

## **Timothy L. Hubbard**

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### ***Educational Background***

Dartmouth College (Hanover, NH) Experimental Psychology	Ph.D.	1984-1988
University of Denver (Denver, CO) Psychology, Philosophy (summa cum laude)	B.A.	1980-1984

### ***Academic Affiliations***

Grand Canyon University (Phoenix, AZ) Senior Doctoral Dissertation Adjunct Chair College of Doctoral Studies		2017-present
Arizona State University (Tempe, AZ) Adjunct Faculty, Department of Psychology		2016-present
Texas Christian University (Fort Worth, TX) Professor of Psychology		2007-2009
Associate Professor of Psychology		1998-2007
Assistant Professor of Psychology		1995-1998
University of Arizona (Tucson, AZ) Research Associate and Adjunct Lecturer		1993-1995
Eastern Oregon State College (La Grande, OR) Assistant Professor of Psychology		1989-1993
Franklin & Marshall College (Lancaster, PA) Visiting Assistant Professor of Psychology		1988-1989

### ***Courses Taught***

Grand Canyon University (graduate) <i>Advanced Research Design, Research Continuation III, Developing the Research Proposal, Dissertation I</i>
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Texas Christian University (graduate and undergraduate)

*Perception* (graduate); *Cognition* (graduate); *Special Topics: Scientific Approaches to Study of Consciousness* (graduate); *Special Topics: Cognitive Neuroscience* (graduate); *Special Topics: Mental Representation* (graduate); *Experimental Psychology: Perception* (undergraduate); *Memory & Cognition* (undergraduate); *Human Neuropsychology* (undergraduate); *States of Consciousness* (undergraduate); *Contemporary Topics: Psychology & Music* (undergraduate); *General Psychology* (undergraduate)

University of Arizona (undergraduate)

*Sleep and Sleep Disorders*; *Cognitive Psychology*

Eastern Oregon State College (undergraduate)

*Principles of Cognitive Psychology*; *Principles of Sensation and Perception*; *Principles of Lifespan Development*; *Philosophy of Psychology*; *Sleep, Dreams, and Altered States of Consciousness*

Franklin & Marshall College (undergraduate)

*Cognitive Processes*; *Advanced Research in Human Cognition*; *Introductory Psychology (laboratory sections)*

### ***Professional Memberships***

American Indian Science and Engineering Society (Sequoyah Fellow)

Association for Psychological Science (Fellow)

International Society for Psychophysics (Executive Committee)

Phi Beta Kappa

Psychonomic Society (Fellow)

Society for Music Perception and Cognition

Vision Sciences Society

### ***Book***

Hubbard, T. L. (Ed.) (forthcoming). *Spatial biases in perception and cognition*. Cambridge, UK: Cambridge University Press.

### ***Refereed Scholarly Journal Articles***

Hubbard, T. L., & Ruppel, S. E. (in press). Changes in color and location as cues of generative transmission in perception of causality. *Visual Cognition*.

- Hubbard, T. L., & Ruppel, S. E. (in press). Representational momentum and anisotropies in nearby visual space. *Attention, Perception, & Psychophysics*.
- McCrink, K., & Hubbard, T. L. (in press). Dividing attention increases operational momentum. *Journal of Numerical Cognition*.
- Hubbard, T. L. (2017). Toward a general theory of momentum-like effects. *Behavioural Processes, 141*, 50-66.
- Hubbard, T. L. (2017). Momentum in music: Musical succession as physical motion. *Psychomusicology: Music, Mind, and Brain, 27*, 14-30.
- Hubbard, T. L., & Ruppel, S. E. (2017). Perceived causality, force, and resistance in the absence of launching. *Psychonomic Bulletin & Review, 24*, 591-596.
- Hubbard, T. L., & Ruppel, S. E. (2017). The (dynamic) mind in the cave: Representational space of cave paintings and petroglyphs. *Empirical Studies of the Arts, 35*, 67-92.
- Hutchison, J. L., Hubbard, T. L., Hubbard, N. A., & Rypma, B. (2017). Asymmetries in ear advantage for musical location and relative pitch: Effects of musical training and attention. *Perception, 46*, 745-762.
- Neuhoff, J. G., & Hubbard, T. L. (2017). Voice, speech, and language: selected papers from APCAM. *Journal of Cognitive Psychology, 29*, 1-2.
- Hubbard, T. L. (2015). Forms of momentum across time: Behavioral and psychological. *Journal of Mind and Behavior, 36*, 47-82.
- Hubbard, T. L. (2015). The varieties of momentum-like experience. *Psychological Bulletin, 141*, 1081-1119.
- Hutchison, J. L., Hubbard, T. L., Hubbard, N. A., Brigante, R., & Rypma, B. (2015). Minding the gap: An experimental assessment of musical segmentation models. *Psychomusicology: Music, Mind, and Brain, 25*, 103-115.
- Hubbard, T. L. (2014). Forms of momentum across space: Representational, operational, and attentional. *Psychonomic Bulletin & Review, 21*, 1371-1403.
- Hubbard, T. L. (2014). The flash-lag effect and related mislocalizations: Findings, properties, and theories. *Psychological Bulletin, 140*, 308-338.

- Hubbard, T. L., & Ruppel, S. E. (2014). An effect of contrast and luminance on visual representational momentum for location. *Perception, 43*, 754-766.
- Hubbard, T. L. (2013). Do the flash-lag effect and representational momentum involve similar extrapolations? *Frontiers in Psychology, 4*, 290. doi: 10.3389/fpsyg.2013.00290.
- Hubbard, T. L. (2013). Launching, entraining, and representational momentum: Evidence consistent with an impetus heuristic in perception of causality. *Axiomathes, 23*, 633-643.
- Hubbard, T. L. (2013). Phenomenal causality I: Varieties and variables. *Axiomathes, 23*, 1-42.
- Hubbard, T. L. (2013). Phenomenal causality II: Integration and implication. *Axiomathes, 23*, 485-524.
- Hubbard, T. L., & Ruppel, S. E. (2013). A Fröhlich effect and representational gravity in memory for auditory pitch. *Journal of Experimental Psychology: Human Perception and Performance, 39*, 1153-1164.
- Hubbard, T. L., & Ruppel, S. E. (2013). Displacement of location in illusory line motion. *Psychological Research/Psychologische Forschung, 77*, 260-276.
- Hubbard, T. L., & Ruppel, S. E. (2013). Ratings of causality and force in launching and shattering. *Visual Cognition, 21*, 987-1009.
- Hubbard, T. L. (2012). Causal representation and shamanic experience. *Journal of Consciousness Studies, 19*, 202-228.
- Hubbard, T. L. (2012). Visual perception of force: Comment on White (2012). *Psychological Bulletin, 138*, 616-623.
- Hutchison, J. L., Hubbard, T. L., Farrandino, B., Brigante, R., Wright, J. M., & Rypma, B. (2012). Auditory memory distortion for spoken prose. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 38*, 1469-1489.
- Hubbard, T. L., & Ruppel, S. E. (2011). Effects of spatial cuing on the onset repulsion effect. *Attention, Perception, & Psychophysics, 73*, 2236-2248.
- Hubbard, T. L., & Ruppel, S. E. (2011). Effects of temporal and spatial separation on velocity and strength of illusory line motion. *Attention, Perception, & Psychophysics, 73*, 1133-1146.

