

# Leah H Somerville, PhD

## Contact

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## Positions

2012- Assistant Professor of Psychology  
Harvard University

## Education and Training

2008-Present Postdoctoral Fellow of Psychology in Psychiatry  
Sackler Institute for Developmental Psychobiology  
Weill Cornell Medical College

2003-2008 PhD in Psychology  
Dartmouth College

2001-2003 Research Assistant at WM Keck Laboratory for Brain Imaging & Behavior  
University of Wisconsin-Madison

1997-2001 Bachelor of Science in Psychology *summa cum laude*  
University of Wisconsin-Madison

## Funding

2010-2015 National Institute of Mental Health  
Pathway to Independence Award K99MH087813  
*Development of tonic and phasic neural systems mediating affect and anxiety*

2004-2007 National Science Foundation Graduate Research Fellowship

## Honors and Awards

2011 Samuel W. Perry III, MD Distinguished Award in Psychiatric Medicine

2010 Trainee Abstract Travel Award, Organization for Human Brain Mapping

2010 Career Development Travel Award, Anxiety Disorders Association of America

2009 Co-Director, John Merck Fund Summer Institute on the Biology of Developmental Disabilities

2008 Hannah Croasdale Graduate Scholar Award, Dartmouth College  
*College-wide award to the single graduating PhD best representing the qualities of an academic scholar*

2008 Fellow, Summer Institute in Cognitive Neuroscience

2007 AAAS Excellence in Science Award

2007 Fellow, Summer Institute in Cognitive Neuroscience  
2006 Travel Fellowship, Wisconsin Symposium on Emotion  
2005 Outstanding Presentation Award, Dartmouth College Neuroscience Day  
2004 Travel Fellowship, Wisconsin Symposium on Emotion  
2001 Phi Beta Kappa

## **Publications**

**Somerville LH**, Wagner DD, Wig GS, Moran JM, Whalen PJ, & Kelley WM (in press). Interactions between transient and sustained neural signals support the generation and regulation of anxious emotion. *Cerebral Cortex*.

**Somerville LH** & Casey BJ (2011). Response to Moshman, "Adolescents and their teenage brains." *Human Development*, 54(4), 1-17.

Jones RM, **Somerville LH**, Li J, Ruberry EJ, Libby V, Glover G, Voss HU, Ballon DJ, & Casey BJ (2011). Behavioral and neural properties of social reinforcement learning. *Journal of Neuroscience*, 31(37), 13039-13045.

Casey BJ, **Somerville LH**, Gotlib IH, Ayduk O, Franklin NT, Askren MK, Jonides J, Berman MG, Wilson NL, Teslovich T, Glover G, Zayas V, Mischel W, & Shoda Y (2011). Behavioral and neural correlates of delay of gratification 40 years later. *Proceedings of the National Academy of Sciences, USA*, 108(36), 14988-15003.

**Somerville LH\***, Hare TA\*, & Casey BJ (2011). Frontostriatal maturation predicts behavioral regulation failures to appetitive cues in adolescence. *Journal of Cognitive Neuroscience*, 23(9), 2123-2134. \*Equal author contribution

Davis FC, **Somerville LH**, Ruberry EJ, Berry A, Shin LM, & Whalen PJ (2011). A tale of two negatives: Differential memory modulation by threat-related facial expressions. *Emotion*, 11(3), 647-655.

**Somerville LH**, Fani N, & McClure-Tone EB (2011). Behavioral and neural representation of emotional facial expressions across the lifespan. *Developmental Neuropsychology*, 36(4), 1-22.

Casey BJ, Jones RM, & **Somerville LH** (2011). Braking and accelerating of the adolescent brain. *Journal of Research on Adolescence: A Decade in Review*, 21(1), 21-33.

**Somerville LH**, Kelley WM, & Heatherton TF (2010). Self-esteem modulates medial prefrontal cortical responses to evaluative social feedback. *Cerebral Cortex*, 20(12), 3005-3013.

**Somerville LH**, Whalen PJ, & Kelley WM (2010). Human bed nucleus of the stria terminalis indexes hypervigilant threat monitoring. *Biological Psychiatry*, 68(5), 416-424.

**Somerville LH** & Casey BJ (2010). Developmental neurobiology of cognitive control and motivational systems. *Current Opinion in Neurobiology*, 20(2), 1-6.

**Somerville LH**, Jones RM, & Casey BJ (2010). A time of change: Behavioral and neural correlates of adolescent sensitivity to appetitive and aversive environmental cues. *Brain & Cognition*, 72(1), 124-133.

