major theories of development and applicability to social, emotional, and cognitive development of children

##### **Fundamentals of Therapeutics (CUMC/PWM)**

**Coordinators: Anne Marie Albano, Ph.D., Laurence Greenhill, M.D., Anne McBride M.D., Margaret Yoon, M.D**

- Understanding the fundamental components of all psychotherapy and pharmacotherapy with children, adolescents and families, including, but not limited to, therapeutic alliance, diagnostic assessment, case formulation, comprehensive treatment planning, motivational enhancement, appropriate involvement of parents, and termination.
- Overview of principles of clinical pediatric psychopharmacology, including clinical pharmacokinetics, ethical and legal issues, indications, desired, adverse effects and drugdrug interactions.
- Ways in which therapeutic technique of is affected by developmental age, clinical setting, socio-cultural factors,
- Appreciation for the complexity of psychopharmacological approaches in child and adolescent psychopathology

## **Developmental Neuroscience Lecture Series (PWM)**

**Coordinator: B. J. Casey, Ph.D.**

- Comprehensive overview of the current understanding of the neurobiological basis of major pediatric psychopathologic disorders, including genetic and environmental factors and recent developments in bio-behavioral markers for diagnosis and treatment
- General survey of major neurobiological theories of development and applicability to emotional and cognitive development of children and adolescents

## **SECOND YEAR**

### **Adolescent Substance Abuse (CUMC)**

**Directors: Greg Tau, M.D., Ph.D.; Shannon Caspersen, M.D.**

This course is a combination of a lectures series on substance abuse and observations of a therapeutic community for chemically dependent adolescents (including a family meeting and an adolescent encounter group).

### **Forensics**

**Directors: Megan Mroczkowski, M.D.; Maria Master, M.D., J.D.**

This course is a combination of a reading seminar, didactic lectures, and mock trial that begins at the end of the first year. The reading seminar reviews forensic psychiatry, child custody, civil litigation, and the juvenile justice system. Activities are scheduled in the summer of the second year and throughout the year at PWM.

### **Introduction to Research Methods and Statistics (CUMC)**

**Directors: Prudence Fisher, Ph.D.; J. Blake Turner, Ph.D.**

In each session, two residents, in turn, discuss articles that they have selected in consultation with their assigned faculty discussants. Each journal-club session is guided by a relevant topic in child psychiatry. The journal club exposes residents to important publications in the field of child psychiatry and provides practice in the skill of critical appraisal of the literature.

### **Advanced Pediatric Psychopharmacology Seminar (CUMC)**

**Director: Kareem Ghalib, M.D.**

This course reviews the neurobiology of pediatric disorders and the pharmacological targets of psychotropic medications. All of the major pediatric psychopharmacology clinical trials are reviewed in a seminar format. Each resident is assigned a seminal paper to prepare to present to colleagues for discussion.

### **Community Psychiatry: Culturally Diverse and Special Populations (CUMC)**

**Director: Ian Canino, M.D.**

This is a series of lectures with invited speakers that address relevant issues affecting urban, culturally diverse, and special populations of children and adolescents. Themes as varied as substance abuse, school consultation, and AIDS are presented. Issues of culture, assessment, ethics, and policy incentives are discussed. Specific clinical and research interventions for African American, Asian American, and Hispanic American children are reviewed.

### **Empirically Supported Therapies (CUMC)**

**Director: Laura Mufson, Ph.D.**

This course provides a review of the major studies of psychotherapy for child psychiatric disorders, including anxiety, depression, ADHD, and CD. Residents are provided with teaching in the major empirically supported therapy techniques for anxiety and depression, including CBT and IPT.

### **Psychodynamic Psychotherapy with Children and Adolescents (CUMC/PWM)**

**Directors: Oliver Stroeh, M.D.; John Burton, M.D.; Andrew Gerber, M.D., Ph.D.**

- The theory of therapeutic action of psychodynamic psychotherapy with children and adolescents, which states that the working through of defenses can help get a child or adolescent back on track developmentally
- Across developmental stages, typical defenses, areas defended against, and common intrapsychic challenges
- Across developmental stages, the effects of learning disabilities on defenses

### **Professional Development Series (CUMC)**

**Director: Oliver Stroeh, M.D.**

This series provides the second year fellow with panel discussions regarding academic/ administrative; research and clinical practice careers over the summer; in the Spring of the second year fellows are provided with a series on risk management in conjunction with the APA endorsed risk management program.

### **Journal Club (PWM)**

**Coordinator: Rebecca Rendleman, M.D.**

In each session, two residents select and present an article on a relevant topic in child psychiatry, guided by a selected faculty discussant. The Journal Club exposes residents to important publications in the field of child psychiatry and provides practice in locating, appraising, and assimilating scientific literature.