- Hubbard, T. L. (2010). Auditory imagery: Empirical findings. *Psychological Bulletin*, *136*, 302-329.
- Hubbard, T. L., & Courtney, J. R. (2010). Cross-modal influences on representational momentum and representational gravity. *Perception*, *39*, 851-862.
- Hubbard, T. L., Hutchison, J. L., & Courtney, J. R. (2010). Boundary extension: Findings and theories. *Quarterly Journal of Experimental Psychology*, *63*, 1467-1494.
- Hubbard, T. L., & Lange, M. (2010). Prior probabilities and representational momentum. *Visual Cognition*, *18*, 1063-1087.
- Hubbard, T. L., Kumar, A. M., & Carp, C. L. (2009). Effects of spatial cueing on representational momentum. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, *35*, 666-677.
- Ruppel, S. E., Fleming, C. N., & Hubbard, T. L. (2009). Representational momentum is not (totally) impervious to error feedback. *Canadian Journal of Experimental Psychology*, *63*, 49-58.
- Courtney, J. R., & Hubbard, T. L. (2008). Spatial memory and explicit knowledge: An effect of instruction on representational momentum. *Quarterly Journal of Experimental Psychology*, *61*, 1778-1784.
- Hubbard, T. L. (2008). Representational momentum contributes to motion induced mislocalization of stationary objects. *Visual Cognition*, *16*, 44-67.
- Hubbard, T. L. (2008). The inner meaning of outer space: Human nature and the celestial realm. *Advances in Latin American Psychology (Special Issue on Nurturing Human Nature)*, *26*, 52-65.
- Hubbard, T. L., & Courtney, J. R. (2008). The onset repulsion effect and motion induced mislocalization of a stationary object. *Perception*, *37*, 1386-1398.
- Motes, M. A., Hubbard, T. L., Courtney, J. R., & Rypma, B. (2008). A principal components analysis of dynamic spatial memory biases. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, *34*, 1076-1083.
- Courtney, J. R., Motes, M. A., & Hubbard, T. L. (2007). Multi- and unisensory visual flash illusions. *Perception*, *36*, 516-524.
- Hubbard, T. L. (2007). What is mental representation? And how does it relate to consciousness? *Journal of Consciousness Studies*, *14*, 37-61.

- Hubbard, T. L. (2006). Bridging the gap: Possible roles and contributions of representational momentum. *Psicologica*, 27, 1-34.
- Hubbard, T. L. (2006). Computational theory and cognition in representational momentum and related types of displacement: A reply to Kerzel. *Psychonomic Bulletin & Review*, 13, 174-177.
- Hubbard, T. L. (2005). An effect of target orientation on representational momentum. *Paideia*, 15, 207-216.
- Hubbard, T. L. (2005). Representational momentum and related displacements in spatial memory: A review of the findings. *Psychonomic Bulletin & Review*, 12, 822-851.
- Hubbard, T. L., & Motes, M. A. (2005). An effect of context on whether memory for initial position exhibits a Fröhlich Effect or an Onset Repulsion Effect. *Quarterly Journal of Experimental Psychology*, 58A, 961-979.
- Hubbard, T. L., Ruppel, S. E., & Courtney, J. R. (2005). The force of appearance: Gamma movement, naive impetus, and representational momentum. *Psicologica*, 26, 209-228.
- Collier, W. G., & Hubbard, T. L. (2004). Musical scales and brightness evaluations: Effects of pitch, direction, and scale mode. *Musicae Scientiae*, 8, 151-173.
- Hubbard, T. L. (2003). Further correspondences and similarities of shamanism and cognitive science: Mental representation, implicit processing, and cognitive structures. *Anthropology of Consciousness*, 14, 40-74.
- Hubbard, T. L., & Favretto, A. (2003). Naive impetus and Michotte's "Tool Effect." Evidence from representational momentum. *Psychological Research/Psychologische Forschung*, 67, 134-152.
- Hubbard, T. L. (2002). Some correspondences and similarities of shamanism and cognitive science: Interconnectedness, extension of meaning, and attribution of mental states. *Anthropology of Consciousness*, 13, 26-45.
- Hubbard, T. L., & Ruppel, S. E. (2002). A possible role of naive impetus in Michotte's "Launching Effect." Evidence from representational momentum. *Visual Cognition*, 9, 153-176.
- Hubbard, T. L., & Motes, M. A. (2002). Does representational momentum reflect a distortion of the length or the endpoint of a trajectory? *Cognition*, 82, B89-B99.

- Thornton, I. M., & Hubbard, T. L. (2002). Representational momentum: New findings, new directions. *Visual Cognition, 9*, 1-7.
- Collier, W. G., & Hubbard, T. L. (2001). Judgments of happiness, brightness, speed and tempo change of auditory stimuli varying in pitch and tempo. *Psychomusicology, 17*, 36-55.
- Collier, W. G., & Hubbard, T. L. (2001). Musical scales and evaluations of happiness and awkwardness: Effects of pitch, direction, and scale mode. *American Journal of Psychology, 114*, 355-375.
- Hubbard, T. L. (2001). The effect of height in the picture plane on the forward displacement of ascending and descending targets. *Canadian Journal of Experimental Psychology, 55*, 325-330.
- Hubbard, T. L., & Blessum, J. A. (2001). A structural dynamic of form: Displacements in memory for the size of an angle. *Visual Cognition, 8*, 725-749.
- Hubbard, T. L., Blessum, J. A., & Ruppel, S. E. (2001). Representational momentum and Michotte's (1946/1963) "Launching Effect" paradigm. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 27*, 294-301.
- Hubbard, T. L., & Datteri, D. L. (2001). Recognizing the component tones of a major chord. *American Journal of Psychology, 114*, 569-589.
- Hubbard, T. L., & Ruppel, S. E. (2000). Spatial memory averaging, the landmark attraction effect, and representational gravity. *Psychological Research/ Psychologische Forschung, 64*, 41-55.
- Hubbard, T. L., Matzenbacher, D. L., & Davis, S. E. (1999). Representational momentum in children: Dynamic information and analogue representation. *Perceptual and Motor Skills, 88*, 910-916.
- Hubbard, T. L., & Ruppel, S. E. (1999). Representational momentum and the landmark attraction effect. *Canadian Journal of Experimental Psychology, 53*, 242-256.
- Bootzin, R. R., Hubbard, T. L., Reiman, E. M., Bandy, D., Yun, L. S., & Munzlinger, T. G. (1998). Brain regions preferentially affected during different stages of sleep and wakefulness: A PET study. *Sleep, 21*, 272.
- Hubbard, T. L. (1998). Listeners can discriminate among major chord positions. *Perceptual and Motor Skills, 87*, 891-897.

