

Curriculum Vitae
Edward M. Hubbard

Assistant Professor
Educational Psychology
University of Wisconsin-Madison
1075F Educational Sciences
1025 West Johnson Street
Madison, WI 53706-1706

Phone: (608) 265-2607
Fax: (608) 262-0843
Email: emhubbard@wisc.edu
Email: edhubbard@gmail.com
<http://sites.google.com/site/edhubbard/>

Education

- 2004 Ph.D. Psychology and Cognitive Science
University of California, San Diego
Thesis Advisors: Professor V.S. Ramachandran
and Professor Geoffrey M. Boynton
- 2001 M.A. Experimental Psychology
University of California, San Diego
Thesis Advisor: Professor V. S. Ramachandran
- 1998 B.A. Cognitive Science
University of California, Berkeley

Professional Experience

- August 2012 – Present: Assistant Professor, Educational Psychology and Waisman Center, University of Wisconsin-Madison
- February 2011 – July 2012: Postdoctoral Affiliate of Vanderbilt Kennedy Center for Research on Human Development, Vanderbilt University.
- October 2008 – July 2012: Post-doctoral fellow: Professor Bruce McCandliss, Department of Psychology and Human Development, Vanderbilt University.
- July 2007 – Present: Consultant: Learnimation Corporation, CEO Sarah Manning, New York, NY.
- November 2004 – September 2008: NUMBRA Post-doctoral fellow. Professor Stanislas Dehaene. INSERM (French equivalent of NIH) Unité 562 “Cognitive Neuroimaging Unit.”
- August 2000 – October 2004: Graduate Research Assistant, Professors V.S. Ramachandran and G.M. Boynton, University of California, San Diego, and Salk Institute for Biological Studies.
- August 1999 – August 2000: Graduate Research Assistant, Professor V. S. Ramachandran, Department of Psychology, University of California, San Diego.
- January 1999 – August 1999: Post-B.A. Research Assistant, Professor Joseph J. Campos, Department of Psychology, University of California, Berkeley.
- January 1998 – May 1999: Undergraduate and Post-B.A. Research Assistant, Professor Stephen E. Palmer, Department of Psychology, University of California, Berkeley.

Awards and Honors

- September 2004: Fyssen Foundation Post-Doctoral Scholarship (2 years, €44,000, Declined).
- May 2001 – May 2004: NIMH Pre-Doctoral Fellowship “The Neural Basis of Number-Color Synesthesia” 1 F31 MH63585 \$75,473.00
- June – July 2001: Fellow, Summer Institute in Cognitive Neuroscience, Dartmouth College, Hanover, NH.
- June 2000 - May 2001: Geckler Graduate Student Stipend (Competitive Award) \$10,722.23
- November 2000, 2002, 2003: Departmental Travel and Research Awards

Books

Simner, J. & **Hubbard, E.M.** (Eds; Expected 2012). *The Oxford Handbook of Synaesthesia*. Oxford, UK: Oxford University Press. ISBN 9780199603329 (HB).

