Prof. Peter Blake (pblake@bu.edu). Our research focuses on how children come to understand the social world. We conduct cognitive and behavioral experiments with children from 2 to 12 years of age. We study things such as cooperation and competition, ownership and private property, fairness and other social norms, and learning through imitation and communication. As a directed study student you would be involved in running studies, recruitment, interacting with participants and parents, study development and entering data.

Prof. Leslie Brody (lesbro@bu.edu). My current research investigates how coping strategies and gender roles in women with HIV predict their health outcomes. Students in the lab are trained to collaboratively code autobiographical narratives for coping strategies, gender roles, and interpersonal themes; to enter data, and then to select their own research question for further investigation.

Prof. Catherine Caldwell-Harris (charris@bu.edu). My research concerns cognition, language, and the brain. I have projects on bilingualism, psycholinguistics, deaf children’s sign acquisition and literacy, and cross-cultural aspects of emotion and language. I encourage students to begin the directed study by working on one of the existing projects in the lab, and then to develop their own study in conjunction with other lab members, if desired.

Prof. James Cherry (jcherry@bu.edu) (SAB SEM I). Projects are available for students with some background and interest in neurobiology in studies that investigate brain circuitry in the mouse that processes odors used in social communication. Projects typically require animal handling and may use methods that include behavioral observation, neurosurgery, electrophysiology and/or histology/immunohistochemistry.

Prof. Alice Cronin-Golomb (alicecg@bu.edu). Cognition, perception, mood, and motor function in Parkinson's disease and other neurological disorders, and in healthy age-matched individuals. Students may participate in literature review, data collection, coding and entry, and analysis.

Prof. Margaret Hagen (hagen@bu.edu). We have an ongoing research laboratory studying jurors' decision-making in cases involving bullying, inflicting emotional distress, and ruining the reputations of others. Many of our cases center on evolving standards for use of social media and the expectations of privacy people do and do not have on these media.

Prof. Michael Hasselmo (hasselmo@bu.edu) (SAB SEM II). Students with a strong interest in neurophysiological mechanisms of memory function may have the opportunity to perform projects involving training of rats and gathering of physiological data. This requires a strong background in courses related to neuroscience. There are also opportunities for interested students in computer modeling of memory function in cortical networks. This requires some background in mathematics, programming or neural network theory.

Prof. Kathleen Kantak (kkantak@bu.edu). My research uses animal models to conduct translational research related to drug addiction. Using intravenous drug self-administration procedures, the current project investigates the pharmacological, behavioral and molecular determinants of extinction memory enhancement in drug-addicted rats for relapse prevention.
MA DIRECTED STUDY OPPORTUNITIES 19/20 (continued)

Prof. Deb Kelemen (dkelemen@bu.edu). Research in the Child Cognition Lab focuses on children's conceptions of animals, people, and human-made objects. Depending on the specific project, directed study participation may include subject recruitment, data entry, assisting in the design stimuli (drawing and Photoshop skills are always in demand!), some child interviewing with training.

Prof. Sam Ling (samling@bu.edu). Sensation is easy – even a camera can sense light. For a camera, light simply falls onto film, creating a photograph of what was seen; the story ends there. For humans, however, the moment light falls on our retina is but the beginning of an exceedingly complex process, culminating in our rich perceptual experiences. It is this remarkable process that sets our visual system far apart from simple devices such as cameras: our brain’s ability to perceive and consciously experience the visual world. Our lab’s work centers on that pivotal stage of cognitive processing – the stage at which sensation becomes perception. Our research combines a variety of techniques, including psychophysics, computational modeling, and functional magnetic resonance imaging (fMRI) – all aimed towards understanding how the brain mediates between the ‘buzzing confusion’ of the visual environment and our limited processing power.

