



CELEBRATING 25 YEARS
OF THE RUANE PRIZE
FOR OUTSTANDING ACHIEVEMENT IN
CHILD & ADOLESCENT PSYCHIATRIC RESEARCH

2024 FRIDAY, OCTOBER 25TH

We are delighted to be celebrating the 25th anniversary of the Ruane Prize for Outstanding Achievement in Child & Adolescent Psychiatric Research. We thank The Carmel Hill Fund who have been generously funding this Prize since its inception.

– *The Board of Directors*
The Brain & Behavior Research Foundation

THE RUANE PRIZE

In the early years of the Brain & Behavior Research Foundation, BBRF's Scientific Council, at the suggestion of Stephen and Connie Lieber, created a series of annual prizes and awards for outstanding achievement in fields pertaining to mental health. In the words of Steve Lieber, "these awards were to be 'Nobel equivalents' to call attention to vital accomplishments in an area long under-recognized by both the public and the scientific and medical establishment."

The Ruane Prize was initiated in 2000 by philanthropists Joy and William Ruane to recognize important advances in understanding and treatment of early-onset brain and behavior disorders. This prize carries an award of \$50,000 and the winner(s) is honored at BBRF's annual International Awards Dinner in New York City.

The Carmel Hill Fund is focused on helping young people in New York City, especially those growing up in vulnerable circumstances, become voracious readers who also have the skills, relationships, nurturing environments, and supports to thrive emotionally.

"Since 2000, The Carmel Hill Fund has been honored to partner with the Brain and Behavior Research Foundation to celebrate outstanding scientific advancements that further our understanding of early-onset brain and behavior conditions. The work of the Ruane Prize community is instrumental in developing new treatments and catalyzing additional research to support adolescent wellbeing."

— Itai Dinour, Executive Director

2024 RUANE PRIZE FOR OUTSTANDING ACHIEVEMENT IN CHILD & ADOLESCENT PSYCHIATRIC RESEARCH



John N. Constantino, M.D.

Chair and Chief, Center for Behavioral and Mental Health, Children's Healthcare of Atlanta
Professor of Psychiatry & Behavioral Sciences, Pediatrics, and Genetics,
Emory University School of Medicine

"I am thrilled to be counted among those recognized by BBRF for contributions to research in child and adolescent psychiatry and am profoundly grateful to the Foundation for all it has done during my lifetime to advance our field."

John N. Constantino is a child psychiatrist and pediatrician whose research focuses on understanding genetic and environmental influences on disorders of social development in childhood, for the purpose of preventing or ameliorating lifelong impairment. He and his team developed and systematically validated the Social Responsiveness Scale, a quantitative scale for rating the characterizing traits and symptoms of autism that has been translated into over 60 foreign languages and is used worldwide as a measurement standard in research and clinical settings. His work has revolutionized understanding of autism as a condition that lies at the extreme of a continuous distribution of variation in social behavior that extends throughout the general population. This has led to a clearer understanding of mechanisms of inheritance in autism, and the identification of a discrete set of developmental liabilities that constitute new, tractable targets for higher-impact early intervention, including early social visual engagement. In parallel, he and his team have worked to understand and offset the influence of early adverse environmental experience on social development in childhood, particularly in relation to child maltreatment, which affects 1 in 8 U.S. children, is a direct cause of enduring psychiatric disorders over the life course, and is often preventable.

"Dr. Constantino has identified the range of presentations that occur in autism spectrum disorders, highlighting the connections with many other forms of psychopathology and with healthy functioning. He has linked these varied presentations and their correlates in measures of brain function to pathophysiologic factors through research utilizing techniques from genetic epidemiology."

— Daniel S. Pine, M.D., Chair, Ruane Prize Committee



Christopher J. McDougle, M.D.

Director, Lurie Center for Autism
Professor of Psychiatry
Massachusetts General Hospital
Harvard Medical School

1997 BBRF Independent Investigator
1994, 1990 BBRF Young Investigator

"I am humbled and grateful to receive the 2024 Ruane Prize. I am fortunate to have been mentored by many outstanding individuals and leaders in our field throughout my training and professional career. It is a great honor to be among the previous winners of this award."