Peer-Reviewed Articles

- Oberman, L.M., McCleery, J.P., **Hubbard, E.M.**, Bernier, R., Wiersema, J.R. Raymakeers, R. & Pineda, J.A. (in press). Developmental changes in mu suppression to observed and executed actions in autism spectrum disorders. *Social Cognitive and Affective Neuroscience*. doi:10.1093/scan/nsr097.
- Hubbard, E.M.**, Brang, D. and Ramachandran, V.S. (2011). The cross-activation theory at 10. *5*(2):152-177 *Journal of Neuropsychology*. (doi:10.1111/j.1748-6653.2011.02014)
- Viarouge, A., **Hubbard, E. M.**, Dehaene, S. & Sackur, J. (2010). Number line compression and the illusory perception of random numbers. *Experimental Psychology*. 57(6): 446-454. (doi:10.1027/1618-3169/a000055)
- Brang, D., **Hubbard, E.M.**, Coulson, S., Huang, M. & Ramachandran, V.S. (2010). Magnetoencephalography reveals early activation of V4 in grapheme-color synesthesia. *Neuroimage*. **53**(1):268–274. (doi:10.1016/j.neuroimage.2010.06.008).
- Williams, L.E., Ramachandran, V.S., **Hubbard, E.M.**, Braff, D.L. & Light, G.A. (2010). Superior size-weight illusion performance in patients with schizophrenia: Evidence for deficits in forward models and multisensory integration. *Schizophrenia Research*. **121**(1-3):101-106. (doi:10.1016/j.schres.2009.10.021).
- Berteletti, I., **Hubbard, E.M.** & Zorzi, M. (2010). Implicit versus explicit interference effects in a number-color synesthete. *Cortex*. **46**(2): 170–177 (doi:10.1016/j.cortex.2008.12.009)
- Hubbard, E.M.**, Ranzini, M., Piazza, M. & Dehaene, S. (2009). What information is critical to elicit interference in number-form synesthesia? *Cortex: Special Issue on sequence-form synaesthesia*. **45**(10):1200-1216. (doi:10.1016/j.cortex.2009.06.011)
- Ranzini, M., Piazza, M., Dehaene, S. & **Hubbard, E.M.** (2009). Neural mechanisms of attentional shifts due to irrelevant spatial and numerical cues. *Neuropsychologia*, **47**(12): 2615-2624. (doi:10.1016/j.neuropsychologia.2009.05.011)
- Knops, A., Thirion, B., **Hubbard, E.M.**, Michel, V. & Dehaene, S. (2009). Recruitment of an area involved in eye movements during mental arithmetic. *Science*, **324**(5934):1583–1585. (doi:10.1126/science.1171599)
- Hubbard, E. M.**, Diester, I., Cantlon, J. F., Ansari, D. van Opstal, F. & Troiani, V. (2008). The evolution of numerical cognition: From number neurons to linguistic quantifiers. *Journal of Neuroscience*. **28**(46):11819 – 11824.
- Hubbard, E. M.** (2008). Synaesthesia: The sounds of moving patterns. *Current Biology*, **18**(15): R657-R659.
- Hubbard, E.M.** (2007). A real red letter day. *Nature Neuroscience*. **10**(6):671-672.
- Hubbard, E.M.** (2007). Neurophysiology of synesthesia. *Current Psychiatry Reports*. **9**(3): 193-199.
- Simner, J. & **Hubbard, E.M.** (2006). Variants of synaesthesia interact in cognitive tasks: Evidence for implicit associations and late connectivity in cross-talk theories. *Neuroscience*. **143**(3):805-814.
- Thirion, B., Duchesnay, E., **Hubbard, E.M.**, Dubois, J., Poline, J.-B., Lebihan, D. & Dehaene, S. (2006). Inverse retinotopy: Inferring the visual content of images from brain activation patterns. *Neuroimage*. **33**(4):1104-1116.
- Hubbard, E.M.**, Manohar, S. & Ramachandran, V.S. (2006). Contrast affects the strength of synesthetic colors. *Cortex: Special Issue on Synesthesia*, **42**(2): 184-194.
- Hubbard, E.M.** & Ramachandran, V.S. (2005). Neurocognitive mechanisms of synesthesia. *Neuron*, **48**(3): 509-520.
- Hubbard, E.M.**, Piazza, M., Pinel, P. & Dehaene, S. (2005b). Interactions between number and space in parietal cortex. *Nature Reviews Neuroscience*, **6**(6): 435-448.
- Hubbard, E.M.**, Arman, A.C., Ramachandran, V.S. & Boynton, G.M. (2005a). Individual differences among grapheme-color synesthetes: Brain-behavior correlations. *Neuron*, **45**(6): 975-985.
- Oberman, L.M., **Hubbard, E.M.**, McCleery, J.P., Altschuler, E.L., Ramachandran, V.S. & Pineda, J.A. (2005) EEG Evidence for Mirror Neuron dysfunction in autism. *Cognitive Brain Research*, **24**(2): 190-198.
- Hubbard, E.M.** & Ramachandran, V.S. (2004). The size-weight illusion, emulation, and the cerebellum. *Behavioral and Brain Sciences*, **27**(3): 407-408.

