

BOSTON COLLEGE

GRADUATE SCHOOL OF ARTS AND SCIENCES



GRADUATE PROGRAM

PSYCHOLOGY

THE GRADUATE PROGRAM

The Graduate Program in Psychology offers research training in five areas: Cognitive and Cognitive Neuroscience, Behavioral Neuroscience, Developmental Psychology, Social-Personality, and Quantitative Psychology. The department admits students whose interests fall within or bridge these areas. Once admitted to the program, students can participate in a cross-area training program in Neuroscience, and/or minor in Graduate Statistics. All students collaborate closely with a faculty advisor.

Our website, www.bc.edu/psychology, provides a description of our program and ongoing research in the department. Current faculty members are listed below along with selected publications. Full CVs of faculty can be found on our website. Please also contact the individual with whom you are considering working.

Cognitive and Cognitive Neuroscience

HIRAM BROWNELL

Ph.D. 1978, Johns Hopkins University

Email: hiram.brownell@bc.edu

Hiram Brownell's work is in cognitive neuropsychology. He studies how injury to various parts of the brain can selectively impair linguistic and cognitive ability. His work includes studies of theory of mind, discourse, narrative, and lexical semantics.

- ❖ Brownell, H., Griffin, R., Winner, E., Friedman, O., & Happé, F. (2000). Cerebral lateralization and theory of mind. In S. Baron-Cohen, H. Tager-Flusberg, & D. J. Cohen (Eds.), *Understanding other minds: Perspectives from autism and developmental cognitive neuroscience*, 2nd edition (pp. 311-338). Oxford: Oxford University Press.
- ❖ Brownell, H. (2000). Right hemisphere contributions to understanding lexical connotation and metaphor. In Y. Grodzinsky, L. Shapiro, & D. Swinney (Eds.), *Language and the brain* (pp. 185-201). San Diego: Academic Press.
- ❖ Griffin, R., Friedman, O., Ween, J., Winner, E., Happé, F., & Brownell, H. (2006). Theory of mind and the right cerebral hemisphere: Refining the scope of impairment. *Laterality*, 11, 195-225.

ELIZABETH KENSINGER

Ph.D. 2003, Massachusetts Institute of Technology

Email: elizabeth.kensinger@bc.edu

Elizabeth Kensinger's research combines behavioral and brain imaging techniques to examine how emotion affects the processes that are used to remember information. She is interested in understanding these cognitive and neural processes in young adults, and in identifying how these processes change across the adult lifespan.

- ❖ Kensinger EA (2009). *Emotional Memory across the Adult Lifespan*. Psychology Press, New York, NY.
- ❖ Kensinger EA (2009). How emotion affects older adults' memories for event details. *Memory*, 17, 208-219.

- ❖ Kensinger EA (2007). How negative emotion affects memory accuracy: Behavioral and neuroimaging evidence. *Current Directions in Psychological Science*, 16, 213-218.

SEAN MACEVOY

Ph.D. 2003, Brown University

Email: sean.macevoy@bc.edu

Sean MacEvoy studies the mechanisms of human visual perception, using both functional magnetic resonance imaging (fMRI) and psychophysics. He is particularly interested in the neural processes underlying object perception and recognition in complex environments, the integration of "what" and "where" information in temporal lobe visual areas, and the functional organization of visual cortex.

- ❖ MacEvoy, S.P. & Epstein, R.A. (2009). Decoding the representation of multiple simultaneous objects in human occipitotemporal cortex. *Current Biology*, 19, 943-947.
- ❖ MacEvoy, S. P., Tucker, T. R., & Fitzpatrick, D. (2009) A precise form of divisive normalization supports population coding in primary visual cortex. *Nature Neuroscience*, 12, 637-645.
- ❖ MacEvoy, S. P. & Epstein, R. A. (2007). Position selectivity in scene- and object-responsive occipitotemporal regions. *Journal of Neurophysiology*, 98, 2089-2098.

SCOTT SLOTNICK

Ph.D. 1998, University of California, Berkeley

Email: scott.slotnick@bc.edu

Scott Slotnick's research program aims to understand the nature of visual memory (i.e., memory for visual items or events). Drawing on the foundation of research in visual perception, he employs cognitive modeling (based on behavioral measures), event-related potentials (ERPs), and functional magnetic resonance imaging (fMRI). His research indicates that memory retrieval is a continuous process that is constructive in nature, where features or components from disparate cortical regions bind together to form a unified memory.