### **Reading Seminar (PWM)**

**Director: Theodore Shapiro, M.D. (PWM)**

The reading seminar provides an opportunity for residents to review concepts as they have developed historically in the area of development and child psychiatry through the review of classical and modern literature. Several residents will be assigned articles to read, summarize, and present during class to stimulate discussion. The second half of the allotted time is devoted to a continuing case conference geared for the more advanced resident.

## **C. SEMINARS FOR RESEARCH FELLOWS**

**T32 Seminar:** This seminar is organized for post-doctoral research fellows in the Division. It addresses practical topics that include grant writing, design and methodology, animal models, grant submission protocols, rare variants and statistics.

**Introduction to Biostatistics** (September-December): This course is organized by the Mailman School of Public Health at Columbia University, Biostatistics Department. It covered basic concepts related to

statistical principles.

**Biostatistical Analysis using SPSS:** This course is designed for students and researchers who want to gain a significant familiarity in performing data analysis using SPSS.

**I Applied Regression:** This course provides an introduction to the basics of regression analysis. The class proceeds systematically from the examination of the distributional qualities of the measures of interest, to assessing the appropriateness of the assumption of linearity, to issues related to variable inclusion, model fit, interpretation, and regression diagnostics.

**Introduction to Statistics:** Main campus. Prerequisites: Intermediate high school algebra. Designed for students in fields that emphasize quantitative methods. Graphical and numerical summaries, probability, theory of sampling distributions, linear regression, analysis of variance, confidence intervals and hypothesis testing. Quantitative reasoning and data analysis. Practical experience with statistical software.

**Empirically-supported Psychotherapies:** Directed by Laura Mufson. This weekly course covers all psychotherapies that have shown empirical evidence in randomized clinical trials. It is taught by specialists in empirically-based psychotherapies that present the core principles of CBT, DBT, IPT-A, and other evidence-based psychotherapies.

**Statistics and Research Design for Fellows:** Coordinated by Dr. Maria Rodriguez, this is a weekly seminar organized for research fellows where faculty members are invited to present on various statistical core concepts.

**fMRI course:** Organized and taught by Alayar Kangarlu, this course spans three months of weekly classes that teach the principles and core basis of fMRI, and the data processing and analysis used for this technique.

**MRI RA Safety course:** This training session is intended for new RAs to grant a yellow badge status. It covers MRI safety as well as various policies and procedures.

**SPSS Beginners class:** This course is designed for students and researchers who want to gain a significant core in performing data analysis using SPSS. (July and August)

**Excel Beginners class:** This course teaches the basics of Excel software and different applications in research. (July and August)

**Statistics and Research Design for Fellows:** Coordinated by Dr. Maria Sullivan, this is a weekly seminar organized for research fellows in which faculty members are invited to present on various statistical core concepts.

**tMRI course - part II:** Organized and taught by Alayar Kangarlu, this course is taught weekly over three months. Students learn the principles and core basis of fMRI and the data processing and analysis used for this technique.

***Statistical Analysis of fMRI:*** This is a web course that explores the intersection of statistics and functional magnetic resonance imaging. It discusses analysis of fMRI data, from its acquisition to its use in locating brain activity, and teaches students to make inferences about brain connectivity, and predictions about psychological or disease states.



## **PROPOSAL OF COLUMBIA UNIVERSITY**

In terms of your categories let me try to address them:

### **1. Research:**

- a. the research projects available are in the Current Research section of the manual.
- b. the activities in which the fellows will be involved will vary according to the project they may wish to participate in and the stage at which the particular project is at. Some of the activities may include data collection, analysis, interpretation, and/or publication.
- c. Statistical support will vary according to the fellows own skills, the project own resources and the questions asked. In the past we have been mostly able on a case by case basis to supply courses or trained staff.
- d. We usually individualize this according to the fellows interests and goals. They have access to the curriculum opportunities described in the manual but we assume that the largest portion of their time will be spent in research activities.

### **2. Clinical:**

As you know we are not permitted to involve the Koplowitz fellows in any clinical activity. We have a preventive pre school educational program with a research arm which some of the fellows have joined in the past.

### **3. Academic:**

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- a. The fellows have access to the seminars described in the Manual. Many of these are part of the Child and Adolescent Psychiatric Fellowship Program or seminars created for our own Post Graduate fellows. In addition the fellows can attend seminars, meetings and workshops as long as this does not interfere with their assigned projects.
- b. The budget assigned to the fellows for outside training will vary according to the registration ,travel, meals and housing costs and is highly dependent on the Division expenses for administrating the fellowship program.
- c. The fellows are assigned a research mentor which is involved in their Research Project and an overall supervisor that integrates and facilitates their experience in the Division.