- Ramachandran, V.S. & **Hubbard, E.M.** (2003). The phenomenology of synaesthesia. *Journal of Consciousness Studies*, **10**(8): 49–57.
- Hubbard, E.M.** & Ramachandran, V.S. (2003). Refining the experimental lever: A reply to Shannon and Pribram. *Journal of Consciousness Studies*, **9**(3):77-84.
- Hubbard, E.M.** (2003). A discussion and review of Uttal (2001) *The New Phrenology*. *Cognitive Science Online*, **1**: 22-33. <http://cogsci-online.ucsd.edu/1/1-3.pdf>
- Ramachandran, V.S. & **Hubbard, E.M.** (2001b) Synaesthesia: A window into perception, thought and language. *Journal of Consciousness Studies*. **8**(12): 3-34.
- Ramachandran, V.S & **Hubbard, E.M.** (2001a). Psychophysical investigations into the neural basis of synesthesia. *Proceedings of the Royal Society, B.*, **268**(1470): 979-983.
- Anderson, D. I., **Hubbard, E.M.**, Campos, J. J., Barbu-Roth, M. A., Witherington, D. & Hertenstein, M. (2000) Probabilistic epigenesis, experience, and psychological development in infancy. *Infancy*, **1**(2): 245-251.
- Campos, J. J., Anderson, D. I., Barbu-Roth, M.A, **Hubbard, E.M.**, Hertenstein, M. & Witherington, D. (2000) Travel Broadens the Mind. *Infancy*, **1**(2): 149-219.

Manuscripts submitted, under revision, and in preparation

- Viarouge, A., **Hubbard, E.M.** & McCandliss, B.D. (submitted). The cognitive mechanisms of the SNARC effect: an individual differences approach. *Neuropsychologia*
- Hubbard, E.M.** & McCandliss, B.D. (under revision). The development of neural links between quantities and symbols during the early school years. *Science*.
- Viarouge, A., **Hubbard, E.M.** & Dehaene, S. (under revision) Which Spatial Reference Frames are Critical for the SNARC Effect? *Journal of Experimental Psychology: Human Perception and Performance*.
- Hubbard, E.M.**, Pinel, P., Jobert, A. LeBihan, D. & Dehaene, S. (under revision). Topographical and functional relations between calculation, multisensory processing and eye-movements in the human brain.
- Hubbard, E.M.**, Pinel, P., Jobert, A. LeBihan, D. & Dehaene, S (under revision). The place for the SNARC: Interactions between numerical and spatial representations in parietal cortex.

Book Chapters

- Hubbard, E.M.** (in press, 2013). Synesthesia [1000 word entry]. In H. Pashler (Ed.) *Encyclopedia of the Mind*. Thousand Oaks, CA. SAGE Reference.
- Hubbard, E.M.**, Brang, D. & Ramachandran, V.S. (2012) Diez años de la teoría de la interactivación" in M. José De Córdoba y Dina Riccò (Eds.) *Sinestesia: Los Fundamentos Teóricos, Artísticos y Científicos*. Granada: Ediciones Fundación Internacional Artecittà. ISBN-13: 978-84-939054-1-5.
- Hubbard, E.M.**, Piazza, M., Pinel, P. and Dehaene, S. (2009). Numerical and spatial intuitions: A role for posterior parietal cortex? In L. Tommasi, L. Nadel and M.A. Peterson (Eds.) *Cognitive Biology: Evolutionary and Developmental Perspectives on Mind, Brain and Behavior*. (pp. 221–246). Cambridge, MA: MIT Press
- Ramachandran, V.S. & **Hubbard, E.M.** (2006). Can the study of synesthesia help to explain the emergence of qualia, metaphor, language and abstract thought? In L. van Hemmen & T.J. Sejnowski (Eds.) *23 Problems in Systems Neuroscience*. (pp. 432-473) New York, NY: Oxford University Press
- Ramachandran, V.S. & **Hubbard, E.M.** (2005). The emergence of the human mind: Some clues from synesthesia. In L. Robertson & N. Sagiv (Eds.) *Synesthesia: A Cognitive Neuroscience Perspective*. (pp. 147-190) New York, NY: Oxford University Press.
- Ramachandran, V.S. & **Hubbard, E.M.** (2004). What can neuroscience teach us about human nature and the potential for change? *Aspen Foundation Symposium: The Internet and the University*. (pp. 15-33). Boulder, CO: Educause.
- Ramachandran, V.S., **Hubbard, E.M.**, & Butcher, P.A. (2004). Synesthesia, cross-activation and the foundations of neuroepistemology. In G. Calvert, C. Spence & B. Stein (Eds.) *Handbook of Multisensory Processes*. (pp. 867-883). Cambridge, MA: MIT Press.