- ❖ Slotnick, S. D., Moo, L. R., Kraut, M. A., Lesser, R. P., & Hart, J. (2002). Interactions between thalamic and cortical rhythms during semantic memory recall in human. *Proceedings of the National Academy of Sciences of the United States of America*, 99, 6440-6443.
- ❖ Slotnick, S. D., & Schacter, D. L. (2004). A sensory signature that distinguishes true from false memories. *Nature Neuroscience*, 7, 664-672. Supplement.
- ❖ Slotnick, S. D., & Dodson, C. S. (2005). Support for a continuous (single-process) model of recognition memory and source memory. *Memory & Cognition*, 33, 151-170.

JOSEPH TECCE

Ph.D. 1961, Catholic University

Email: tecce@bc.edu

Joseph Tecce studies the role of attention in the understanding of stress-health associations and in the achievement of stress reduction by cognitive-behavioral methods. He also investigates the use of eyeblinks as an indicator of emotional arousal and the control of computer functions by eye movements.

- ❖ Tecce, J. J., Pok, L.J., Consiglio, M.R., and O'Neil, J.L. (2005). At-

tention impairment in electrooculographic control of computer functions. *International Journal of Psychophysiology*, 55, 159-163.

❖ Tecce, J. J., (1992). Psychology, physiological and experimental [a review of eyeblink research]. In McGraw-Hill Yearbook of Science & Technology (6th ed.) (pp. 375-377). New York: McGraw-Hill.

❖ Tecce, J. J. (1991). Dopamine and CNV: Studies of drugs, disease, and nutrition. *Electroencephalography and Clinical Neurophysiology* (Suppl. 42), 153-164.

SEE ALSO SARA CORDES, ELLEN WINNER, AND LIANE YOUNG

Behavioral Neuroscience

MICHAEL NUMAN

Ph.D. 1973, University of Chicago

Email: numan@bc.edu

Michael Numan's research focuses on the neurobiology of motivation, emotion, and social behavior. His work examines the neurobiology of parental behavior in rodents and the effects of hormones and experience on the relevant hypothalamic, limbic, and striatal circuits.

❖ Numan, M., Numan, M.J., Pliakou, N., Stolzenberg, D.S., Mullins, O.J., Murphy, J.M., and Smith, C.D. (2005). The effects of D1 or D2 dopamine receptor antagonism in the medial preoptic area, ventral pallidum, or nucleus accumbens on the maternal retrieval response and other aspects of maternal behavior in rats. *Behavioral Neuroscience*, 119, 1588-1604.

❖ Numan, M., and Stolzenberg, D.S. (2009). Medial preoptic area interactions with dopamine neural systems in the control of the onset and maintenance of maternal behavior in rats. *Frontiers in Neuroendocrinology*, 30, 46-64.

❖ Stolzenberg, D.S., McKenna, J.B., Keough, S., Hancock, R., Numan, M.J. and Numan, M. (2007). Dopamine D1 receptor stimulation of the nucleus accumbens or the medial preoptic area promotes the onset of maternal behavior in pregnancy-terminated rats. *Behavioral Neuroscience*, 121, 907-919.

GORICA D. PETROVICH

Ph.D. 1997, University of Southern California

Email: gorica.petrovich@bc.edu

Gorica Petrovich's research explores the neurobiology of the motivational and emotional control of feeding behavior. She is particularly interested in interactions between the forebrain and the hypothalamus in the control of food intake and how basic hunger mechanisms can be influenced by learning and stress. She accomplishes the research goals through the use of advanced neuroanatomical, molecular, and behavioral techniques in animal models. Her research demonstrates that the brain network formed by the amygdala, medial prefrontal cortex and lateral hypothalamus mediates control of food consumption by learned motivational cues.

❖ Petrovich, G.D. and Gallagher, M. (2007). Control of food consumption by learned cues: A forebrain-hypothalamic network. *Physiol. Behav.* 91:397:403.

❖ Petrovich, G.D., Ross, C.A., Holland, P.C., and Gallagher, M. (2007). Medial prefrontal cortex is necessary for an appetitive contextual conditioned stimulus to promote eating in sated rats. *J. Neurosci.* 27:6436-6441.

❖ Petrovich, G.D., Setlow, B., Holland, P.C., and Gallagher, M. (2002) Amygdalo-hypothalamic circuit allows learned cues to override satiety and promote eating. *J. Neurosci.* 22:8748-8753.