Christopher J. McDougle is an internationally renowned expert in the neuropsychopharmacology of childhood-onset neurodevelopmental disorders. He has dedicated his career to the psychopharmacology of childhood-onset neuropsychiatric disorders across the lifespan. He has 25 years of experience diagnosing and caring for children, adolescents, and adults with autism spectrum disorders (ASDs). Before coming to Mass General, Dr. McDougle was the chairman of the department of psychiatry and executive director of the Institute of Psychiatric Research at Indiana University School of Medicine, where he was also the Albert Eugene Sterne Professor of Psychiatry. Dr. McDougle has maintained an active clinical practice throughout his career and continues this commitment to caring for individuals with ASDs at the Lurie Center, where he has expanded services for adults. As director of the Lurie Center, Dr. McDougle is keenly interested in leveraging the vast resources that exist at Mass General and elsewhere in Boston to advance new discoveries and treatments for children, adolescents, and adults with ASDs.

"Dr. McDougle's research on treatment and its relation to both biological and other neurodevelopmental factors has had a particularly profound impact. He has conducted important clinical trials on a range of mental conditions, including obsessive compulsive disorder and a range of neurodevelopmental syndromes. In particular, his studies on the safety and efficacy of medications for the treatment of autism spectrum disorder actively shape current practice."

— Daniel S. Pine, M.D., Chair, Ruane Prize Committee

PREVIOUS RUANE PRIZE WINNERS

Listing reflects prizewinners' affiliation when they received the prize

2000 Professor Sir Michael L. Rutter
King's College London, Institute of Psychiatry, UK

Contributed to the establishment of child psychiatry as a medical and biopsychosocial specialty with a strong scientific base.

2001 Donald J. Cohen, M.D.
Yale University

Helped move child psychiatry into the biological era, while continuing to put emphasis on the psychological and social aspects affecting child development.

2002 Judith L. Rapoport, M.D.
National Institute of Mental Health

Influential research on childhood-onset schizophrenia, ADHD, and OCD, with a particular focus on diagnosis. Influential genetic studies of psychiatric illness.

2003 Leon Eisenberg, M.D.
Harvard Medical School

Conducted some of the first rigorous studies of autism, ADHD, and learning delays and became a prominent advocate for children with disabilities.

2004 Magda Campbell, M.D.
New York University
Influential expert on pharmacology and adolescent disorders, including autism.

C. Keith Conners, Ph.D.
Duke University

Devised a 39-item questionnaire called the Conners Rating Scale that was part of clinical work with hyperactive children establishing the first standards for diagnosing and treating what is now known as ADHD.

Rachel G. Klein, Ph.D.
New York University

Influential childhood disorder research; showed that poor social adjustment in early childhood was an important negative predictor of the lifelong course of adults with schizophrenia; an expert on treatments for childhood disorders.

2005 Allan L. Reiss, M.D.
Stanford University

Uses neuroimaging, genetic analyses, neurocognitive assessment, and measurement of environmental factors to build models of brain function in individuals with typical and atypical learning and behavior.

2006 David A. Brent, M.D.
University of Pittsburgh School of Medicine

Co-founder of Services for Teens at Risk, a suicide prevention program. Research on suicide focusing on the epidemiology of adolescent suicide that has helped identify causal factors; worked to establish the role of cognitive therapy as a treatment for depressed adolescents.

David Shaffer, M.D.
Columbia University

Pioneer in the study of suicide; developed the widely adopted Children's Global Assessment Scale (C-GAS) and the Diagnostic Interview Schedule for Children (DISC) and the Columbia Teen Screen.

2007 James F. Leckman, M.D.
Yale University

Patient-oriented neuroscientist and clinician with special skills in the evaluation and treatment of Tourette's syndrome and pediatric-onset OCD; has studied ADHD, autism, and mood disorders.

2008 Eric Andrew Taylor, M.D.
King's College London, Institute of Psychiatry, UK

Has studied community screening for psychotic-like experiences and other potential antecedents of schizophrenia in children.

2009 Adrian C. Angold, M.D.
Duke University Medical Center

Applies developmental and epidemiological principles to the study of psychopathology. Research on depression, anxiety, and disruptive behavior disorders and their effects on service use in children and adolescents.