Diffusion of Scientific Knowledge

- Ramachandran, V.S. & **Hubbard, E.M.** (2006b). Hearing colors, tasting shapes. *Scientific American Special Issue: Secrets of the Senses*. 76-83 (October, 2006; updated from Ramachandran & Hubbard, 2003).
- Ramachandran, V.S. & **Hubbard, E.M.** (2006a). La synesthésie ou la confusion des sens [Synesthesia, or the confusion of the senses]. *Cerveau et Psycho*. 72-77 (March, 2006; updated and translated from Ramachandran & Hubbard, 2003).
- Hubbard, E.M.** (2005) L'étrange monde du synesthète [The strange world of the synesthete]. *Médecine et Enfance*. 667-674 (December, 2005).
- Ramachandran, V.S. & **Hubbard, E.M.** (2005b) Hearing colors, tasting shapes. *Scientific American Mind*. 16-23 (October, 2005; updated from Ramachandran & Hubbard, 2003).
- Ramachandran, V.S. & **Hubbard, E.M.** (2005a). Hearing colors, tasting shapes. Reprinted in Axelrod, R.B., Cooper, C.R., Warriner, A.M. *Reading Critically, Writing Well: A Reader and Guide*, 7th edition, (436-452) New York: Bedford, St. Martin's Press.
- Ramachandran, V.S. & **Hubbard, E.M.** (2003). Hearing colors, tasting shapes. *Scientific American*. 52-59 (May, 2003).

Conference Organizing Responsibilities

- Scientific Program Committee (2012, February): IV International Conference on Synaesthesia, Art and Science, Almeria, Spain
- Organizing Committee: Mitchell, K., Corvin, A., Graf, I., **Hubbard, E.M.** and Polleux, F. (2011, April). Wiring the Brain: From genetic to neural networks. Dublin, Ireland.
- Co-host with Randolph Blake (2010, October) 8th Annual Meeting of the American Synesthesia Association. Nashville, TN.
- Organizing Committee: de Cordoba, M.-J., Ricco, D., Day, S. and **Hubbard, E.M.** (2009, May). III International Congress on Synaesthesia, Art and Science, Granada, Spain.
- Organizing Committee: Mitchell, K., Corvin, A., Graf, I., **Hubbard, E.M.** and Polleux, F. (2009, May). Wiring the Brain: From genetic to neural networks. Limerick, Ireland.
- Symposium Co-Chair: **Hubbard, E.M.** and Troiani, V. (2008, November). The evolution of numerical cognition: From number neurons to linguistic quantifiers. Society for Neuroscience, Washington, D.C.
- Scientific Program Committee (2007, April): II International Conference on Art and Synesthesia, Granada Spain
- Program Committee: American Synesthesia Association 2002 – Present.
- Co-host with V.S. Ramachandran (2002, May). 2nd Annual Meeting of the American Synesthesia Association. San Diego, CA
- Symposium Co-Chair: Sagiv, N. & **Hubbard, E.M.** (2002, April). The cognitive neuroscience of synesthesia. Ninth Annual meeting of the Cognitive Neuroscience Society. San Francisco, CA.

Invited Talks

- DELTA Center, University of Iowa (April 6, 2012). Synaesthesia as a window into human nature.
- Waisman Center, University of Wisconsin-Madison (March 1, 2012). Integration of quantities, symbols and space in parietal cortex: Implications for education.
- Department of Psychology, Neuroscience and Behaviour, McMaster University (January 6, 2012). Integration of quantities, symbols and space in parietal cortex: Implications for education.
- Department of Psychology, Neuroscience and Behaviour, McMaster University (January 5, 2012). Synesthesia as a window into human nature.
- Department of Educational Psychology, University of Wisconsin-Madison (December 14, 2011). Integration of quantities, symbols and space in parietal cortex: Implications for education.
- Department of Psychology, Birkbeck College, London, England (November 28, 2011). On the Origins of Human-Specific Numerical Abilities.
- American Synesthesia Association, Keynote Lecture, U.C. San Diego (October 15, 2011). The cross-activation theory at ten: Substantial progress, future challenges.