ALEXA H. VEENEMA

Ph.D. 2003, University of Groningen, the Netherlands

Email: psychooffice@bc.edu Attention: Alexa Veenema

Alexa Veenema studies the neural circuitry underlying social and emotional behaviors and the role of stress in mediating changes in these behaviors. She is particularly interested in how early life stress alters the development of the brain and behavior. Are stress-induced brain and behavioral changes stable across development? Can early life stress-induced brain and behavioral changes be restored, and how? To answer these and other questions animal models are used in which behavioral analysis (play-fighting, aggression, social cognition, social anxiety) is combined with molecular, neuroanatomical and in vivo brain techniques (e.g. intracerebral microdialysis) to study its underlying neurobiology, mainly by focusing on the role of stress hormones, neuropeptides and monoamines.

❖ Veenema, A.H, Beiderbeck, D.I, Lukas, M., Neumann, I.D. (2010) Distinct correlations of vasopressin release within the lateral septum and the bed nucleus of the stria terminalis with the display of intermale aggression. *Horm Behav.*, Mar 15, in press.

❖ Veenema, A.H. (2009). Early life stress, the development of aggression and neurobiological correlates: What can we learn from animal models? *Front Neuroendocrinol.* 30:497-518.

❖ Veenema, A.H., Blume, A., Niederle, D., Buwalda, B., Neumann, I.D. (2006). Effects of early life stress on adult male aggression and hypothalamic vasopressin and serotonin. *Eur. J. Neurosci.*, 24:1711-20.

Developmental

SARA CORDES

Ph.D. 2005 Rutgers University

Email: sara.cordes.1@bc.edu

Sara Cordes' research focuses on infant cognition, specifically understanding early conceptions of number and other quantities, and determining how these early numerical abilities relate to achievement in counting and mathematics later in childhood. Using primarily behavioral measures, she is working to determine factors that facilitate early numerical discrimination as well as to understand how perceptions of continuous quantities (e.g., surface area, volume) influence both infant and adult representations of number.

❖ Cordes, S. & Brannon, E. M. (2008). Quantitative competencies in infancy. *Developmental Science*, 11(6), 803-808.

❖ Cordes, S. & Brannon, E. M. (2008). Discrimination of continuous quantities in 6-month old infants: Using number is just easier. *Child Development*, 79(2), 476-489

❖ Cordes, S., Gelman, R., Gallistel, C. R., & Whalen, J. (2001). Variability signatures distinguish verbal from nonverbal counting for both large and small numbers. *Psychonomic Bulletin & Review*, 8(4), 698-707.

MICHAEL MOORE

Ph.D. 1978, Harvard University

Email: moorem@bc.edu

Michael Moore studies parent-child interactions, cognitive and emotional development, memory organization, and automatic processing. His current research interests focus on children's participation in organized sports and their understanding of the "rules of the game."

GILDA MORELLI

Ph.D. 1987, University of Massachusetts, Amherst

Email: morellig@bc.edu

Gilda Morelli examines social and cultural aspects of young children's learning and development, focusing on communities in the U.S. and Central and West Africa. She brings an interdisciplinary perspective to her research drawing on scholarship in psychology, anthropology, sociology, economics, and public policy to inform her research. Currently, Dr. Morelli is examining the role of national parks in Gabon on the well-being of children and families, and young children's emotional regulation.

❖ Rothbaum, F., Morelli, G., Rusk, N., Attachment, learning and coping: The interplay of cultural similarities and differences. In M. Gelfand, C. Y. Chiu, & Y. Hong (Eds), Annual Series *Advances in Culture and Psychology*, New York, NY: Oxford University Press. (in press, 2011).

❖ Verhoef, H., Morelli, G. A. (2007). "A Child is a Child": *Children's Fostering Experiences in Northwestern Cameroon*. *Ethos*, 235(1), pp. 33-64.

❖ Morelli, G.A., Rothbaum, F. (2007). Situating the Child in Context: Attachment Relationships and Self-Regulation in Different Cultures. In S. Kitayama, D. Cohen (Eds) *Handbook of Cultural Psychology* (500-527). New York, NY: Guilford Press.

❖ Wilkie, D. S., Morelli, G. A., Demmer, J., Starkey, M., Telfer, P., Steil, M. (2006). Parks and people. Assessing the human welfare effects of establishing protected areas for biodiversity conservation. *Conservation Biology*. 20 (1), 247-249.

KAREN ROSEN

Ph.D. 1984, Harvard University

Email: rosenk@bc.edu

Karen Rosen's work focuses on social and emotional development during infancy and early childhood. Her research on parenting and early attachment relationships has included both mothers and fathers. She has studied questions about the effects of these early attachments on emotion regulation, on sibling relationships, and on the development of problem behaviors.

❖ Rosen, K.S., & Burke, P. (1999). Multiple attachment relationships within the family: Mothers and fathers with two young children. *Developmental Psychology*, 35, 436-441.