Casey BJ, Jones RM, Levita L, Libby V, Pattwell S, Ruberry EJ, Soliman FA, & **Somerville LH** (2010). The storm and stress of adolescence: Insights from human imaging and mouse genetics. *Developmental Psychobiology*, 52(3), 225-235.

- Soliman F, Glatt CE, Levita L, Bath KG, Jones RM, Pattwell SS, Tottenham N, **Somerville LH**, Voss HU, Glover G, Ballon DJ, Lee FS, & Casey BJ (2010). A genetic variant BDNF (Val66Met) polymorphism alters extinction learning in both mouse and human. *Science*, 327, 863-866.
- Aminoff EM, Balslev D, Borroni P, Bryan RE, Chua EA, Cloutier J, Cross ES, Drew T, Funk CM, Gil-da-Costa R, Guerin SA, Hall JL, Jordan KE, Landau AN, Molnar-Szakacs I, Montaser-Kouhsari L, Olofsson JK, Quadflieg S, **Somerville LH**, Sy JL, Uddin LQ, & Yamada M (2009). The landscape of cognitive neuroscience: Challenges, rewards, and new perspectives. In M. Gazzaniga (Ed.), *The New Cognitive Neurosciences (4th ed.)*. Cambridge, MA: MIT Press.
- Whalen PJ, Johnstone T, **Somerville LH**, Nitschke JB, Polis SA, Alexander AL, Davidson RJ, & Kalin NH (2008). A functional magnetic resonance imaging predictor of treatment response to venlafaxine in generalized anxiety disorder. *Biological Psychiatry*, 63(9), 858-863.
- Somerville LH** & Whalen PJ (2006). Prior experience as a stimulus category confound: An example using facial expressions of emotion. *Social, Cognitive, and Affective Neuroscience*, 1, 271-274.
- Somerville LH**, Heatherton TF, & Kelley WM (2006). Anterior cingulate cortex responds differentially to expectancy violation and social rejection. *Nature Neuroscience*, 9(8), 1007-1008.
- Somerville LH**, Wig GS, Whalen PJ, & Kelley WM (2006). Dissociable medial temporal lobe contributions to social memory. *Journal of Cognitive Neuroscience*, 18(8), 1253-1265.
- Johnstone T, **Somerville LH**, Alexander AL, Davidson RJ, Kalin NH, & Whalen PJ (2005). Stability of amygdala BOLD response to fearful faces over multiple scan sessions. *Neuroimage*, 25(4), 1112-1123.
- Whalen PJ, Kagan J, Cook RG, Davis FC, Kim H, Polis S, McLaren DL, **Somerville LH**, McLean AA, Maxwell JS, & Johnstone T (2004). Human amygdala responsivity to masked fearful eye-whites. *Science*, 306(5704), 2061.
- Somerville LH**, Kim H, Johnstone T, Alexander AL, & Whalen PJ (2004). Human amygdala responses during presentation of happy and neutral faces: Correlations with state anxiety. *Biological Psychiatry*, 55(9), 897-903.
- Kim H, **Somerville LH**, Johnstone T, Polis S, Alexander AL, Shin LM, & Whalen PJ (2004). Contextual modulation of fMRI responsivity to surprised faces. *Journal of Cognitive Neuroscience*, 16(10), 1730-1745.
- Kim H, **Somerville LH**, Johnstone T, Alexander AL, & Whalen PJ (2003). Inverse amygdala and medial prefrontal cortex responses to surprised faces. *Neuroreport*, 14(18), 2317-2322.
- Kim H, **Somerville LH**, McLean AA, Johnstone T, Shin LM, & Whalen PJ (2003). Functional MRI responses of the human dorsal amygdala/substantia innominata region to facial expressions of emotion. *Annals of the New York Academy of Sciences*, 985, 533-535.
- Whalen PJ, Shin LM, **Somerville LH**, McLean AA, & Kim H (2002). Functional neuroimaging studies of the amygdala in depression. *Seminars in Clinical Neuropsychiatry*, 7(4), 234-242.

