MA Directed Study Opportunities for 15/16

Prof. David H. Barlow, Room 630, 648 Beacon Street  My clinical research at the Center for Anxiety and Related Disorders (CARD) focuses on understanding the nature of anxiety and depression and developing new treatments for emotional disorders.

Prof. Peter Blake, Room 137, 64 Cummington Mall  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, Room 230, 648 Beacon Street  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 (SAB SEM I), Room 123, 64 Cummington Mall  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, Room 402A, 2 Cummington Mall  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, Room 208, 648 Beacon Street  Vision and cognition in Parkinson's disease and other neurological disorders. I am also conducting studies in cognition with healthy elderly individuals. Students may participate in literature review, data collection, coding and entry, and analysis.

Prof. Margaret Hagen, Room 125, 64 Cummington Mall  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, Room 105E, 2 Cummington Mall  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.
MA Directed Study Opportunities for 15/16 (continued)

Prof. Stefan G. Hofmann, Room 404, 648 Beacon Street  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 psycho physiological experiments, coding video and audio tapes, data entry, data organization, and data reduction.

Prof. Kathleen Kantak, Room 205, 2 Cummington Mall  My research uses animal models to conduct translational research related to drug addiction. Using intravenous drug self-administration procedures in rats, one project investigates how cognitive-enhancing therapeutic strategies may be useful for attenuating drug relapse. A second project focuses on neurocognitive deficits in rats with an ADHD phenotype and their response to medications as well as on comorbidity between ADHD and drug abuse risk. A third project utilizes transgenic mice for which different subtypes of serotonergic neurons can be silenced and the role of these neurons in addiction-related behavior is examined.

Prof. Deb Kelemen (SAB SEM I), Room 121, 64 Cummington Mall  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. Melissa Kibbe, Room 117, 64 Cummington Mall  I study how we perceive, attend to, and remember objects in both social and non-social contexts. Depending on the project and your interests, you might work on one of the following questions: 1) What counts as a visual object? 2) What are the limitations on working memory for objects? 3) How do we overcome limitations on working memory? 4) How does our memory for objects change when objects are placed in a social context (for example, when some objects are preferred by a person and some are not)? Also depending on the project, studies may be conducted with adults and/or infants and children. Directed study students may assist with participant recruitment, designing stimuli, data entry and coding, and/or running adult participants or (with training) infant/child participants.

Prof. Jacqueline Liederman (SAB SEM II), Room 118C, 64 Cummington Mall  I like to refer to myself as a Developmental Neuropsychologist; I am interested in the neural mechanisms underlying behavior and how these change in the context of development and/or disease. My training is primarily in physiological psychology. Research Interests: (1) how the two hemispheres collaborate and compete during information processing and how that is affected by split-brain surgery, learning disability and developmental maturation; (2) why boys are two to five times more likely to have a neurodevelopmental disorder than girls, including autism, dyslexia, learning disabilities, attention deficit disorder, etc. (Our current research examines factors underlying this male vulnerability during the prenatal period.); (3) attentional phenomena such as blindsight and change blindness (i.e., circumstances when awareness and perception are dissociated..)
MA Directed Study Opportunities for 15/16 (continued)

Prof. Sam Ling, Room 311, 677 Beacon Street 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, Room 510, 648 Beacon Street My research focuses on (1) reciprocal influences between a child’s medical illness or disability and his/her family and cultural context, (2) health disparities in autism diagnosis and treatment, and (3) the development and evaluation of psychosocial interventions for children with chronic conditions and their families. The majority of my work is carried out with families facing childhood cancer, intellectual disability, autism, and asthma.