Prof. Kristin Long (kalong@bu.edu). Our lab focuses on (1) reciprocal influences between a child’s medical illness or disability and his/her family and cultural context, (2) health disparities in the diagnosis and treatment of childhood conditions, and (3) the development and evaluation of psychosocial interventions for children with chronic conditions and their families. The majority of our work is carried out with families facing childhood cancer, sickle cell disease, and autism. Please visit our website for more information (http://sites.bu.edu/childandfamilyhealth/).

Prof. Joseph McGuire (jtmcg@bu.edu). We study decision making in humans using the tools of computational cognitive science. Our goal is to understand the information processing operations that enable people to make good decisions in the face of delay, uncertainty, and setbacks. Our methods include behavioral experiments, eye tracking, computational modeling, and brain imaging. Directed study students can participate in data collection, data analysis, literature review, and theoretical modeling. Experience or interest in computer programming is beneficial (R, Python, Matlab, etc). See sites.bu.edu/cdlab for more information about the lab.

Prof. Susan R. McGurk (mcgurk@bu.edu) (SAB SEM I). My training is in both clinical and neuropsychology. My research addresses cognitive impairments in psychiatric illness, and their relationship with community functioning. Our research program is focused on the development and evaluation of cognitive enhancement strategies, such as restorative task practice and compensatory strategies, in improving work functioning in persons with serious psychiatric illness.

Prof. Kim T. Mueser (mueser@bu.edu). My research and clinical interests at the Center for Psychiatric Rehabilitation focus on the development and evaluation of psychosocial treatments for persons with a serious mental illnesses such as schizophrenia, bipolar disorder, or treatment refractory depression. My ongoing and past work has involved a variety of different interventions, including teaching illness self-management (Illness Management and Recovery program), cognitive behavioral therapy for PTSD or psychosis, integrated treatment for co-occurring substance use disorders, family psychoeducation, social skills training, supported employment, cognitive remediation, treatment of first episode psychosis, and health promotion/disease management interventions.
MA DIRECTED STUDY OPPORTUNITIES 19/20 (continued)

Prof. Tibor Palfai (palfai@bu.edu). My primary research interests are: (1) understanding the cognitive-motivational processes underlying health risk behaviors (e.g., hazardous/harmful drinking, substance use, risky sexual decisions) and (2) developing psychological interventions to reduce these risks. Specific areas of research include, (1) web and mobile-based interventions to reduce hazardous drinking and substance use, (2) laboratory studies on the effect of alcohol on self-control and decision making processes related to health risk behaviors, and (3) screening and brief intervention to modify HIV-risk factors and (4) developing integrated, behavioral interventions for patients in medical settings (e.g., HIV-care, primary care) who are experiencing co-occurring conditions (e.g., chronic pain and heavy drinking).

Prof. Robert Reinhart (rmgr@bu.edu). Our research aims to understand how the brains of healthy individuals and neuropsychiatric patients, such as those with schizophrenia, selectively extract, store, and use information from the external world. Typically, we employ visual perceptual and cognitive tasks, and measure the behavior of our participants performing these tasks as well as the electrophysiological responses of their brains which we record non-invasively from the scalp. We also rigorously use a causal neuroscientific tool called transcranial electrical stimulation to safely and reversibly manipulate the behavior and electrophysiological signals of our participants while they perform a task. Active areas of investigation in the lab include: visual attention, visual working memory, feedback learning, and adaptive control. As a directed study student you would be involved in some or all of the following stages of our research: experimental design and programming, participant recruitment, the acquisition and analysis of behavior and electroencephalographic (EEG) data, the delivery of transcranial electrical brain stimulation, and the preparation of abstracts, posters, and manuscripts for publication.

Prof. Mark A Richardson (markrich@bu.edu). Current research priorities include assessment of HIV risk behavior, HIV primary and secondary prevention among adults with serious mental illness, and the contribution of neuropsychological factors on changing knowledge about and engagement in risky behavior. I am also involved in a longitudinal study of cognitive and psychosocial adaptation following prenatal exposure to substances of abuse. Please note that current research activities are based at Boston Medical Center.