### Instruction

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|-----------|---|
| 2011-2012 | Course Faculty, "Hands-on Clinical fMRI and Diffusion Tractography"<br>Memorial Sloan-Kettering Cancer Center |
| 2011      | Guest Lecturer, "Psychology Live" Seminar<br>Harvard University, Department of Psychology                     |

- 2010-Present Lecturer, "Didactics Series in Developmental Neuroscience"  
Weill Cornell Medical College, Department of Psychiatry Residency Program
- 2009-Present Lecturer, "Neuron to Brain"  
Weill Cornell Medical College Graduate School, Neuroscience Program
- 2008-Present Lecturer and Lab Instructor, "Brain and Mind"  
Weill Cornell Medical College, MD Program
- 2009-2011 Lecturer and Organizer, "Summer Course in Translational Imaging"  
Weill Cornell Medical College, Sackler Institute
- 2005, 2007 Lecturer and Lab Instructor, "Brain Mapping: The Methods"  
Dartmouth College, Department of Psychological and Brain Sciences
- 2005 Teaching Assistant, "Introduction to Statistics"  
Dartmouth College, Department of Psychological and Brain Sciences
- 2004 Lab Instructor, "Experimental Research Methods"  
Dartmouth College, Department of Psychological and Brain Sciences

### **Invited Talks**

- 2012 Vanderbilt University Department of Psychiatry
- 2012 Yale University Magnetic Resonance Research Center
- 2012 Children's Hospital Boston & Harvard University Department of Education
- 2011 Brooklyn College Department of Psychology
- 2011 University of Amsterdam (Netherlands) Department of Psychology
- 2011 Leiden University (Netherlands) Department of Psychology
- 2011 Bangor University (Wales) Department of Psychology
- 2011 University of Reading (England) Department of Psychology
- 2011 Tri-Institutional NIH Career Development & Training Award Workshop
- 2011 American Museum of Natural History Alumni Brain Event
- 2011 Columbia University Department of Psychology
- 2011 Rutgers University-Newark Department of Psychology
- 2010 Harvard University Department of Psychology
- 2010 University of Texas-Austin Department of Psychology
- 2010 University of Wisconsin-Madison Department of Psychiatry and HealthEmotions Research Institute
- 2010 Rockefeller University Department of Neuroscience
- 2010 NYU Department of Psychology
- 2008 Weill Cornell Medical College, Sackler Institute for Developmental Psychobiology
- 2007 NYU Department of Psychology
- 2007 Harvard Medical School Department of Psychiatry
- 2005 Dartmouth College Neuroscience Day, *Winner, Outstanding Presentation Award*
- 2004 Harvard University Department of Psychology

### **Memberships in Professional Societies**

- 2011-Present Society for Personality and Social Psychology
- 2011-Present Society for Social Neuroscience
- 2009-Present Social and Affective Neuroscience Society
- 2008-Present New York Academy of Sciences

2004-Present Cognitive Neuroscience Society  
2002-Present Society for Neuroscience

### **Ad hoc Reviewing**

<i>Behavioral Neuroscience</i>	<i>International Journal for Behavioral</i>
<i>Biological Psychiatry</i>	<i>Development</i>
<i>Biological Psychology</i>	<i>International Journal for Methods in Psychiatric</i>
<i>Biological Research for Nursing</i>	<i>Research</i>
<i>Brain &amp; Cognition</i>	<i>Journal for Psychiatric Research</i>
<i>Brain Research</i>	<i>Journal of Cognitive Neuroscience</i>
<i>Cerebral Cortex</i>	<i>Journal of Neuroscience</i>
<i>Cognition &amp; Emotion</i>	<i>Motivation and Emotion</i>
<i>Cognitive, Affective, &amp; Behavioral Neuroscience</i>	<i>Neuroimage</i>
<i>Current Directions in Psychological Science</i>	<i>Neuroscience &amp; Biobehavioral Reviews</i>
<i>Developmental Cognitive Neuroscience</i>	<i>Proceedings of the National Academy of</i>
<i>Developmental Neuropsychology</i>	<i>Sciences USA</i>
<i>Developmental Science</i>	<i>Psychological Science</i>
<i>Emotion</i>	<i>Psychoneuroimmunology</i>
<i>Human Brain Mapping</i>	<i>Science</i>
	<i>Social, Cognitive, &amp; Affective Neuroscience</i>

### **Selected Conference Presentations**

**Somerville LH**, Jones RM, Heatherton TF, & Casey BJ (2012). Neural predictors of heightened sensitivity to social evaluative cues. Symposium talk in, "Threat's effect on the self and how the self fights back: New insights from psychological, developmental and neurobiological perspectives." Annual Meeting of the Society for Personality and Social Psychology: San Diego, CA.

**Somerville LH**, Jones RM, Mehta N, Molina JL, & Casey BJ (2011). Common and distinct neural representation of arousal during anticipatory and appraisal phases of social evaluation. Poster presentation at the Annual Meeting of the Society for Neuroscience: Washington, DC.

**Somerville LH**, Jones RM, Mehta N, Molina JL, & Casey BJ (2011). Common and distinct neural representation of arousal during anticipatory and appraisal phases of social evaluation. Poster presentation at the Society for Social Neuroscience Preconference: Washington, DC.