- Hubbard, T. L. (1998). Some effects of representational friction, target size, and memory averaging on memory for vertically moving targets. *Canadian Journal of Experimental Psychology*, 52, 44-49.
- Hubbard, T. L. (1997). Target size and displacement along the axis of implied gravitational attraction: Effects of implied weight and evidence of representational gravity. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 23, 1484-1493.
- Hubbard, T. L. (1996). Consciousness and cognition beyond the body: Functionalist cognitive science and the possibility of out-of-body experiences and reincarnation. *Journal of the American Society for Psychical Research*, 90, 202-220.
- Hubbard, T. L. (1996). Displacement in depth: Representational momentum and boundary extension. *Psychological Research/Psychologische Forschung*, 59, 33-47.
- Hubbard, T. L. (1996). Representational momentum, centripetal force, and curvilinear impetus. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 22, 1049-1060.
- Hubbard, T. L. (1996). Synesthesia-like mappings of lightness, pitch, and melodic interval. *American Journal of Psychology*, 109, 219-238.
- Hubbard, T. L. (1996). The importance of a consideration of qualia to imagery and cognition. *Consciousness and Cognition*, 5, 327-358.
- Hubbard, T. L. (1995). Auditory representational momentum: Surface form, direction, and velocity effects. *American Journal of Psychology*, 108, 255-274.
- Hubbard, T. L. (1995). Cognitive representation of motion: Evidence for friction and gravity analogues. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 21, 241-254.
- Hubbard, T. L. (1995). Environmental invariants in the representation of motion: Implied dynamics and representational momentum, gravity, friction, and centripetal force. *Psychonomic Bulletin & Review*, 2, 322-338.
- Hubbard, T. L. (1994). Judged displacement: A modular process? *American Journal of Psychology*, 107, 359-373.
- Hubbard, T. L. (1994). Memory psychophysics. *Psychological Research/Psychologische Forschung*, 56, 237-250.



- Hubbard, T. L. (1994). Random cognitive activation in dreaming does not require a Cartesian theater. *Dreaming*, 4, 255-266.
- Hubbard, T. L. (1993). Cross-modality matching in memory psychophysics: Brightness and loudness. *Perceptual and Motor Skills*, 76, 1339-1357.
- Hubbard, T. L. (1993). The effects of context on visual representational momentum. *Memory & Cognition*, 21, 103-114.
- Hubbard, T. L., & Baird, J. C. (1993). The effects of size, clutter, and complexity on the vanishing point distance in visual imagery. *Psychological Research/Psychologische Forschung*, 55, 223-236.
- Hubbard, T. L. (1990). Cognitive representation of linear motion: Possible direction and gravity effects in judged displacement. *Memory & Cognition*, 18, 299-309.
- Hubbard, T. L., Kall, D., & Baird, J. C. (1989). Imagery, memory, and size-distance invariance. *Memory & Cognition*, 17, 87-94.
- Hubbard, T. L., & Baird, J. C. (1988). Overflow, first-sight, and vanishing point distances in visual imagery. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 14, 641-649.
- Hubbard, T. L., & Bharucha, J. J. (1988). Judged displacement in apparent vertical and horizontal motion. *Perception & Psychophysics*, 44, 211-221.
- Hubbard, T. L., & Stoeckig, K. (1988). Musical imagery: Generation of tones and chords. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 14, 656-667.

### ***Book Chapters and Encyclopedia Entries***

- Hubbard, T. L. (in preparation). Neural mechanisms of musical imagery. In M. Thaut & D. A. Hodges (Eds.). *The Oxford Handbook of Music and the Brain: The Neural Basis of Music Perception, Performance, Learning, and Music in Therapy and Medicine*. New York: Oxford University Press.
- Hubbard, T. L. (forthcoming). The flash-lag effect. In T. L. Hubbard (Ed.). *Spatial biases in perception and cognition*. Cambridge, UK: Cambridge University Press.
- Hubbard, T. L. (forthcoming). Representational momentum. In T. L. Hubbard (Ed.). *Spatial biases in perception and cognition*. Cambridge, UK: Cambridge University Press.

- Hubbard, T. L. (forthcoming). Aesthetics and preferences in spatial and scene composition. In T. L. Hubbard (Ed.), *Spatial biases in perception and cognition*. Cambridge, UK: Cambridge University Press.
- Hubbard, T. L. (forthcoming). Some anticipatory, kinesthetic, and dynamic aspects of auditory imagery. In M. Grimshaw, M. Walther-Hansen, & M. Knakkegaard (Eds.), *The Oxford handbook of sound and imagination*. New York: Oxford University Press.
- Hubbard, T. L. (2013). Auditory aspects of auditory imagery. In S. Lacey, & R. Lawson (Eds.), *Multisensory imagery* (pp. 51-76). New York: Springer.
- Hubbard, T. L. (2013). Auditory imagery contains more than audition. In S. Lacey, & R. Lawson (Eds.), *Multisensory imagery* (pp. 221-247). New York: Springer.
- Hubbard, T. L. (2011). Extending pragnanz: Dynamic aspects of mental representation and Gestalt principles. In L. Albertazzi, G. J. van Tonder, & D. Vishwanath (Eds.), *Perception beyond inference: The information content of visual processes* (pp. 75-108). Cambridge, MA: MIT Press.
- Hubbard, T. L. (2010). Approaches to representational momentum: Theories and models. In R. Nijhawan, & B. Khurana (Eds.), *Space and time in perception and action* (pp. 338-365). Cambridge, UK: Cambridge University Press.
- Hubbard, T. L., & Courtney, J. R. (2006). Evidence suggestive of separate visual dynamics in perception and in memory. In L. Albertazzi (Ed.), *Visual thought: The depictive space of perception* (pp. 71-98). Amsterdam: Benjamins Publishing Company.
- Hubbard, T. L. (1998). Representational momentum and other displacements in memory as evidence for nonconscious knowledge of physical principles. In S. R. Hameroff, A. W. Kaszniak, & A. C. Scott (Eds.), *Towards a science of consciousness II: The second Tucson discussions and debates* (pp. 505-512). Cambridge, MA: MIT Press.
- Hubbard, T. L. (1993). Artificial intelligence. In F. N. Magill (Ed.), *Survey of the social sciences: Psychology* (pp. 299-306). Pasadena, CA: Salem Press.
- Hubbard, T. L. (1993). Logic and reasoning. In F. N. Magill (Ed.), *Survey of the social sciences: Psychology* (pp. 1471-1478). Pasadena, CA: Salem Press.
- Hubbard, T. L. (1993). Memory and schemata. In F. N. Magill (Ed.), *Survey of the social sciences: Psychology* (pp. 1549-1556). Pasadena, CA: Salem Press.

Baird, J. C., & Hubbard, T. L. (1992). The psychophysics of visual imagery. In D. Algom (Ed.), *Psychophysical approaches to cognition* (pp. 389-440). New York: Elsevier.

Hubbard, T. L., & Stoeckig, K. (1992). The representation of pitch in musical imagery. In D. Reisberg (Ed.), *Auditory imagery* (pp. 199-235). Hillsdale, NJ: Erlbaum.

### ***Conference Proceedings and Other Non-Refereed Publications***

Hubbard, T. L. (2016). Musical succession and physical motion. In I. Skotnikova, O. Korolkova, I. Blinnikova, V. Doubrovski, V. Shedyapin, & N. Volkova (Eds.), *Fechner Day 2016 – Proceedings of the 32nd Annual Meeting of the International Society for Psychophysics* (p.70), Moscow, Russia: International Society for Psychophysics.

Hubbard, T. L., & Ruppel, S. E. (2015). Dissociation of perceived force and resistance: Implications for phenomenal causality and naïve physics. In S. Grondin, & V. Laflamme (Eds.), *Fechner Day 2015 – Proceedings of the 31st Annual Meeting of the International Society for Psychophysics* (p. 18), Quebec City, Canada: International Society for Psychophysics.

Hubbard, T. L. (2014). The varieties of momentum-like experience. In G. R. Patching, M. Johnson, E. Borg, & Å. Hellström (Eds.), *Fechner Day 2014 – Proceedings of the 30th Annual Meeting of the International Society for Psychophysics* (p. 34), Lund, Sweden: International Society for Psychophysics.