- U.K. Synaesthesia Association, Keynote Lecture, University of East London (March 26, 2011). The cross-activation theory at ten: Substantial progress, future challenges.
- U.K. Synaesthesia Association, Public Lecture, University of East London (March 25, 2011). Synesthesia as a window into human nature.
- Department of Cognitive Science, Case Western Reserve University, Cleveland, OH (April 17, 2010). Number lines: From synesthesia to education and back.
- Department of Cognitive Science, Case Western Reserve University, Cleveland, OH (April 16, 2010). Synesthesia as cross-activation between brain maps: A window into human nature.
- Department of Psychology, Sussex University, Bristol, England (January 28, 2010). How the study of synesthesia sheds light on basic cognitive and perceptual processes.
- Department of Psychology, University College London, London, England (January 26, 2010). How the study of synesthesia sheds light on basic cognitive and perceptual processes.
- John B. Pierce laboratory, Yale University (November 3, 2009). How the study of synesthesia sheds light on basic cognitive and perceptual processes.
- Department of Cognitive Science, Case Western Reserve University, Cleveland, Ohio (May 11, 2009). Cognitive Neuroscience of Mathematical Intuitions. Workshop on "Mathematics as an Emergent Phenomenon".
- Department of Psychology, University of Bern, Bern, Switzerland (September 18, 2008). Behavioral and neuroimaging investigations of synesthesia.
- Department of Psychology, University of Milan, Milan, Italy (June 12, 2008). Neural mechanisms underlying mappings between numbers and space.
- Center for Mind/Brain Sciences, University of Trento, Italy (June 11, 2008). Neural mechanisms of synesthesia.
- Center for Mind/Brain Sciences, University of Trento, Italy (June 9, 2008). Neural mechanisms underlying mappings between numbers and space.
- Laboratoire Psychologie de la Perception [Perceptual Psychology Laboratory], Paris, France (May 22, 2008). Neural mechanisms of synesthesia.
- Stanford Cognitive & Systems Neuroscience Lab, Stanford University School of Medicine (April 18, 2008). Neural mechanisms underlying mappings between numbers and space.
- Ecole des Hautes Etudes en Sciences Sociales [School for Advanced Studies in Social Sciences], Paris, France (January 29, 2008). Les bases cérébrales de la synesthésie [The cerebral basis of synesthesia]
- Department of Cognitive Science, Case Western Reserve University, Cleveland, Ohio (January 4, 2008). Neural mechanisms underlying mappings between numbers and space.
- Maastricht Brain Imaging Center, Maastricht, The Netherlands. (October 5, 2007). Neural mechanisms of synesthesia.
- Duke University, Center for Cognitive Neuroscience (May 9, 2007). Neural mechanisms subserving the mental number line.
- Brunel University, Department of Psychology (March 20, 2007). Neural mechanisms subserving the mental number line.
- University of Cambridge, Centre for Neuroscience in Education (February 27, 2007). Neural mechanisms subserving the mental number line.
- University College London, Numeracy and Literacy Series. (February 13, 2007). Neural mechanisms subserving the mental number line.
- European M1 Course in Neuroscience "Neocortex: Computation, Architecture and Development", Ecole Normale Supérieure, Lyon. (January 23, 2007) Anatomically Constrained Cross-Activation: A Grand Unified Theory of Synesthesia. Day long course on synesthesia.
- Hanover Medical School, 2nd International Conference on Synaesthesia (December 1-3, 2006). Individual differences among synaesthetes: Phenomenological, behavioral and neuroimaging measures.
- University College London, Institute of Cognitive Neuroscience (May 27, 2006). Neurocognitive Mechanisms of Synaesthesia. Part of a workshop on the Cognitive Neuroscience of Synaesthesia.
- Department of Psychology, University of Ghent, Belgium (February 6, 2006). Individual differences among grapheme-color synaesthetes: Psychophysical and neuroimaging investigations
- Department of Psychology, Louvain la Neuve, Belgium (November 22, 2005). Des différences individus entre synesthetes : Corrélations entre données comportementale et IRMf [Given in French]

- L'Institut des Sciences Cognitives, Lyon France (November 10, 2005). Individual differences among grapheme-color synaesthetes: Psychophysical and neuroimaging investigations
- University of Almeria, Spain (July 25, 2005). Perceptual and neuronal mechanisms of synesthesia. *First International Congress on Synesthesia and Art*.
- University College London, Department of Psychology (February 22, 2005). Individual differences among grapheme-color synaesthetes: Psychophysical and neuroimaging investigations.
- University of Texas, Houston Medical Center (September 7, 2004). Psychophysical and neuroimaging investigations of synesthesia.
- UCLA Brain Mapping Seminar (April 23, 2003). Different forms of synesthesia may arise from cross-activation at different stages of numerical processing.
- INSERM Unité 562 (March 10, 2003). "Higher" and "lower" forms of synaesthesia arise at different stages of numerical processing.