E. Jane Costello, Ph.D.

Duke University Medical Center

Leader of the Great Smoky Mountains Study, which demonstrated that anxiety disorders were not rare in a large community sample of children, viewed longitudinally.

2010 Terrie E. Moffitt, Ph.D.

Duke University

King's College London, Institute of Psychiatry, UK

Researches the interplay between nature and nurture in the origins of problem behaviors, with a particular interest in antisocial and criminal behaviors.

Avshalom Caspi, Ph.D.

Duke University

King's College London, Institute of Psychiatry, UK

Has studied how childhood experiences shape aging and health inequalities across the lifespan; how genetic differences shape the way people respond to their environments; devised ways to assess and measure personality differences between people.

2011 Daniel S. Pine, M.D.

National Institute of Mental Health

Studies biological and pharmacological aspects of mood, anxiety, and behavioral disorders in children; biological commonalities and differences among psychiatric disorders of children, adolescents, and adults; and interfaces between psychiatric and medical disorders.

2012 Daniel Geschwind, M.D., Ph.D.
University of California, Los Angeles

Takes a systems-biology approach, integrating genetic, genomic, and bioinformatic approaches with neurobiological investigation in model systems and human brain, aiming to inform development of new therapies.

Matthew State, M.D., Ph.D.

Yale University

Child psychiatrist and human geneticist studying pediatric neuropsychiatric syndromes; focuses on gene discovery as a launching point for efforts to illuminate the biology of disorders, including, notably, autism.

2013 Jay N. Giedd, M.D.

National Institute of Mental Health

Longitudinal studies combining brain imaging, genetics, and neuropsychology that have had a major impact on psychology, psychiatry, clinical care, the judicial system, parenting, adolescent medicine, substance abuse, and education reform.

2014 Anita Thapar, M.D., Ph.D.

Cardiff University School of Medicine, Wales

Has provided evidence suggesting existence of a spectrum of attention, hyperactivity/impulsiveness, and language function in society associated with clusters of genes linked with the risk for developing ADHD.

2015 BJ Casey, Ph.D.

Weill Cornell Medical College

Novel uses of brain imaging to understand childhood disorders; research focuses on the development of brain circuitry involved in learning and behavior regulation and how disruptions can lead to disorders.

Francisco Xavier Castellanos, M.D.

Child Study Center at NYU Langone Medical Center

Influential studies of ADHD using structural and functional imaging; collaborating on molecular genetic studies and coordinating the interdisciplinary ADHD Neuroscience Network, aiming at translation.

2016 John L. R. Rubenstein, M.D., Ph.D.

University of California, San Francisco

Demonstrated the role of specific genes in regulating neuronal specification, differentiation, migration, and axon growth during embryonic development and on through adult life—work that may help explain mechanisms underlying neurodevelopmental disorders such as autism.

2017 Nathan A. Fox, Ph.D.

University of Maryland, College Park

Research on the biological bases of social and emotional behavior; identified factors that reduce or enhance likelihood of anxiety; focuses mainly on cognitive processes.

Charles A. Nelson III, Ph.D.

Harvard Medical School

Researches problems in developmental cognitive neuroscience, including development of social perception; developmental trajectories to autism; effects of early adversity on brain and behavioral development; studied abandoned Romanian children.

Charles H. Zeanah, Jr., M.D.

Tulane University School of Medicine

Studies effects of adverse early experiences, including trauma, abuse, and neglect on young children's development. Has been a leader in infant mental health, exploring attachment and attachment disorders in conditions of extreme risk.

2018 Ami Klin, Ph.D.

Marcus Autism Center, Emory University School of Medicine & Children's Healthcare of Atlanta

Co-developer of eye-tracking technology; champion of notion that early detection and early intervention optimizes autism outcomes in children, beginning in the first year of life.

Joseph Piven, M.D.

University of North Carolina at Chapel Hill

Has emphasized interdisciplinary collaborations in imaging (MRI/DTI), behavioral-family, and molecular genetics studies aimed at elucidating the pathogenesis of autism syndromes. Principal investigator of two large-scale research centers on autism.

2019 Stephen P. Hinshaw, Ph.D.

University of California, San Francisco / University of California, Berkeley

Has helped define fundamental features of ADHD, including details on clinical features as the disorder changes with development, aspects of underlying neurobiology, and approaches to treatment.