**Somerville LH**, Whalen PJ, & Kelley WM (2010). Subcortical and cortical predictors of hypervigilant threat monitoring with greater trait anxiety. Nanosymposium talk at the Annual Meeting of the Society for Neuroscience: San Diego, CA.

**Somerville LH**, Whalen PJ, Casey BJ, Walkup JT, & Kelley WM (2010). Dissociating brain networks mediating transient and sustained emotion: Implications for neurodevelopment of anxiety. Poster presentation at the Annual Meeting of the American Academy of Child and Adolescent Psychiatry, New York, NY.

**Somerville LH**, Hare TA, & Casey BJ (2010). Frontostriatal maturation predicts adolescents' failure to resist approach to appetitive cues. Poster presentation at the Annual Meeting of Organization for Human Brain Mapping: Barcelona, Spain.

**Somerville LH**, Hare TA, & Casey BJ (2010). Frontostriatal maturation predicts behavioral regulation failures to appetitive cues in adolescence. Poster presentation at the Annual Meeting of the Cognitive Neuroscience Society: Montreal, Canada.

- Somerville LH**, Whalen PJ, Casey BJ, & Kelley WM (2010). Dissociating brain networks mediating transient and sustained emotion: Implications for anxiety. Poster presentation at the Annual Meeting of the Anxiety Disorders Association of America: Baltimore, MD.
- Molina J\*, **Somerville LH**, Jones RM, & Casey BJ (2009). Biological correlates of socially induced state anxiety. Talk at the Annual Biomedical Research Conference for Minority Students: Phoenix, AZ. *\*Student advisee*
- Somerville LH**, Heatherton TF, & Kelley WM (2009). Low self-esteem biases neural responses to evaluative social feedback. Poster presentation at the Annual Meeting of Social & Affective Neuroscience Society: New York, NY.
- Somerville LH**, Whalen PJ, & Kelley WM (2009). A role for the ventrolateral prefrontal cortex and ventral basal forebrain in tracking proximity to threat and anxiety. Poster presentation at the Annual Meeting of the Cognitive Neuroscience Society: San Francisco, CA.
- Somerville LH** (2009). A role for the human amygdala in transient valence responding but not sustained anxiety maintenance. Slide presentation at the Social Brain Sciences Winter Summit: Ludlow, VT.
- Somerville LH**, Parker AS, Alexander DM, Whalen PJ, Shin LM, Heatherton TF, & Kelley WM (2008). Dissociable transient and sustained responses to negative stimuli and arousing contexts: A mixed design fMRI and GSR study. Talk given at the Annual Meeting of the Society for Neuroscience: Washington, DC.
- Somerville LH** (2007). Dissociable medial temporal lobe contributions to social memory. Symposium talk in, "The role of the amygdala in social/emotional cognition across development." Annual Meeting of the Society for Psychophysiological Research: Savannah, GA.
- Somerville LH**, Heatherton TF, & Kelley WM (2007). Amygdala, nucleus accumbens, and ventral ACC are engaged during anticipation of social feedback and are modulated by individual differences in self-esteem and anxiety. Poster presentation at the Annual Meeting of the Cognitive Neuroscience Society: New York, NY.
- Somerville LH**, Whalen PJ, & Kelley WM (2006). Differential roles for the amygdala and ventral prefrontal cortex in the regulation of and response to emotional pictures. Poster presentation at the Annual Meeting of the Society for Neuroscience: Atlanta, GA.
- Somerville LH**, Heatherton TF, & Kelley WM (2005). A role for anterior cingulate cortex in expectancy violation: fMRI evidence from a social feedback task. Poster presentation at the Annual Meeting of the Cognitive Neuroscience Society: New York, NY.
- Kelley WM, **Somerville LH**, & Heatherton TF (2004). Dissociating cognitive and affective contributions of the anterior cingulate cortex during a social feedback task. Poster presentation at the Annual Meeting of the Society for Neuroscience: San Diego, CA.
- Somerville LH**, Wig GS, Macrae CN, Whalen PJ, & Kelley WM (2004). Dissociable roles for the hippocampus and amygdala in the representation of socially relevant contextual knowledge. Poster presentation at the Annual Meeting of the Society for Neuroscience: San Diego, CA.
- Somerville LH**, Kim H, McLaren DG, Johnstone T, & Whalen PJ (2003). State anxiety correlates with human amygdala response during presentation of happy and neutral faces. Poster presentation at the Annual Meeting of Organization for Human Brain Mapping: New York, NY.