Hubbard, T. L., & Ruppel, S. E. (2014). The mind in the cave: Perception of Paleolithic paintings and petroglyphs. In G. R. Patching, M. Johnson, E. Borg, & Å. Hellström (Eds.), *Fechner Day 2014 – Proceedings of the 30th Annual Meeting of the International Society for Psychophysics* (p. 35), Lund, Sweden: International Society for Psychophysics.

Hubbard, T. L. (2013). Is the flash-lag effect a special case of representational momentum? In J. Wackermann, M. Wittmann, & W. Skrandies (Eds.), *Fechner Day 2013 – Proceedings of the 29th Annual Meeting of the International Society for Psychophysics* (p. 56), Freiburg, Germany: International Society for Psychophysics.

Hubbard, T. L., & Ruppel, S. E. (2013). Effects of contrast and background on visual representational momentum. In J. Wackermann, M. Wittmann, & W. Skrandies (Eds.), *Fechner Day 2013 – Proceedings of the 29th Annual Meeting of the International Society for Psychophysics* (p. 101), Freiburg, Germany: International Society for Psychophysics.

- Hubbard, T. L. (2011). Boundary extension as a new Gestalt principle. In D. Algom, D. Zakay, E. Chajut, S. Shaki, Y. Mama, & V. Shakuf (Eds.), *Fechner Day 2011: Proceedings of the 27th Annual Meeting of the International Society for Psychophysics* (pp. 65-70). Raanana, Israel: International Society for Psychophysics.
- Hubbard, T. L., & Ruppel, S. E. (2011). A Fröhlich effect in memory for auditory pitch: Effects of cueing and of representational gravity. In D. Algom, D. Zakay, E. Chajut, S. Shaki, Y. Mama, & V. Shakuf (Eds.), *Fechner Day 2011: Proceedings of the 27th Annual Meeting of the International Society for Psychophysics* (pp. 89-94). Raanana, Israel: International Society for Psychophysics.
- Hubbard, T. L., & Ruppel, S. E. (2010). Effects of temporal and spatial separation on velocity and strength of illusory line motion. In A. Bastianelli & G. Vidotto (Eds.), *Fechner Day 2010: Proceedings of the 26th Annual Meeting of the International Society for Psychophysics* (pp. 99-104). Padua, Italy: International Society for Psychophysics.
- de sa Teixeira, N. A., & Hubbard, T. L. (2010). Auditory motion and visual representational momentum: Effects of response method. In A. Bastianelli & G. Vidotto (Eds.), *Fechner Day 2010: Proceedings of the 26th Annual Meeting of the International Society for Psychophysics* (pp. 415-420). Padua, Italy: International Society for Psychophysics.
- Hubbard, T. L., & Courtney, J. R. (2009). Cross-modal influences on representational momentum and representational gravity. In M. A. Elliott, S. Antonijevic, S. Berthaud, P. Mulcahy, C. Martyn, B. Bargery, & H. Schmidt. (Eds.), *Fechner Day 2009: Proceedings of the 25th Annual Meeting of the International Society for Psychophysics* (pp. 173-178). Galway, Ireland: The International Society for Psychophysics.
- Hubbard, T. L., & Lange, M. (2009). Prior probabilities and representational momentum. In M. A. Elliott, S. Antonijevic, S. Berthaud, P. Mulcahy, C. Martyn, B. Bargery, & H. Schmidt. (Eds.), *Fechner Day 2009: Proceedings of the 25th Annual Meeting of the International Society for Psychophysics* (pp. 509-514). Galway, Ireland: The International Society for Psychophysics.
- Courtney, J. R., & Hubbard, T. L. (2008). Boundary extension and memory for area and distance. In B. A. Schneider, B. M. Ben-David, S. Parker, & W. Wong (Eds.), *Fechner Day 2008. Proceedings of the 24th Annual Meeting of the International Society for Psychophysics* (pp. 271-276). Toronto, Ontario: The International Society for Psychophysics.

- Hubbard, T. L. (2008). Representational momentum as a new Gestalt principle. In B. A. Schneider, B. M. Ben-David, S. Parker, & W. Wong (Eds.), *Fechner Day 2008. Proceedings of the 24th Annual Meeting of the International Society for Psychophysics* (pp. 333-338). Toronto, Ontario: The International Society for Psychophysics.
- Hubbard, T. L. (2006). Representational momentum, flash-lag, and motion capture. In D. E. Kornbrut, R. M. Msetfi, & A. W. MacRae (Eds.), *Fechner Day 2006. Proceedings of the 22nd Annual Meeting of the International Society for Psychophysics* (pp. 131-136). St. Albans, UK: The International Society for Psychophysics.
- Hubbard, T. L. (2004). The perception of causality: Insights from Michotte's launching effect, naive impetus theory, and representational momentum. In A. M. Oliveira, M. P. Teixeira, G. F. Borges, & M. J. Ferro (Eds.), *Fechner Day 2004* (pp. 116-121). Coimbra, Portugal: The International Society for Psychophysics.
- Hubbard, T. L. (2002). Mental representation reflects subjective experience: Convergent evidence from imagery and representational momentum. *Journal of Mental Imagery*, 26, 60-65.
- Hubbard, T. L. (1999). How consequences of physical principles influence mental representation: The environmental invariants hypothesis. In P. R. Killeen & W. R. Uttal (Eds.), *Fechner Day 99: The end of 20th century psychophysics. Proceedings of the 15th Annual Meeting of the International Society for Psychophysics* (pp. 274-279). Tempe, AZ: The International Society for Psychophysics.
- Hubbard, T. L. (1998). How consequences of physical principles influence mental representation: The environmental invariants hypothesis. *Proceedings of the Twentieth Annual Conference of the Cognitive Science Society* (pp. 1228). Mahwah, NJ: Erlbaum.
- Hubbard, T. L. (1997). Target size and representational momentum: A re-evaluation of the momentum metaphor. *Proceedings of the Nineteenth Annual Conference of the Cognitive Science Society* (pp. 953). Mahwah, NJ: Erlbaum.
- Hubbard, T. L. (1996). Representational momentum and boundary extension: Evidence suggestive of a more general displacement mechanism. *Proceedings of the Eighteenth Annual Conference of the Cognitive Science Society* (pp. 778). Hillsdale, NJ: Erlbaum.
- Shames, V. A., & Hubbard, T. L. (1995). Consciousness beyond the comparator. *Behavioral and Brain Sciences*, 18, 697.

- Hubbard, T. L. (1993). Auditory representational momentum: Musical schemata and modularity. *Bulletin of the Psychonomic Society*, *31*, 201-204.
- Hubbard, T. L. (1990). Scientific reduction and the possibility of parapsychology: Parallels from cognitive psychology. *Behavioral and Brain Sciences*, *13*, 384-385.
- Johnson, J., Ettinger, R. H., & Hubbard, T. L. (1990). A long time ago in a computing lab far, far, away... *Behavioral and Brain Sciences*, *13*, 670.
- Hubbard, T. L., Baird, J. C., & Ajmal, A. (1989). Different skills or different knowledge? *Behavioral and Brain Sciences*, *12*, 86-87.