❖ Rosen, K., & Rothbaum, F. (2003). Parent-child attachment and its implications for child development. In J.J. Ponzetti (Ed.), *International encyclopedia of marriage and family relations* (2nd edition). New York, N.Y.: Macmillan.

❖ Rothbaum, F., Rosen, K., Ujiie, T., & Uchida, N. (2002). Family systems theory, attachment theory, and culture. *Family Process*, 41, 328-350.

ELLEN WINNER

Ph.D. 1978, Harvard University

Email: winner@bc.edu

Ellen Winner's work focuses on cognition and emotion in the arts. She studies typical and atypical development in the arts, and the relationship between artistic learning and other forms of cognition.

❖ Dalebroux, A., Goldstein, T., & Winner, E. (2008). Short-Term Mood Repair through Art-Making: Positive Emotion is More Effective than Venting. *Motivation and Emotion*, 32(4), 288-295.

❖ Drake, J., & Winner, E. (2009). Precocious realists: Perceptual and cognitive characteristics. *Proceedings of the Royal Society, Philosophical Transactions Series B*. 364, 1449-1558.

❖ Hyde, K., Lerch, J., Norton, A.C., Forgeard, M., Winner, E., Evans, A., & Schlaug. Music training shapes structural brain development. *Journal of Neuroscience*, in press, 2009. 364 1449-1558.

SEE ALSO JAMES A. RUSSELL

Social - Personality Psychology

DONNAH CANAVAN

Ph.D. 1969, Columbia University

Email: canavang@bc.edu

Donnah Canavan's research interests focus on the development of individual differences, including narcissism, psychological separateness, and three orientations to achievement (fear of success, conventional success, and healthy success). Her recent studies of the effects of shared affect and enthusiasm have led to a series of studies on a new concept she calls "social energy."

❖ Canavan, D. (1991). Fear of success. In R. C. Curtis (Ed.), *Self-defeating behaviors: Experimental research, clinical impressions, and practical implications*. New York: Plenum Press.

❖ Canavan, D. (2001). Social Energy: The Consequences of Shared Affect. Symposium at New England Psychological Association Conference, Danbury, Connecticut.

❖ Canavan, D. (2002). Success and Beauty: The Motive to Contribute and the Motive to Win. Presidential Address at the 2002 New England Psychological Association Conference. Rivier College, Nashua, New Hampshire

RAMSAY LIEM

Ph.D. 1970, University of Rochester

Email: liem@bc.edu

Ramsay Liem's interests include the intergenerational transmission of political and historical trauma, human rights and mental health, and Asian American history and ethnic identity formation.

❖ Liem, R. (2003/4). History, trauma, and identity: The legacy of the Korean War for Korean Americans. *Amerasia Journal*, 29, 111-129.

❖ Liem, R., (2005). "So I've gone around in circles...": Living the Korean War. *Amerasia Journal*, 31, 157-177.

❖ Liem, R. (2007). Silencing historical trauma: The politics and psychology of memory and voice. *Peace and Conflict: Journal of Peace Psychology*, 13, 1-22.

JAMES A. RUSSELL

Ph.D. 1974, University of California, Los Angeles

Email: james.russell@bc.edu

James A. Russell's work focuses on emotion. He studies the expression and recognition of emotion through faces, children's understanding of emotion, the structure of emotional experience, cultural influences on emotion, and the distinction between mood and emotion and scientific taxonomies of each.

- ❖ Russell, J. A. (2003). Core affect and the psychological construction of emotion. *Psychological Review*, 110, 145-172.
- ❖ Russell, J. A., Bachorowski, J. A., & Fernandez Dols, J. M. (2003). Facial and vocal expression of emotion. *Annual Review of Psychology*, 54, 339-349.
- ❖ Widen, S.C. & Russell, J.A. (2008). Young children's understanding of other's emotions. In M. Lewis, J.M. Haviland-Jones, L.F. Barrett (eds.), *Handbook of Emotions*. New York, NY: Guilford.
- ❖ Russell, J. A. & Carroll, J. M. (1999). On the bipolarity of positive and negative affect. *Psychological Bulletin*, 125, 3-30.

LIANE YOUNG

Ph.D. 2008, Harvard University

Email: liane.young@bc.edu

Liane Young studies the cognitive and neural basis of human moral judgment. Her current research focuses on the role of theory of mind and emotions in moral judgment and moral behavior, as well as cultural and individual differences in moral cognition. She is also interested in conceptions of the self and free will. Her research employs methods of social psychology and cognitive neuroscience, including functional magnetic resonance imaging (fMRI), examination of patient populations with selective cognitive deficits, and modulating activity in specific brain regions using transcranial magnetic stimulation (TMS).