Conference Presentations (since 2006)

- Oberman, L.M., McCleery, J.P., **Hubbard, E.M.**, Bernier, R. Wiersema, J.R., Raymaekers, R. and Pineda, J.A. (2012, May). Developmental changes in mu suppression to observed and executed actions in autism spectrum disorders. IMFAR. Toronto, ON.
- Hubbard, E.M.** and McCandliss, B.D. (2012, March). Education-dependent brain plasticity: Mechanisms for linking quantities and symbols during the elementary school years. Cognitive Neuroscience Society Meeting, Chicago, IL.
- Hubbard, E.M.** and McCandliss, B.D. (2011, November). Frontal vs. parietal contributions to elementary school children's number concepts. Society for Neuroscience, Washington, DC.
- Viarouge, A., **Hubbard, E.M.**, Doydum, A.O., Moneta, L.A., Starkey, G.S. and McCandliss, B.D. (2011, October). Brain correlates of early math and number skills: Novel insights into K-3 number concepts. REESE PI Meeting, Washington, DC.
- Hubbard, E.M.** (2011, September). Education Dependent Brain Plasticity: Linking Quantities and Symbols during the Early Elementary School Years. Second Annual Aspen Brain Forum: The Cognitive Neuroscience of Learning: Implications for Education, Aspen, CO.
- Hubbard, E.M.** and McCandliss, B.D. (2011, June). Frontal vs. parietal contributions to elementary school children's number concepts. Human Brain Mapping Meeting, Quebec City, QC, Canada.
- Hubbard, E.M.** and McCandliss, B.D. (2011, April). Frontal vs. parietal contributions to elementary school children's number concepts. Cognitive Neuroscience Society Meeting, San Francisco, CA.
- Hubbard, E.M.**, Viarouge, A., Vitale, J. and McCandliss, B.D. (2010, July). The path is more important than the destination: mouse-movement trajectories reveal the time-course of spatial, numerical and response conflict. Attention and Performance XXIV, Abbaye de Veaux, France.
- McCandliss, B.D., Yun, C., Hannula, M., **Hubbard, E.M.**, Vitale, J. and Schwartz, D. (2010, April). "Quick, how many?" Fluency in Subitizing and 'Groupitizing' Link to Arithmetic Skills. American Educational Research Association, Denver, CO.
- Hubbard, E.M.**, Viarouge, A., Vitale, J. and McCandliss, B.D. (2010, April). The path is more important than the destination: mouse-movement trajectories reveal the time-course of spatial, numerical and response conflict. Cognitive Neuroscience Society Meeting, Montreal, QC, Canada.
- Viarouge, A., **Hubbard, E.M.** and McCandliss, B.D. (2010, April). Compressed and linear scales of numerical representation. Cognitive Neuroscience Society Meeting, Montreal, QC, Canada.
- Brang, D, **Hubbard, E.M.**, Coulson, S., Huang, M.-X. and Ramachandran, V.S. (2010, April). The timing of activation in synesthesia: A magnetoencephalography study. Cognitive Neuroscience Society Meeting, Montreal, QC, Canada.
- Brang, D, **Hubbard, E.M.**, Coulson, S., Huang, M.-X. and Ramachandran, V.S. (2010, March). The timing of activation in synesthesia: A magnetoencephalography study. U.K. Synaesthesia Association, Brighton, England.
- Hubbard, E.M.** (2009, May). Behavioral studies of numerosity and number-form synesthesia. III International Congress on Synaesthesia, Science and Art, Granada, Spain.
- Hubbard, E.M.**, Ranzini, M., Piazza, M. and Dehaene, S. (2008, November). The time-course of numerical-spatial interactions. Society for Neuroscience, Washington, D.C.