### ***Published Conference Abstracts***

- Hubbard, T. L., & Ruppel, S. E. (2015). Representational space of cave paintings and petroglyphs. *Perception*, *44* (supplement), 70-71.
- Hubbard, T. L. (2010). An impetus heuristic in the perception of causality. *Perception*, *39* (supplement), 97.
- Hubbard, T. L., & Lange, M. (2009). Prior probabilities and representational momentum: A signal detection analysis. *Journal of Vision*, *9*, 692.
- Hubbard, T. L., & Ruppel, S. E. (2009). Vertical illusory line motion and representational gravity. *Perception*, *38* (supplement), 177.
- Hubbard, T. L., & Courtney, J. R. (2008). Some effects of crossmodal information on representational momentum and representational gravity. *Perception*, *37* (supplement), 114.
- Hubbard, T. L., Kumar, A. M., & Carp, C. L. (2008). Effects of spatial cue timing and relevance on representational momentum. *Journal of Vision*, *8*, 599.
- Hubbard, T. L., & Kumar, A. M. (2007). Effects of cueing attention on representational momentum. *Perception*, *36* (supplement), 186.
- Hubbard, T. L., & Courtney, J. R. (2006). Onset repulsion and onset flash-lag: Effects on a stationary stimulus. *Perception*, *35* (supplement), 218-219.
- Hubbard, T. L. (2005). Representational momentum and the line-motion illusion. *Perception*, *34* (supplement), 233.
- Hubbard, T. L. (2004). Does representational momentum contribute to the flash-lag effect? *Perception*, *33* (supplement), 156.

- Hubbard, T. L., & Ruppel, S. E. (2003). The force of appearance: Gamma movement, impetus, and representational momentum. *Perception, 32* (supplement), 145.
- Hubbard, T. L., & Motes, M. A. (2002). The Fröhlich effect and the onset repulsion effect. *Perception, 31* (supplement), 41.
- Hubbard, T. L., & Motes, M. A. (2002). Memory for initial position: A Fröhlich effect or an onset repulsion effect? *Journal of Vision, 2*, 28.
- Hubbard, T. L., & Ruppel, S. E. (2002). Naïve impetus, the launching effect, and representational momentum. *Perception, 31* (supplement), 122.
- Hubbard, T. L. (2001). How consequences of physical principles influence mental representation: Representational momentum and related types of displacement. *Perception, 30* (supplement), 102.
- Hubbard, T. L., & Motes, M. A. (2001). Does representational momentum reflect a distortion of the length or the endpoint of a trajectory? *Perception, 30* (supplement), 105.
- Favretto, A., & Hubbard, T. L. (2000). Effects of previous and succeeding target presentations on the displacement of memory for target lightness. *Perception, 29* (supplement), 19.
- Hubbard, T. L., & Favretto, A. (2000). The role of the tool in Michotte's "tool effect:" Evidence from representational momentum. *Perception, 29* (supplement), 92.
- Favretto, A., Hubbard, T. L., Brandimonte, M. A., & Gerbino, W. (1999). Effects of background luminance on representational momentum for lightness. *Perception, 28* (supplement), 77.
- Hubbard, T. L., & Favretto, A. (1999). Representational momentum in Michotte's 'launching effect' and 'tool effect' paradigms. *Perception, 28* (supplement), 44.

### ***Journal Editorial Experience***

Associate Editor

*Frontiers in Psychology, section "Cognition"* (April, 2017 – present).

### Consulting Editor

*Journal of Experimental Psychology: Human Perception and Performance* (January, 2002 – present).

*Imagination, Cognition, and Personality* (May, 2009 – present).

*Attention, Perception, & Psychophysics* (June, 2014 – present).

*Journal of Experimental Psychology: Learning, Memory, and Cognition* (January, 1998 – December, 2001).

### Guest Editor

Special issue of *Journal of Cognitive Psychology* on “Voice, Speech, and Language: Selected Papers from APCAM 2014”, January 2017 (co-edited with John G. Neuhoff).

Special issue of *Visual Cognition* on “Representational Momentum”, Jan/Feb, 2002 (co-edited with Ian M. Thornton).

### Ad-hoc Reviewer

*Acta Psychologica; American Journal on Mental Retardation; American Journal of Psychology; Anthropology of Consciousness; Applied Cognitive Psychology; Attention, Perception, & Psychophysics; Axiomathes; Behavioral and Brain Sciences; BMC Neurology; British Journal of Psychology; British Journal of Developmental Psychology; Cognition; Cognitive Science; Consciousness & Cognition; Cortex; Current Directions in Psychological Science; Developmental Science; Erkenntnis; Evolution and Human Behavior; Experimental Brain Research; Frontiers in Consciousness Research; Frontiers in Human Neuroscience; Frontiers in Psychology; Hearing Research; Imagination, Cognition, and Personality; International Journal of Comparative Psychology; Journal of Consciousness Studies; Journal of Cultural Cognitive Science; Journal of Experimental Psychology: Applied; Journal of Experimental Psychology: General; Journal of Experimental Psychology: Human Perception and Performance; Journal of Experimental Psychology: Learning, Memory, and Cognition; Journal of Mental Imagery; Journal of Mind and Behavior; Journal of the Optical Society of America; Journal of Vision; Memory & Cognition; Music Perception; NeuroImage; Neuroscience and Biobehavioral Reviews; Perception; Perceptual & Motor Skills; Philosophical Psychology; PLoS Psychology; Psychological Bulletin; Psychological Research/ Psychologische Forschung; Psychological Review; Psychological Science; Psychomusicology: Music, Mind, and Brain; Psychonomic Bulletin & Review; Quarterly Journal of*



*Experimental Psychology; Seeing and Perceiving; Vision Research; Visual Cognition*

***Presentations***

- Brigante, R. M., Hubbard, T. L., Dowling, W. J., & Rypma, B. (2017, November). *Auditory tuning judgments are influenced by visual brightness*. Poster presented at the 58th Annual Meeting of the Psychonomic Society, Vancouver, British Columbia.
- Hubbard, T. L. (2017, November). *Some methodological considerations in studies of auditory imagery*. Paper presented at the 16th Annual Auditory Perception, Cognition, and Action Meeting, Vancouver, British Columbia.
- Hubbard, T. L., & Ruppel, S. E. (2017, November). *Representational momentum and anisotropy of nearby visual space*. Paper presented at the 58th Annual Meeting of the Psychonomic Society, Vancouver, British Columbia.
- Hubbard, T. L. (2017, January). *Predicting the present: The role and robustness of representational momentum*. Colloquium presented at the Department of Psychology, Middle Tennessee State University, Murfreesboro, TN.
- Hubbard, T. L., & Ruppel, S. E. (2016, November). *Changes in color and location as potential cues of generative transmission in perception of causality*. Paper presented at the 57th Annual Meeting of the Psychonomic Society, Boston, MA.
- Hubbard, T. L. (2016, October). *Similarities in causal representation and attribution in shamanic cognition and non-shamanic cognition*. Paper presented at Science and Nonduality (SAND), San Jose, CA.
- Hubbard, T. L. (2016, August). *Musical succession as physical motion*. Paper presented at the 32nd Annual Meeting of the International Society for Psychophysics, Moscow, Russia.
- Hubbard, T. L. (2016, May). *Toward a general model of momentum-like effects*. Invited paper presented at the 39th Annual Symposium of the Society for the Quantitative Analyses of Behavior, Chicago, IL.
- Hubbard, T. L. (2015, November). *The sixth momentum: Musical succession as physical motion*. Paper presented at the 14th Annual Auditory Perception, Cognition, and Action Meeting, Chicago, IL.