2020 Joan L. Luby, M.D.

Washington University School of Medicine, St. Louis

Has identified the clinical markers of depression in the preschool period and has helped develop of a treatment designed to enhance emotion development as an early intervention for depression.

2021 Kenneth A. Dodge, Ph.D.

Duke University

Formulated a social information processing model of the development of aggressive behavior asserting that early adverse life events lead some children to develop a defensive mindset that leads to increasingly violent behavior.

John T. Walkup, M.D.

*Northwestern University Feinberg School of Medicine
Johns Hopkins University*

Influential research on movement disorders, specifically Tourette disorder, that uniquely spans psychiatry, child psychiatry, and neurology; interventions to reduce large mental health disparities among Native American youth.

2022 Boris Birmaher, M.D.

University of Pittsburgh Medical Center / Western Psychiatric Institute

Leader in the study and treatment of pediatric mood and anxiety disorders. Described predictors, risk factors, course and treatment of childhood-onset bipolar disorder.

2023 Katie McLaughlin, Ph.D.

University of Oregon

Research on how environmental experience, especially adverse experience, influences brain and behavioral development in children and adolescents.

A QUARTER-CENTURY OF THE RUANE PRIZE: A PROUD TRADITION

In the year 2000, when philanthropists Joy and William Ruane, in consultation with Steve and Connie Lieber and the Scientific Council of the Brain & Behavior Research Foundation, established an annual prize for Outstanding Achievement in Child and Adolescent Psychiatric Research, the field was undergoing rapid changes and perhaps for the first time, receiving attention from both scientists and the general public that it had long deserved.

As pointed out by **Dr. Joan Luby** of Washington University, St. Louis, a child psychiatrist who was awarded the Ruane Prize in 2020, experts had long questioned the very existence of psychiatric illness in young children. “For a very long time,” Dr. Luby said, “there was a resistance in the field to accept the idea that children could, for instance, be depressed. It really wasn’t until the 1980s that things began to change, when empirical studies came out showing this, and that depressed children had the same fundamental symptoms as depressed adults. Previously, people said either children were developmentally too immature to experience the core symptoms of depression, or they said they would experience other symptoms, like stomach aches or aggressive behavior.”

But then, Dr. Luby noted, “the research started to show that, no, this was not the case, that children were a lot more emotionally sophisticated than we had previously understood. One landmark paper provided data showing that in children, depression looks just like it does in adults. In other words, children have anhedonia, which is decreased ability to enjoy activities and play. They have sustained sad mood; the inability to sustain joyful moods; and disturbances in sleep and appetite.”

Similar discoveries were made about other mental health conditions affecting young people. The Ruane Prize was initiated to recognize the pioneering clinicians and researchers who have made these discoveries, bringing new treatments to children and adolescents who suffer, and changing public consciousness about mental health problems experienced by young people.

Daniel S. Pine, M.D., a child psychiatrist who is now the Chief of Child and Adolescent Research in the Mood and Anxiety Disorder Program at the National Institute of Mental Health, received the Ruane Prize in 2011. Like Dr. Luby, he reminds us of things that science and experience have taught us since the “early days” when childhood and adolescent disorders were often not recognized. For

instance, as he noted in a BBRF interview this past year, “it’s really important to understand that there’s a very strong relationship between having anxiety in childhood and developing depression in adolescence and adulthood.” Although anxiety is the most prevalent psychiatric condition, Dr. Pine notes, “we are quite effective in treating it. But we have a much harder time treating major depressive disorder in adolescence or in adulthood. By treating anxiety in childhood not only are you potentially inoculating that child against later risk for depression, but you are also making a big difference in the immediate life of that child.”

This is but one example of how the last quarter-century of research in the child and adolescent mental health field has affected the way doctors treat young patients and improve their chance of having healthy and productive lives.

To understand how far the field has advanced since the inception of the Ruane Prize, it is important to learn about some of its first recipients, as well as a few of the more recent.