- Hubbard, E.M.**, Ranzini, M., Piazza, M. and Dehaene, S. (2008, September). On the relationship between ordinal sequences and space: The case of a number-form synaesthete. American Synesthesia Association, Hamilton, Ontario, Canada
- Rafelson, W.M., McCleery, J., **Hubbard, E.M.** and Nelson, C. (2008, May). Neural connectivity in autism: A systematic review of the neuroimaging data. International Meeting for Autism Research London, England.
- Hubbard, E.M.**, Ranzini, M., Piazza, M. and Dehaene, S. (2008, April). The time-course of numerical-spatial interactions. Cognitive Neuroscience Society, San Francisco.
- Hubbard, E.M.**, Ranzini, M., Piazza, M. and Dehaene, S. (2008, March). On the relationship between ordinal sequences and space: The case of a number-form synaesthete. UK Synaesthesia Association, Edinburgh, Scotland
- Hubbard, E.M.**, Pinel, P., Piazza, M., & Dehaene, S. (2007, November) Numerical and spatial networks underlying the mental number line. Society for Neuroscience, San Diego.
- Hubbard, E.M.** (2007, September) Numerical and spatial interactions in the parietal lobe. NUMBRA Summer School, Santorini, Greece.
- Hubbard, E.M.**, Pinel, P., Piazza, M. & Dehaene, S. (2007, May). Numerical and spatial networks underlying the mental number line. Fourteenth Cognitive Neuroscience Society Meeting, New York, NY.
- Berteletti, I., **Hubbard, E.M.** & Zorzi, M. (2007, May). Semantically elicited synaesthesia: Implicit and explicit interference effects. Fourteenth Cognitive Neuroscience Society Meeting, New York, NY.
- Hubbard, E.M.**, Simner, J. and Ward, J. (2007, March). Anatomically constrained cross-activation: A grand unified theory of synesthesia? II International Congress on Synesthesia, Science and Art, Granada, Spain.
- Hubbard, E.M.**, Simner, J. and Ward, J. (2007, March). Anatomically constrained cross-activation: A grand unified theory of synesthesia. UK Synaesthesia Association, Oxford, UK.
- Simner, J. & **Hubbard, E.M.** (2007, March). Synaesthesia in individuals with more than one variant. UK Synaesthesia Association, Oxford, UK.
- Berteletti, I., **Hubbard, E.M.** & Zorzi, M. (2007, March). Implicit versus explicit interference effects in a number-colour synaesthete. UK Synaesthesia Association, Oxford, UK.
- Berteletti, I., **Hubbard, E.M.** & Zorzi, M. (2007, January). Semantically elicited synaesthesia: A numerosity Stroop Task. Annual Neuropsychology Conference, Brixen, Italy.
- Hubbard, E.M.**, Simner, J. and Ward, J. (2007, January). Anatomically constrained cross-activation: A grand unified theory of synesthesia? American Synesthesia Association, St. Petersburg, Florida.
- Teuscher, U. and **Hubbard, E.M.** (2007, January). Neural constraints on synesthetic mappings and conceptual metaphors: The case of time and space. American Synesthesia Association, St. Petersburg, Florida.
- Hubbard, E.M.**, Pinel, P., Jobert, A. & Dehaene, S. (2006, October). The place for the SNARC: Interactions between number and space in parietal cortex. Society for Neuroscience, Atlanta, GA.
- Dehaene, S., Piazza, M., Pinel, P. & **Hubbard E.M.** (2006, July) Interactions between number and space in the human parietal lobe. 5th Forum of the Federation of European Neuroscience Societies (FENS) Vienna, Austria.
- Hubbard, E.M.**, Pinel, P. & Dehaene, S. (2006, June). Interactions between number and space in parietal cortex. NUMBRA/Grapho-game Summer School, Jyvelaska, Finland.
- Hubbard, E.M.**, Pinel, P. & Dehaene, S. (2006, June). Interactions between number and space in parietal cortex. Human Brain Mapping. Florence, Italy
- Hubbard, E.M.**, Azoulay, S. & Ramachandran, V.S. (2006, April). The impact of number-shape synesthesia in a savant's memory. Second annual meeting of the UK Synaesthesia Association. London, England.
- Thirion, B., Duchesnay, E., **Hubbard, E.M.**, Dubois, J., Poline, J.B. & Dehaene, S. (2006, April). Reading the brain visual system as an inverse problem. ISBI'06. Arlington, VA USA.

Teaching Experience

Instructor – UC San Diego

General Psychology: Cognitive Foundations (lower division): Summer 2003; Summer 2004
Psi Chi Seminar Series (lower division): Fall 2003 to Spring 2004 (three consecutive quarters).