- Hubbard, T. L., & Ruppel, S. E. (2015, November). *Category cues and boundary extension*. Paper presented at the 56th Annual Meeting of the Psychonomic Society, Chicago, IL.
- Hubbard, T. L., & Ruppel, S. E. (2015, August). *Dissociation of perceived force and resistance: Implications for phenomenal causality and naïve physics*. Paper presented at the 31st Annual Meeting of the International Society for Psychophysics, Quebec City, Canada.
- Hubbard, T. L., & Ruppel, S. E. (2015, August). *Representational space of cave paintings and petroglyphs*. Poster presented at the European Conference on Visual Perception, Liverpool, United Kingdom.
- Hubbard, T. L. (2015, March). *Spatial biases in perception of causality and aesthetics*. Colloquium presented at the Department of Psychology, University of Essex, Colchester, United Kingdom.
- Hubbard, T. L. (2014, November). *Rising pitch accelerates and falling pitch decelerates: An effect of representational gravity on perceived auditory motion*. Paper presented at the 13th Annual Auditory Perception, Cognition, and Action Meeting, Long Beach, CA.
- Hubbard, T. L., & Ruppel, S. E. (2014, November). *The (dynamic) mind in the cave: Looming of paleolithic paintings and petroglyphs*. Paper presented at the 55th Annual Meeting of the Psychonomic Society, Long Beach, CA.
- Hubbard, T. L. (2014, August). *The varieties of momentum-like experience*. Paper presented at the 30th Annual Meeting of the International Society for Psychophysics, Lund, Sweden.
- Hubbard, T. L., & Ruppel, S. E. (2014, August). *The mind in the cave: Perception of paleolithic paintings and petroglyphs*. Paper presented at the 30th Annual Meeting of the International Society for Psychophysics, Lund, Sweden.
- Hubbard, T. L. (2014, April). *Predicting the present: The role and reach of representational momentum*. Colloquium presented at the Department of Psychology, University of Macau, Macau S.A.R., China.
- Hubbard, T. L., & Ruppel, S. E. (2013, November). *Effects of contrast and background on visual representational momentum*. Paper presented at the 54th Annual Meeting of the Psychonomic Society, Toronto, Ontario.
- Hubbard, T. L. (2013, October). *Is the flash-lag effect a special case of representational momentum?* Paper presented at the 29th Annual Meeting of the International Society for Psychophysics, Freiburg, Germany.

- Hubbard, T. L., & Ruppel, S. E. (2013, October). *Effects of contrast and background on visual representational momentum*. Paper presented at the 29th Annual Meeting of the International Society for Psychophysics, Freiburg, Germany.
- Hubbard, T. L. (2013, April). *Extrapolating spatial location to predict the present: The role and robustness of representational momentum*. Colloquium presented at the Department of Psychology, Colorado State University – Pueblo, Pueblo, CO.
- Hubbard, T. L. (2013, January). *Extrapolating future spatial location: The role and robustness of representational momentum*. Colloquium presented at the Department of Psychology, Stephen F. Austin State University, Nacogdoches, TX.
- Hubbard, T. L., & Ruppel, S. E. (2012, November). *Effects of velocity and visual stimuli on the auditory Fröhlich effect for pitch*. Paper presented at the 11th Annual Auditory Perception, Cognition, and Action Meeting, Minneapolis, MN.
- Hubbard, T. L., & Ruppel, S. E. (2012, November). *Ratings of causality and force in launching and shattering*. Paper presented at the 53rd Annual Meeting of the Psychonomic Society, Minneapolis, MN.
- Hubbard, T. L. (2012, April). *Between the vertices: Knowledge and experience on the edges*. Colloquium presented at the Program in Interdisciplinary Studies, University of Texas at Arlington, Arlington, TX.
- Hubbard, T. L. (2012, February). *Forward shifts in remembered location: The role and robustness of representational momentum*. Colloquium presented at the Department of Psychology, Kansas State University, Manhattan, KS.
- Hubbard, T. L., & Ruppel, S. E. (2011, November). *A Fröhlich effect and representational gravity in memory for auditory pitch*. Paper presented at the 10th Annual Auditory Perception, Cognition, and Action Meeting, Seattle, WA.
- Hubbard, T. L., & Ruppel, S. E. (2011, November). *Relative velocity and relative strength of Illusory Line Motion*. Paper presented at the 52nd Annual Meeting of the Psychonomic Society, Seattle, WA.
- Hubbard, T. L. (2011, October). *Boundary extension as a new Gestalt principle*. Paper presented at the 27th Annual Meeting of the International Society for Psychophysics, Raanana, Israel.

- Hubbard, T. L., & Ruppel, S. E. (2011, October). *A Fröhlich effect in memory for auditory pitch: Effects of cueing and of representational gravity*. Paper presented at the 27th Annual Meeting of the International Society for Psychophysics, Raanana, Israel.
- Hubbard, T. L. (2011, March). *Forward shifts in remembered location: The role and robustness of representational momentum*. Colloquium presented at the Department of Psychology, University of North Texas, Denton, TX.
- Hubbard, T. L. (2011, February). *Forward shifts in spatial memory: The robustness of representational momentum*. Colloquium presented at the Department of Behavioral Sciences and Leadership, United States Air Force Academy, Colorado Springs, CO.
- Hubbard, T. L., & Ruppel, S. E. (2010, November). *Effects of spatial cueing on the onset repulsion effect*. Paper presented at the 51st Annual Meeting of the Psychonomic Society, Saint Louis, MO.
- de sa Teixeira, N. A., & Hubbard, T. L. (2010, October). *Auditory motion and visual representational momentum: Effects of response method*. Paper presented at the 26th Annual Meeting of the International Society for Psychophysics, Padua, Italy.
- Hubbard, T. L., & Ruppel, S. E. (2010, October). *Effects of temporal and spatial separation on velocity and strength of illusory line motion*. Paper presented at the 26th Annual Meeting of the International Society for Psychophysics, Padua, Italy.
- Hubbard, T. L. (2010, August). *An impetus heuristic in the perception of causality?* Poster presented at the European Conference on Visual Perception, Lausanne, Switzerland.
- Hubbard, T. L., & Ruppel, S. E. (2009, November). *Displacement of location in illusory motion*. Paper presented at the 50th Annual Meeting of the Psychonomic Society, Boston, MA.
- Hubbard, T. L., & Courtney, J. R. (2009, October). *Cross-modal influences on representational momentum and representational gravity*. Paper presented at the 25th Annual Meeting of the International Society for Psychophysics, Galway, Ireland.
- Hubbard, T. L., & Lange, M. (2009, October). *Prior probabilities and representational momentum*. Poster presented at the 25th Annual Meeting of the International Society for Psychophysics, Galway, Ireland.