- ❖ Young, L., Bechara, A., Tranel, D., Damasio, H., Hauser, M., Damasio, A. (2010). Damage to prefrontal cortex impairs judgment of harmful intent. *Neuron*, 65, 845-851.
- ❖ Young, L., Camprodon, J., Hauser, M., Pascual-Leone, A., Saxe, R. (2010). Disruption of the right temporo-parietal junction with TMS reduces the role of beliefs in moral judgments. *PNAS*, 107(15), 6753-8.
- ❖ Young, L., Saxe, R. (2009) Innocent Intentions: A correlation between forgiveness for accidental harm and neutral activity. *Neuropsychologia*, 47, 2065-2072.

SEE ALSO GILDA MORELLI

Quantitative Psychology

EHRI RYU

Ph.D. 2008, Arizona State University

Email: ehri.ryu.1@bc.edu

Ehri Ryu's research interests include multilevel modeling, structural equation modeling, and analysis of longitudinal data. She is particularly interested in the assessment of goodness of model fit in multilevel structural equation modeling, different approaches to analyzing multivariate multilevel data, and modeling longitudinal relationships between multiple variables.

- ❖ Ryu, E. & West, S. G. (2009). Level-specific evaluation of model fit in multilevel structural equation modeling. *Structural Equation Modeling*, 16, 583-601.
- ❖ Ryu, E., West, S. G., & Sousa, K. H. (2009). Combining mediation and moderation: Testing relationships between symptom status, functional health, and quality of life in HIV patients. *Multivariate Behavioral Research*, 44, 213-232.
- ❖ Ryu, E., West, S. G., & Sousa, K. H. (2010). Between-person and within-person relationships in longitudinal data: Latent intercept model with correlated residuals and multivariate multilevel model. Manuscript under review.

SEE ALSO HIRAM BROWNELL, SEAN MACEVOY, AND SCOTT SLOTNICK

CROSS_AREA TRAINING

Neuroscience: Brain Mechanisms of Behavior and Cognition

Graduate students in any area may choose to focus on neuroscience with one or more of the faculty listed below. The neuroscience focus brings together researchers from different areas with shared interests in understanding the brain mechanisms underlying behavior, motivation, affect, and cognition. The coursework and research requirements for this program are designed to ensure that Psychology students are trained on cutting-edge neuroscientific methods and are exposed to multiple levels of analysis, enabling them to integrate knowledge from multiple sub-disciplines within neuroscience to inform their own lines of research. The following faculty are affiliated with the neuroscience focus.

HIRAM BROWNELL
ELIZABETH KENSINGER
SEAN MACVOY
MICHAEL NUMAN
GORICA PETROVICH
SCOTT SLOTNICK
ALEXA VEENEMA
LIANE YOUNG

Emotion

The following members of the department also have an interest in emotion. The journal *Emotion Review* is published here in the department. Graduate students in any area may participate in the Affective Science speaker series and workshop.

ELIZABETH KENSINGER
JAMES A. RUSSELL

GRADUATE STATISTICS MINOR

Graduate students in psychology and other departments can complete a minor in statistics through completion of courses in the mathematics and other departments.

EHRI RYU
HIRAM BROWNELL

OTHER RESOURCES

Students may also draw on the expertise of Professors Peter Gray and Ali Banuazizi (Political Science), and those at the Lynch School of Education (www.bc.edu/schools/lsoe) and the Carroll School of Management (www.bc.edu/schools/csom).

PLACEMENT OF OUR STUDENTS

Our recent graduates have received post-doctoral fellowships (Yale University, Martinos Center at Mass General Hospital, University of Virginia, UC Davis, Broad Institute, Boston Children's Hospital, Rutgers University Center for Cognitive Science, Yale University School of Medicine, Princeton University, Tufts University, University of Massachusetts), or have gone on to take tenure-track faculty positions (Elon University, University of OTAGA, New Zealand, University of Wisconsin at Eau Claire, University of Waterloo, California State University at Sacramento, Washington and Lee University, Manhattanville College) and to work in research positions outside of the academy (Zeldis Research Associates, BAE Systems, Gillette Advanced Technologies Center)

ADMISSION

Requirements for consideration include the application form, abstract of courses, statement of purpose, a writing sample, G.R.E. scores and three letters of recommendation. The subject G.R.E. test is optional. In addition, the Graduate School of Arts & Sciences requires that international students submit TOEFL scores.

The doctoral application deadline is December 15. Applications for masters programs are due February 1. Information about how to apply and links to the online application form can be found at www.bc.edu/gsas.



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