Prof. Kim Saudino (ksaudino@bu.edu). My research is in the area of early childhood temperament. I am currently working a twin study examining developmental change in temperament across the preschool period. The temperament dimensions of negative emotionality, positive emotionality, activity level, attention, persistence, shyness and inhibitory control is longitudinally assessed via multiple methods (e.g., behavioral tests, observations, actigraphs and parent ratings) in a sample of 300 twin pairs at 3, 4, and 5 years of age. Parent report and observational measures of parenting behavior are also obtained at each age. Developmental outcome measures include externalizing and internalizing behavior problems, prosocial behavior, and academic readiness. The specific aims of the study are to: 1) Explore individual differences in developmental change across the preschool period using observational measures of temperament in addition to parent ratings; 2) Assess links between child temperament and parenting trajectories. 3) Explore relations between temperament trajectories and developmental outcomes at age 5; and 4) Examine genetic and environmental influences on individual differences in temperament trajectories.
Prof. Amanda Tarullo (atarullo@bu.edu). My research examines how families and communities nurture the brain development of young children and how early life stress affects child development. Current studies focus on (1) How parents help their children regulate biological stress (2) How brain activity during attention and learning tasks varies depending on children's socioeconomic status and (3) Designing interventions to promote kindergarten readiness in at-risk children.

Prof. Martha Tompson (mtompson@bu.edu). My current work emphasizes understanding both family processes and designing and testing family-based treatment models for preadolescent-onset depression. My lab is conducting a clinical trial comparing a family-based to an individually-based treatment for preadolescent depression. Directed study students working in my lab learn about diagnosis and evaluation of depressive symptoms and disorder in youth, about family and individual treatment models for depression, and about the implementation of clinical trials of psychotherapeutic interventions. Students work in the lab 7 hours per week and participate in a 1 hour weekly lab meeting.

Prof. Nicholas J. Wagner (njwagner@bu.edu). My research investigates the enduring impact of early parent-child relationships on children’s socio-emotional development, the mechanisms and processes through which psychobiological and environmental factors promote psychosocial adaptation or contribute to the emergence of psychopathology in children, and how self-regulatory processes serve to augment or constrain these associations. Students will have the opportunity to gain experience with observational and psychobiological measurement. Depending on interests and the status of ongoing projects, students may assist with participant recruitment, data collection, observational coding, data entry and analysis, and the preparation of abstracts, posters, and manuscripts.
Numerous ongoing research projects on the nature and treatment of anxiety disorders in both adults and children. Specific areas of study include social phobia and panic disorder research and treatment with both psychological treatments and drugs, classification of anxiety disorders, the development of new transdiagnostic unified treatments for anxiety disorders, the study and treatment of eating disorders, and the study and treatment of addictive behavior and depression.

Prof. Stefan G. Hofmann (shofmann@bu.edu). I am conducting a number of research projects investigating the psychopathology and treatment of anxiety disorders (social phobia, specific phobia, and panic disorder). Furthermore, I am interested in the psychophysiology of emotions. Students will become familiar with various stages of a research project and may assist in conducting psychophysiological experiments, coding video and audio tapes, data entry, data organization, and data reduction.

Prof. Michael W. Otto (mwotto@bu.edu). Much of my current research focuses on strategies to increase the retention of therapeutic learning - strategies that are designed to provide more efficient treatment of anxiety, mood, and substance use disorders. In addition to pharmacologic strategies (use of d-cycloserine or yohimbine in conjunction with cognitive-behavior therapy) our newest projects will examine the role of exercise in creating brain conditions for faster learning. This work complements (1) our ongoing focus on (1) identifying core factors in psychopathology and its treatment (with an emphasis on the role of distress intolerance across a wide variety of disorders), (2) issues in the acquisition or maintenance of health behaviors (smoking, exercise, and medication adherence), and (3) predictors of extinction learning.