- Hubbard, T. L., & Ruppel, S. E. (2009, August). *Vertical illusory line motion and implied gravitational attraction*. Poster presented at the European Conference on Visual Perception, Regensburg, Germany.
- Hubbard, T. L., & Lange, M. (2009, May). *Prior probabilities and representational momentum: A signal detection analysis*. Poster presented at the 9th Annual Meeting of the Vision Sciences Society, Naples, FL.
- Hubbard, T. L. (2009, March). *Some ways the mind anticipates and reflects the world*. Colloquium presented at the Department of Psychology, Texas State University, San Marcos, TX.
- Hubbard, T. L. (2008, November). *Perception and attribution of causality: Shamanism and cognitive science*. Paper presented at Varieties of Causality in Consciousness, Bloomington, IL.
- Hubbard, T. L. (2008, November). *The onset repulsion effect and illusory line motion*. Paper presented at the 49th Annual Meeting of the Psychonomic Society, Chicago, IL.
- Ruppel, S. E., & Hubbard, T. L. (2008, November). *Effects of auditory feedback on visual representational momentum*. Poster presented at the 49th Annual Meeting of the Psychonomic Society, Chicago, IL.
- Hubbard, T. L., & Courtney, J. R. (2008, August). *Effects of cross-modal information on representational momentum and representational gravity*. Poster presented at the European Conference on Visual Perception, Utrecht, Netherlands.
- Courtney, J. R., & Hubbard, T. L. (2008, July). *Boundary extension and memory for area and distance*. Poster presented at the 24th Annual Meeting of the International Society for Psychophysics, Toronto, Ontario.
- Hubbard, T. L. (2008, July). *Representational momentum as a new Gestalt principle*. Paper presented at the 24th Annual Meeting of the International Society for Psychophysics, Toronto, Ontario.
- Hubbard, T. L., Kumar, A. M., & Carp, C. L. (2008, May). *Effects of spatial cue timing and relevance on representational momentum*. Poster presented at the 8th Annual Meeting of the Vision Sciences Society, Naples, FL.
- Hutchison, J. L., Hubbard, T. L., & Hillis, G. A. (2007, November). *Boundary extension in the auditory domain*. Paper presented at the 48th Annual Meeting of the Psychonomic Society, Long Beach, CA.

- Ruppel, S. E., & Hubbard, T. L. (2007, November). *Effects of motion type and response method on representational momentum in a large visual display*. Poster presented at the 48th Annual Meeting of the Psychonomic Society, Long Beach, CA.
- Hubbard, T. L. (2007, June). *Some suggestive correspondences and similarities between shamanism and cognitive science*. Poster presented at the Annual Meeting of the Association for the Scientific Study of Consciousness, Las Vegas, NV.
- Hubbard, T. L., Courtney, J. R., & Uebele, A. B. (2007, April). *The onset repulsion effect and memory for a stationary stimulus*. Poster presented at the 53rd Annual Meeting of the Southwestern Psychological Association, Fort Worth, TX.
- Hutchison, J. L., Hillis, G. A., Serna, C. C., & Hubbard, T. L. (2007, April). *Auditory boundary extension: A verifiable phenomenon?* Poster presented at the 53rd Annual Meeting of the Southwestern Psychological Association, Fort Worth, TX.
- Hubbard, T. L., & Kumar, A. M. (August, 2007). *Effects of cueing attention on representational momentum*. Poster presented at the European Conference on Visual Perception, Arezzo, Italy.
- Ruppel, S. E., Fleming, C. N., & Hubbard, T. L. (May, 2007). *And yet it still moves: Error feedback and representational momentum*. Poster presented at the 19th Annual Meeting of the Association for Psychological Science, Washington, DC.
- Courtney, J. R., Hubbard, T. L., & Cargo, D. (2006, November). *Boundary extension and memory for distance*. Paper presented at the 47th Annual Meeting of the Psychonomic Society, Houston, TX.
- Courtney, J. R., & Hubbard, T. L. (2006, November). *Affecting spatial memory with explicit knowledge: Effects of instruction on representational momentum*. Poster presented at Object Perception, Attention, and Memory Conference, Houston, TX.
- Hubbard, T. L. (2006, September). *Extending pragnanz: Dynamics as simplicity*. Paper presented at the Mitteleuropa Foundation, Bolzano, Italy.
- Hubbard, T. L., & Courtney, J. R. (2006, August). *Onset repulsion and onset flash-lag: Effects on a stationary stimulus*. Poster presented at the European Conference on Visual Perception, St. Petersburg, Russia.

- Hubbard, T. L. (2006, July). *Representational momentum, flash-lag, and motion capture*. Paper presented at the 22nd Annual Meeting of the International Society for Psychophysics, St. Albans, United Kingdom.
- Cargo, D. R., Courtney, J. R., & Hubbard, T. L. (2006, April). *Examining memory for distance with close-up views*. Poster presented at the 52nd Annual Meeting of the Southwestern Psychological Association, Austin, TX.
- Collier, W. G., & Hubbard, T. L. (2006, April). *Musical scales and evaluations of speed and tempo change*. Poster presented at the 52nd Annual Meeting of the Southwestern Psychological Association, Austin, TX.
- Hubbard, T. L., & Watson, M. L. (2006, April). *Representational momentum and motion capture*. Poster presented at the 52nd Annual Meeting of the Southwestern Psychological Association, Austin, TX.
- Hutchison, J. L., Gonzales, A. C., Scott, A. A., & Hubbard, T. L. (2006, April). *Music defined: A prototype analysis*. Paper presented at the 52nd Annual Meeting of the Southwestern Psychological Association, Austin, TX.
- Hubbard, T. L. (2005, November). *Representational momentum and motion capture*. Paper presented at the 46th Annual Meeting of the Psychonomic Society, Toronto, Ontario.
- Hutchison, J. L., & Hubbard, T. L. (2005, November). *Attention and ear preference for pitch*. Paper presented at the 4th Annual Auditory Perception, Cognition, and Action Meeting, Toronto, Ontario.
- Ruppel, S. E., Fleming, C. N., & Hubbard, T. L. (2005, November). *Representational momentum: Impervious to error feedback?* Poster presented at the 46th Annual Meeting of the Psychonomic Society, Toronto, Ontario.
- Hubbard, T. L. (2005, August). *Representational momentum and the line- motion illusion*. Poster presented at the European Conference on Visual Perception, La Coruna, Spain.
- Courtney, J. R., & Hubbard, T. L. (2005, March). *Inaccuracies in duration estimation due to characteristics of click trains*. Paper presented at the 51st Annual Convention of the Southwestern Psychological Association, Memphis, TN.
- Courtney, J. R., & Hubbard, T. L. (2004, November). *Possible asymmetries and effects of attention in boundary extension*. Paper presented at the 45th Annual Meeting of the Psychonomic Society, Minneapolis, MN.