The first Ruane Prize winner, **Sir Michael Rutter**, was the very first professor of Child Psychiatry in the UK, and, as noted by Great Britain’s Royal Society, he is widely credited with establishing child psychiatry as an academic discipline. Over five decades he transformed the field, challenging accepted thinking, clarifying concepts, devising methodologies, and undertaking ground-breaking and foundational research. “Every part of the field,” a Royal Society memorial to Dr. Rutter states, “bears the stamp of his endeavors, whether via advances in classification, the design of assessment instruments, or the application of innovative designs. He undertook the first systematic epidemiological studies of child mental health in the UK, made extensive studies of both genetic and environmental risks for child psychopathology, clarified conceptualizations of risk and protective factors and resilience, proposed the influential ‘*developmental psychopathology*’ paradigm, and was an acknowledged world leader in the study of autism. He trained many of the next generation of academic child psychiatrists, who extended his influence across the globe. Much of his research impacted policy, and he was widely revered, both nationally and internationally, for his seminal contributions to advancing understanding of both child development and child mental health.”

The second recipient of the Ruane Prize (2001) was similarly seminal in his impact. **Donald J. Cohen, M.D.**, of Yale University, tragically passed away the very year he received the Prize. A *New York Times* obituary quoted Dr. David A. Kessler, then dean of Yale’s School of Medicine and a former commissioner of the Food and Drug Administration, on Dr. Cohen’s immense role in the field: “Donald Cohen really moved child psychiatry into the biological era, but he continued to put emphasis on the psychological and social aspects affecting child development.”

Dr. Cohen was also widely known for the programs he helped establish in the United States and abroad to help children affected by violence and disaster. The Yale Child Study Center, where Dr. Cohen had been director since 1983, was designated by the Department of Justice as the site of the National Center for Children Exposed to Violence. With colleagues, Dr. Cohen also established the International Working Group on Children and War, a coalition of researchers and clinicians. “He fostered the development of the next generation of academic child psychiatrists from many countries, in Europe, Korea, China, as well as Israel,” said **Dr. James F. Leckman**, a professor of psychiatry at Yale, who worked closely with Dr. Cohen and himself was awarded the Ruane Prize in 2007.

Judith L. Rapoport, M.D., who won the Prize in 2002, was for decades the Chief of the Child Psychiatry Branch at the National Institute of Mental Health. Dr. Rapoport’s research on childhood-onset schizophrenia, ADHD, and OCD has been of great influence, as were her early explorations of the relationship between genomic variations and mutations and child and adolescent mental illness. Dr. Rapoport co-authored important “training guides for diagnosis” of childhood and adolescent disorders, following publication of the DSM-III and DSM-IV diagnostic manuals. At the same time, Dr. Rapoport has had a great impact on public perceptions, having authored the bestselling book *The Boy Who Couldn’t Stop Washing: The Experience and Treatment of Obsessive-Compulsive Disorder*.

The 2003 winner of the Ruane Prize made enormous contributions to classifying and regularizing the diagnosis of mental disorders in young people. **Leon Eisenberg, M.D.** “is best remembered for his pioneering studies at Johns Hopkins University that moved this nascent specialty from simple descriptions of disorders to investigations into the science that underlies both diagnosis and treatment,” according to a tribute published in the journal *Child & Adolescent Psychiatry*. “He was motivated to find effective treatments for children with mental disorders, whom he felt were often disenfranchised because of a prevailing emphasis on psychoanalytic treatment models that limited who was eligible for treatment. In this context, he initiated a broad research agenda to find alternative treatments that included the first randomized controlled trials in child psychopharmacology.” In collaboration with **C. Keith Conners, Ph.D.**, one of the first faculty members he recruited, and winner of the Ruane Prize in 2004, Dr. Eisenberg showed that dextroamphetamine and methylphenidate were effective treatments for hyperactive children. These early studies formed the scientific basis for drug treatment of attention deficit disorder.

Two winners of the Ruane Prize in 2006 created some of the first accurate and widely adopted tools for assessing suicidality in young people. **David A. Brent, M.D.**, of the University of Pittsburgh School of Medicine, co-founded Services for Teens at Risk, a suicide prevention program. He has performed research

on suicide focusing on the epidemiology of adolescent suicide that has helped identify causal factors and has worked to establish the role of cognitive therapy as a treatment for depressed adolescents. **David Shaffer, M.D.** of Columbia University, developed the Children’s Global Assessment Scale (C-GAS) and the Diagnostic Interview Schedule for Children (DISC) and the Columbia Teen Screen, instruments aimed at identifying suicide risk in young people that were adopted all over the world.

