

2012 Maryland Neuroimaging Center Summer Institute

Social Developmental Neuroscience

FACULTY



Ralph Adolphs, Ph.D.

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Dr. Adolphs received his Bachelor's degree from Stanford University, and his Ph.D. in neurobiology from Caltech. He did post-doctoral work with Antonio Damasio at the University of Iowa, beginning his studies in human neuropsychology, with a focus on the recognition of emotional facial expressions. Since 2004 he holds an appointment as Professor at Caltech, as well as an adjunct appointment in the Department of Neurology at the University of Iowa.



David Amaral, Ph.D.

Distinguished Professor
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Dr. Amaral's interests include research involving multidisciplinary studies directed at determining the neuroanatomical, behavioral and electrophysiological organization and functions of brain systems that are involved in learning, memory, emotion and social behavior carried out on the human brain and on animal models. He also conducts research on neurobiological correlates of autism.

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Damien Fair, PA-C, Ph.D.

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Dr. Fair's laboratory focuses on mechanisms and principles that underlie the developing brain. The majority of this work uses functional MRI and resting state functional connectivity MRI to assess typical and atypical populations. A second focus has become testing the feasibility of using various functional and structural MRI techniques in translational studies of developmental neuropsychiatric disorders (e.g., attention deficit hyperactivity disorder and autism). They are exploring ways to better characterize individual patients with these psychopathologies to help guide future diagnostic, therapeutic and genetic studies.



Nathan A. Fox, Ph.D.

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Nathan A. Fox is a Distinguished University Professor in the Department of Human Development at the University of Maryland, College Park. His interests are in the biological bases of individual differences in infant temperament and the role of early experience as it affects brain and behavior in the realm of social and emotional competencies. His research has been continuously funded for the past 20 years by the National Institutes of Child Health and Human Development (NICHD) and he received a MERIT award from the National Institutes of Health (NIH) for his work on infant temperament. He currently receives funding from the National Institute of Mental Health (NIMH) for work on temperament and psychopathology, and for a study examining the effects of early social learning in infants. He was the PI of the NSF grant that brought the MRI to the UMCP campus and is on the executive board of the Maryland Neuroimaging Center. He is a Fellow of the American Association for the Advancement of Science and the Association for Psychological Science.

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Adriana Galván, Ph.D.

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Dr Galván is an Assistant Professor at UCLA and a Faculty Member of the UCLA Brain Research Institute. She received her Ph.D. in Neuroscience at Weill Cornell Medical College.

Dr. Galván's research focuses on adolescent brain development. Specifically, her work examines how changes in brain maturation during adolescence relate to adolescent behavior and decision-making. Recent work has examined developmental trajectories in neurobiological substrates underlying affect processing as they relate to risk-taking behavior. Currently, research projects address the role of social influence and peer pressure on decision-making and neural activity in typically developing children and adolescents.

Another line of research examines functional brain development in adolescent risk-takers (e.g. adolescent smokers, methamphetamine-addicted adolescents), particularly as it relates to cognitive control and risky decision-making.



Amanda Guyer, Ph.D.

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Dr. Guyer's research focuses on the behavioral and neural mechanisms that may underlie the way that adolescents think and feel. Overarching questions throughout her research focus on understanding how the way in which adolescents perceive or attend to social and non-social stimuli impacts neural function that underlies avoidance or approach responses and how this changes with age or varies in adolescents with social-emotional difficulties. To address such questions, Dr. Guyer primarily uses neuroimaging methods to identify what regions of the adolescent brain respond to emotional faces, social evaluation, and rewards and under what contexts. She has three research projects currently underway designed to examine: (1) neural responses to social and non-social rewards in adolescents with social anxiety disorder and adolescents characterized in early childhood as having a behaviorally inhibited temperament; (2) longitudinal assessments of neural circuits involved in emotional memory and reward processing, life stressors, and depression in a large sample of 16-year-old girls at high risk for depression; and (3) associations among social contexts afforded by parent and peer relationships, neural responses to rewards, and substance use in a large sample of Mexican-origin adolescents.

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Fumiko Hoeft, M.D., Ph.D.

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Dr. Fumiko Hoeft is interested in figuring out ways that cognitive neuroscience research can inform educational and clinical practices. Some examples include: 1. use of functional and structural neuroimaging as biomarkers, 2. creating models using brain imaging measures in combination with behavioral, cognitive, environmental and genetic measures to predict outcome in populations such as developmental dyslexia and idiopathic autism, 3. use of neuroimaging to identify 'novel' subtypes in disorders such as autism, and 4. the use of neuroimaging as a biofeedback training tool to improve cognitive functions (real-time functional MRI). She is also interested in investigating factors such as environment and motivation on brain development and cognitive functions.



Ellen Leibenluft, M.D.

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Ellen Leibenluft, M.D. is Senior Investigator and Chief of the Section on Bipolar Spectrum Disorders in the Emotion and Development Branch, Mood and Anxiety Program, National Institute of Mental Health, and Clinical Associate Professor of Psychiatry at Georgetown University School of Medicine. Dr. Leibenluft received her B.A. from Yale University summa cum laude and her M.D. from Stanford University. After completing residency training at Georgetown University Hospital, she served on the faculty there as director of the psychiatric inpatient unit and day hospital. She came to the NIMH in 1989, and since that time has been conducting research on bipolar disorder. Her research focuses on the brain mechanisms involved in bipolar disorder in children and adolescents. Her work involves the use of cognitive neuroscience techniques and neuroimaging modalities, including functional MRI. In addition, since questions have been raised as to whether children with impairing irritability should be diagnosed with bipolar disorder, Dr. Leibenluft conducts research on this question, including studies on the brain mechanisms mediating severe irritability in children.