Teaching Assistant – UC San Diego

Brain Damage and Mental Function (upper division): Fall 2000; Summer 2001; Summer 2002; Fall 2002
Introduction to Neuropsychology (upper division): Summer 2001; Summer 2002
Introduction to Cognitive Psychology (upper division): Winter 2002; Summer 2004
General Psychology: Cognitive Foundations (lower division): Winter 2000; Spring 2004
Introduction to Sensation and Perception (upper division): Summer 2000; Spring 2003
The Logic of Perception (upper division): Fall 2001
Introduction to Statistics (lower division): Winter 2001; Winter 2004

Reader – UC Berkeley

Cognitive Neuroscience (upper division): Fall 1998
Introduction to Mind and Language (upper division): Spring 1999

University Service

August 2010 – Present: Conte Center Science Outreach Advisory Board, Vanderbilt University
April 2010 – Present: Coordinator, Learning Sciences Group, Vanderbilt University
August 2002 – June 2003: Admissions Representative, Department of Psychology, University of California, San Diego (elected by graduate students).
August 2001 – June 2002: Graduate Student Representative, Department of Psychology, University of California, San Diego (elected by graduate students).
August 2000 – July 2001: Colloquium Representative, Department of Psychology, University of California, San Diego (elected by graduate students).

Editorial Service

Founding Editor (with Jorg Jewanski and Sean Day): *Intersense: Annual Review of Synesthesia in Science and the Arts*. Synaesthesia Publishers, Luxembourg. www.synaesthesia.com

Editorial Board: *Cognition* (since January 2007), *Frontiers in Cognitive Science* (since April 2010)

Ad Hoc reviewer: *Nature*; *Nature Neuroscience*; *Proceedings of the National Academy of Sciences*; *Public Library of Science, Biology*; *Current Biology*; *Proceedings of the Royal Society of London*; *Journal of Neuroscience*; *Trends in Cognitive Sciences*; *Trends in Neurosciences*; *Psychological Science*; *Journal of Cognitive Neuroscience*; *Human Brain Mapping*; *Cognitive, Affective and Behavioral Neuroscience*; *Neuropsychologia*; *Brain*; *Cognitive Neuroscience*; *Journal of Neurophysiology*; *European Journal of Neuroscience*; *Journal of Experimental Psychology: General*; *Journal of Experimental Psychology: Learning, Memory and Cognition*; *Cognitive Psychology*; *Perception*; *Attention, Perception & Psychophysics*; *Quarterly Journal of Experimental Psychology*; *Vision Research*; *Journal of Vision*; *Consciousness and Cognition*; *Journal of Experimental Child Psychology*; *Developmental Psychology*; *Cortex*; *Journal of Neurological Sciences*; *Experimental Brain Research*; *Neurocase*; *Hormones and Behavior*; *Journal of Consciousness Studies*.

Book proposal reviewer for *Oxford University Press*

Grant Reviews

Ad hoc external grant reviewer for: U.S. National Science Foundation (BCS – Perception, Action and Cognition); European Science Foundation (Consciousness in Natural and Cultural Contexts); Health Research Board, Ireland; Education and Research Fund at Trinity College; Israel Science Foundation; Agence Nationale de la Recherche (ANR), France.

Memberships

2000 – Present: American Synesthesia Association, Founding Member.
2000 – Present: Society for Neuroscience
2000 – 2003: Vision Sciences Society
1998 – Present: Cognitive Neuroscience Society

References

Professor Bruce D. McCandliss
Vanderbilt University
Peabody College #552
230 Appleton Place
Nashville, TN 37203-5721
Phone: (615) 322-3073
Fax: (615) 343-9494
bruce.mccandliss@vanderbilt.edu

Professor Stanislas Dehaene
INSERM-CEA Cognitive Neuroimaging
CEA/SAC/DSV/I2BM/NeuroSpin Center
Bât. 145, Point Courrier 156
F-91191 Gif/Yvette Cedex, France
Phone: +33 (0)1 69 08 83 90
stanislas.dehaene@cea.fr

Professor Geoffrey M. Boynton
University of Washington
Department of Psychology
Box 351525
Seattle WA 98195-1525
Phone: (206) 685-6493
gboynton@u.washington.edu

Professor V. S. Ramachandran
Department of Psychology
University of California, San Diego
9500 Gilman Dr.
La Jolla, CA 92093-0109
Phone: (858) 534-6240
vramacha@ucsd.edu

Professor Karen R. Dobkins
Department of Psychology
University of California, San Diego
9500 Gilman Dr.
La Jolla, CA 92093-0109
Phone: (858) 534-5434
kdobkins@ucsd.edu

Additional references available upon request