Several Ruane Prize winners have helped forge connections between genetics and childhood disorders. In 2012, the Prize recognized **Daniel Geschwind, M.D., Ph.D.**, of the University of California, Los Angeles, who has taken a systems-biology approach, integrating genetic, genomic, and bioinformatic approaches with neurobiological investigation in model systems and human brain, aiming to inform development of new therapies. Also, in 2012 the Ruane Prize recognized **Matthew State, M.D., Ph.D.**, of Yale University, a child psychiatrist and human geneticist studying pediatric neuropsychiatric syndromes. Dr. State focuses on gene discovery as a launching point for efforts to illuminate the biology of disorders, including autism. The 2016 Ruane Prize was awarded to **John L. R. Rubenstein, M.D., Ph.D.**, of the University of California, San Francisco, who has demonstrated the role of specific genes in regulating neuronal specification, differentiation, migration, and axon growth during embryonic development and on through adult life—work that may help explain mechanisms underlying neurodevelopmental disorders such as autism.

Some of the most recent Ruane Prize recipients have carried forward the pioneering spirit of the first winners.

Ami Klin, Ph.D., of the Marcus Autism Center, Emory University School of Medicine & Children’s Healthcare of Atlanta, was awarded the Ruane Prize in 2018. Dr. Klin is co-developer of eye-tracking technology that has been used to identify very young children at high risk for autism spectrum disorder. Dr. Klin is a champion of the notion that early detection and early intervention optimizes autism outcomes in children, beginning in the very first year of life.

The Ruane Prize was also awarded in 2018 to **Joseph Piven, M.D.**, of the University of North Carolina at Chapel Hill. Dr. Piven has emphasized interdisciplinary collaborations in imaging (MRI/DTI), behavioral-family, and molecular genetics studies aimed at elucidating the pathogenesis of autism syndromes. He is the principal investigator of two large-scale research centers on autism.

The 2019 Ruane Prize awardee, **Stephen P. Hinshaw, Ph.D.**, of the University of California, San Francisco /University of California, Berkeley, has brought much-needed attention to science that has helped define fundamental features of ADHD, including details on clinical features as the disorder changes over the

course of development, as well as elucidating aspects of underlying neurobiology, and developing approaches to treatment.

Joan L. Luby, M.D., the 2020 Ruane awardee mentioned earlier, helped to refine an early intervention treatment called PCIT (Parent-Child Interactive Therapy) for the treatment of childhood depression. Dr. Luby has identified the clinical markers of depression in preschool-aged children who once were thought “too young” to manifest diagnosable psychiatric illness. Challenging this orthodoxy, Dr. Luby says her team “essentially capitalized on research which had studied children as young as 6, and we then asked the question: what this would look like in even younger children? We discovered we could find depression in children as young as 3. We found symptoms like anhedonia and decline in joyful behavior.” Dr. Luby notes poignantly: “Children are inherently so joyful that these markers are very important to pay attention to,” lest they be missed or dismissed.

This year’s Ruane Prize awardees carry forward the tradition of excellence represented by the annual prize. **John N. Constantino, M.D.**, of the Emory University School of Medicine, is a child psychiatrist and pediatrician whose research focuses on understanding genetic and environmental influences on disorders of social development in childhood, for the purpose of preventing or ameliorating lifelong impairment. **Christopher J. McDougle, M.D.**, of Massachusetts General Hospital and Harvard Medical School, is an internationally renowned expert in the neuropsychopharmacology of childhood-onset neurodevelopmental disorders. He has dedicated his career to the psychopharmacology of childhood-onset neuropsychiatric disorders across the lifespan.

For a quarter-century, the Ruane Prize has fulfilled the vision of the Ruane family and the Brain & Behavior Research Foundation. It has and will continue to recognize the very best clinicians and researchers who are bringing new knowledge to the field and new hope to all who suffer from mental disorders of childhood and adolescence. —**PETER TARR, Ph.D.**



Awarding **NARSAD** Grants

The Brain & Behavior Research Foundation is committed to alleviating the suffering caused by mental illness by awarding grants that will lead to advances and breakthroughs in scientific research.

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