Prof. Kathleen Malley-Morrison, Room 112B, 64 Cummington Mall At present, my major research project focuses on cross-cultural and international perspectives on war, other forms of institutional violence, and peace, in relation to variables such as nationality, gender, ethnicity, religion, and other characteristics. I am also doing some work on apology, forgiveness, and reconciliation. My research group, the Group on International Perspectives on Governmental Aggression and Peace (GIPGAP) is doing some work in collaboration with the Peace Abbey in Sherborn, MA, and are exploring the role of art in the promotion of peace. We would love some new members with artistic talents, as well as students interested in the role of the media in promoting tolerance of war or promotion of peace.

Prof. Joe McGuire, Room 212, 677 Beacon Street My research focuses on neural representation of subjective value and economic utility; self-control, persistence, and delay of gratification; forming and revising expectations in an uncertain world; and weighing the cost of mental effort.

Prof. Susan R. McGurk, Center for Psychiatric Rehabilitation, 940 Commonwealth Avenue 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. David I. Mostofsky, Room 135, 64 Cummington Mall My research interests relate to topics in Behavioral Medicine. Currently, my active research is concentrated with (1) heart rate variability (2) eating disorders (3) applications of behavioral medicine developments to treatment protocols in local and worldwide settings.
Prof. Kim T. Mueser, Center for Psychiatric Rehabilitation, 940 Commonwealth Avenue  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.

Prof. Michael W. Otto, 5th Floor, 648 Beacon Street  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.

Prof. Tibor Palfai, Room 410, 648 Beacon Street  My primary research interests are: (1) understanding the cognitive-motivational processes that underlie hazardous drinking, smoking, substance use, and related health risk behaviors (e.g., sexual risk behavior) (2) clarifying the factors that facilitate and interfere with efforts to change these behaviors, and (3) developing interventions to promote health behavior change. I am particularly interested in the study of addictive behaviors among college student and medical populations and the use of technology in intervention delivery.

Prof. Mark A Richardson, Room 232, 648 Beacon Street  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. Michele Rucci, Room 248, 64 Cummington Mall  Is the dress white/gold or black/blue? Research opportunities for students interested in how humans perceive the world are available in Michele Rucci’s Active Perception Laboratory. Ongoing studies include the development of models of the visual system, psychophysical experiments with human subjects, and experiments with robots replicating human behaviors. Note that modeling and robotic projects require a background in mathematics and programming.
MA Directed Study Opportunities for 15/16 (continued)

Prof. Kim Saudino, Room 105A, 64 Cummington Mall  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. David Somers, Room 209, 2 Cummington Mall  I am interested in the mechanisms of visual perception, recognition, and attention. How is visual information encoded in the mind and brain? How is it used for recognizing objects? How does attention modulate these representations and processes? Can we achieve a computational understanding of the brain mechanisms that support these functions? My research employs visual psychophysics and functional magnetic resonance imaging (fMRI) of human brain activity. In addition, computational modeling techniques are used. Students interested in any of these methods and topics are welcome to apply.

Prof. Helen Tager-Flusberg, Room 170E, 64 Cummington Mall  Current projects all focus on autism spectrum disorder with an emphasis on language and communicative impairments. Projects fall into three areas: infants at high risk for ASD; the psycholinguistic and neural bases for language processing in children with ASD; children and adolescents who fail to acquire spoken language. Methods include standardized behavioral assessments, observational measures, language transcription and coding, electrophysiology and MRI. Directed Study Students need to make a 2-semester commitment to working in the lab; the Directed Study is taken during the second semester. Projects focus primarily on coding observational data, language transcription and analysis. Students who can only do one semester of research can apply for internships in the lab.

Prof. Amanda Tarullo, Room 113, 64 Cummington Mall  My research focuses on brain-behavior links in early childhood. I am interested in how early life stress impacts the neural, social, and cognitive development of infants and young children. In the Brain and Early Experiences Lab, students learn to measure infant brain activity using EEG. At least one semester as a volunteer is required prior to directed study. Students with strong interests in developmental neuroscience are welcome to apply.

Prof. Martha Tompson, Room 407, 648 Beacon Street  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
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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.