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Charles A. Nelson, Ph.D.

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The Nelson Laboratory conducts research on a variety of problems in developmental cognitive neuroscience. One line of research concerns typical and atypical memory development. A second theme of the Nelson Lab is concerned with infants' and children's ability to recognize faces and facial emotion. Based on the assumption that the neural architecture underlying face processing becomes specialized with experience viewing faces, much of the work being conducted focuses on the role of experience in face processing. We juxtapose our work with typically developing infants and children with infants at risk for developing autism and children who already meet criteria for autism spectrum disorder. A final and dominant theme of the lab is concerned with the role of experience in influencing the course of brain development. Here our work focuses not only on typical experiences but as well, children exposed to early biological and psychosocial adversity. An example of the latter is the *Bucharest Early Intervention Project* (conducted jointly with Nathan A. Fox, Ph.D. and Charles H. Zeanah, MD), which seeks to examine the effects of early psychosocial deprivation on brain and behavioral development.



Kevin Pelphrey, Ph.D.

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Work in Dr. Pelphrey's laboratory focuses on discovering brain mechanisms underlying the development of different aspects of social cognition including social perception (the initial stages of evaluating the intentions and goals of others by analysis of biological motion cues), theory of mind (the ability to make inferences about the mental states of others), and the perception and regulation of emotion. The laboratory conducts studies focused on fundamental questions regarding the typical and atypical development of social cognition in children with and without autism spectrum disorders and other neurodevelopmental disorders. By studying the normal ontogeny of the brain mechanisms underlying social cognition and the abnormal development of these mechanisms in children with autism and other neurodevelopmental disorders, the Pelphrey laboratory is working to uncover the building blocks for complex, multi-faceted, social cognitive abilities.

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Luiz Pessoa, Ph.D. is a Professor in the Department of Psychology at the University of Maryland, College Park. Dr. Pessoa received his Ph.D. in computational neuroscience from Boston University and post-doctoral training at the National Institute of Mental Health. His research focuses on understanding cognitive-emotional interactions by employing behavioral and neuroimaging methods, such as functional magnetic resonance imaging (fMRI) and, more recently, EEG and MEG. Dr. Pessoa's current research also addresses how motivation interacts with cognition, both at perceptual and executive levels.



Jennifer H. Pfeifer, Ph.D.

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Dr. Pfeifer is interested in the neural and behavioral correlates of self-perception, social cognition, emotion processing, and decision-making from middle childhood to late adolescence. Her research addresses several broad topics: (i) examining developmental changes in the neural bases of self-evaluation processes, including direct and reflected self-appraisals and other forms of self-perception such as those implicated in self-conscious emotions, (ii) understanding the development of neural systems that support advanced perspective-taking and social comparison abilities, as well as the more basic mentalizing mechanisms that facilitate our understanding of other individuals' inner states (including via shared neural representations of our own and others' emotions), (iii) exploring the interplay between networks that react to emotions and those which regulate them, especially as influenced by pubertal development, and (iv) characterizing how social experiences (such as inclusion and rejection) influence decision-making and risky behavior at the neural and behavioral levels.

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Dr. Daniel Pine is currently Chief, Section on Development and Affective Neuroscience and Chief of Emotion and Development Branch in the Mood and Anxiety Disorders Program of the National Institute of Mental Health Intramural Research Program. Dr. Pine also possesses expertise in the biological commonalities and differences among psychiatric disorders of children, adolescents and adults as well as on interfaces between psychiatric and medical disorders. His most recent work uses methods from neuroscience to study normal and abnormal emotional development. Dr. Pine's research interests include two complimentary avenues. First, he is testing hypotheses on brain-behavior associations in childhood psychopathology. Second, he is an active investigator in pediatric psychopharmacology. With respect to brain-behavior associations, Dr. Pine has conducted a series of studies examining the pathophysiology of anxiety disorders in children and adults over the past decade. Much of his initial work in this area relied upon psychophysiologic or neuropsychological experimental paradigms.



Joseph Piven, M.D.

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Dr. Joseph Piven's research focus is on the pathogenesis of autism including neural mechanisms, genetic basis and neuropsychological and behavioral phenotype. He serves as Director for the Carolina Institute for Developmental Disabilities and is Editor in Chief of The Journal of Neurodevelopmental Disorders. Dr. Piven is also the Principal Investigator for the NIH ACE Network on the Infant Brain Imaging Study (IBIS).

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Elizabeth Redcay is an Assistant Professor of Psychology and the director of the Developmental Social Cognitive Neuroscience Lab. She received her Ph.D. in Psychology and Cognitive Science from UCSD and completed a postdoctoral fellowship in MIT's Brain & Cognitive Sciences department before starting at UMD. Dr. Redcay's research examines the development and neural bases of social and communicative behaviors (e.g. joint attention, theory of mind, social interaction, language) and the interactions between these processes in both typical individuals and individuals with autism. She additionally examines how (and the extent to which) the brain systems underlying these behaviors become specialized, and how this neural specialization is reflected in behavioral changes.