- Hubbard, T. L. (2004, November). *What is mental representation and what does it have to do with consciousness?* Paper presented at Concepts of Consciousness, Bloomington, IL.
- Hutchison, J. L., & Hubbard, T. L. (2004, November). *Segmenting musical phrases: A comparison of approaches.* Paper presented at the 3rd Annual Auditory Perception, Cognition, and Action Meeting, Minneapolis, MN.
- Hubbard, T. L. (2004, October). *The perception of causality: Insights from Michotte's launching effect, naive impetus theory, and representational momentum.* Paper presented at Fechner Day 2004: XXth Annual Meeting of the International Society for Psychophysics, Coimbra, Portugal.
- Hubbard, T. L. (2004, August). *Does representational momentum contribute to the flash-lag effect?* Poster presented at the European Conference on Visual Perception, Budapest, Hungary.
- Hubbard, T. L., & Courtney, J. R. (2004, June). *Evidence suggestive of separate visual dynamics in perception and memory.* Paper presented at the Mitteleuropa Foundation, Bolzano, Italy.
- Hubbard, T. L. (2004, April). *Bridging the gap between perception and action: Some ways the mind reflects and anticipates the world.* Keynote Address at the 30th Annual Psychology Research Conference at Rowan University, Glassboro, NJ.
- Courtney, J. R., Hubbard, T. L., & Motes, M. A. (2003, November). *Sound induced illusory flash: Reproduction or broken up?* Paper presented at Auditory Perception, Cognition, and Action Meeting, Vancouver, British Columbia.
- Hubbard, T. L., & Courtney, J. R. (2003, November). *Dynamics of a stationary aesthetic form: A preliminary study.* Paper presented at the 44th Annual Meeting of the Psychonomic Society, Vancouver, British Columbia.
- Hubbard, T. L., & Ruppel, S. E. (2003, September). *The force of appearance: Gamma motion, impetus, and representational momentum.* Poster presented at the European Conference on Visual Perception, Paris, France.
- Courtney, J. R., Motes, M. A., & Hubbard, T. L. (2003, April). *Now you see it, now you see it again: Auditory tones and illusory visual flashes.* Paper presented at the 49th Annual Convention of the Southwestern Psychological Association, New Orleans, LA.
- Hubbard, T. L. (2003, April). *Suggestive similarities and correspondences of shamanic cognition and non-shamanic cognition.* Paper presented at the



Spring Meeting of the Society for the Anthropology of Consciousness, Las Vegas, NV.

- Hubbard, T. L. (2002, September). *Some ways in which invariant physical principles may influence space perception and action*. Paper presented at Visual Space Perception and Action, Ohlstadt, Germany.
- Hubbard, T. L. (2002, August). *Bridging the gap between sensation and response: Representational momentum and related displacements as aids in spatial localization*. Invited Address at Visual Localization in Space-Time, Brighton, United Kingdom.
- Hubbard, T. L. (2002, April). *Some cognitive aspects of shamanism*. Paper presented at Toward a Science of Consciousness 2002 (Tucson V), Tucson, AZ.
- Hubbard, T. L., & Courtney, J. R. (2002, November). *Does the cognitive representation of melodic interval correspond to an interval scale?* Auditory Perception, Cognition, and Action Meeting, Kansas City, MO.
- Hubbard, T. L., & Ruppel, S. E. (2002, August). *Naïve impetus, the launching effect, and representational momentum*. Paper presented at the European Conference on Visual Perception, Glasgow, Scotland.
- Hubbard, T. L., Ruppel, S. E., & Motes, M. A. (2002, August). *The force of appearance: Gamma motion, impetus, and representational momentum*. Poster presented at Visual Localization in Space-Time, Brighton, United Kingdom.
- Hubbard, T. L., & Motes, M. A. (2002, August). *The Fröhlich Effect and the Onset Repulsion Effect*. Paper presented at the European Conference on Visual Perception, Glasgow, Scotland.
- Hubbard, T. L., & Motes, M. A. (2002, May). *Memory for initial position: A Fröhlich Effect or an Onset Repulsion Effect?* Poster presented at the 2nd Annual Meeting of the Vision Sciences Society, Sarasota, FL.
- Motes, M. A., Hubbard, T. L., Bailey, L. K., & McCright, E. R. (2002, November). *Is there a controlled component to dynamic attending?* Paper presented at the 43rd Annual Meeting of the Psychonomic Society, Kansas City, MO.
- Hubbard, T. L. (2001, November). *How consequences of physical principles influence mental representation: Representational momentum and related types of displacement*. Paper presented at the Annual Meeting of Sigma Xi, the Scientific Research Society, Raleigh, NC.

- Hubbard, T. L. (2001, October). *How consequences of physical principles influence mental representation: Representational momentum and related types of displacement*. Paper presented at Armadillo-12, Dallas, TX.
- Hubbard, T. L. (2001, August). *How consequences of physical principles influence mental representation: Representational momentum and related types of displacement*. Paper presented at the European Conference on Visual Perception, Kusadasi, Turkey.
- Hubbard, T. L. (2001, March). *How consequences of physical principles influence mental representation*. Paper presented at the Annual Meeting of the Southwestern and Rocky Mountain Division of the American Association for the Advancement of Science, Denton, TX.
- Hubbard, T. L., & Motes, M. A. (2001, August). *Does representational momentum reflect a distortion of the length or the endpoint of a trajectory?* Paper presented at the European Conference on Visual Perception, Kusadasi, Turkey.
- Hubbard, T. L., & Motes, M. A. (2001, November). *Does representational momentum reflect a distortion of the length or the endpoint of a trajectory?* Paper presented at the 42nd Annual Meeting of the Psychonomic Society, Orlando, FL.
- Motes, M. A., & Hubbard, T. L. (2001, March). *Effects of height in the picture plane and of linear perspective cues on representational momentum*. Poster presented at the Annual Meeting of the Southwestern and Rocky Mountain Division of the American Association for the Advancement of Science, Denton, TX.
- Blessum, J. A., & Hubbard, T. L. (2000, April). *Representational momentum and field dependence/independence*. Poster presented at the 46th Annual Convention of the Southwestern Psychological Association, Dallas, TX.
- Datteri, D. L., & Hubbard, T. L. (2000, August). *The influences of a concurrent auditory frequency on the perception of an ambiguous visual stimulus*. Paper presented at the International Conference on Music Perception and Cognition, Keele University, United Kingdom.
- Favretto, A., & Hubbard, T. L. (2000, August). *Effects of previous and succeeding target presentations on the displacement of memory for target lightness*. Poster presented at the European Conference on Visual Perception, Groningen, Netherlands.
- Favretto, A., & Hubbard, T. L. (2000, April). *Temporal lightness changes are misremembered: A comparative study of methods for estimation of memory*

*displacements*. Poster presented at the Annual Meeting of the Association for Research in Vision and Ophthalmology, Fort Lauderdale, FL.

- Hubbard, T. L., & Favretto, A. (2000, September). *Dynamic events: Displacements in memory for target lightness*. Paper presented at RepMo2000: New Findings, New Directions, New Connections: The First International Workshop on Representational Momentum, Tübingen, Germany.
- Hubbard, T. L., & Favretto, A. (2000, August). *The role of the tool in Michotte's "Tool Effect: " Evidence from representational momentum*. Poster presented at the European Conference on Visual Perception, Groningen, Netherlands.
- Hubbard, T. L., & Ruppel, S. E. (2000, September). *A possible role of naïve impetus in Michotte's "Launching Effect: " Evidence from representational momentum*. Paper presented at RepMo2000: New Findings, New Directions, New Connections: The First International Workshop on Representational Momentum, Tübingen, Germany.
- Hubbard, T. L., Ruppel, S. E., & Favretto, A. (2000, November). *Representational momentum, naive impetus, and the launching effect*. Paper presented at the 41st Annual Meeting of the Psychonomic Society, New Orleans, LA.
- Motes, M. A., & Hubbard, T. L. (2000, April). *Colors and words as primes: A tale of two systems*. Paper presented at the 46th Annual Convention of the Southwestern Psychological Association, Dallas, TX.
- Motes, M. A., Ruppel, S. E., & Hubbard, T. L. (2000, April). *Luminance and visual illusions*. Paper presented at the 46th Annual Convention of the Southwestern Psychological Association, Dallas, TX.
- Ruppel, S. E., & Hubbard, T. L. (2000, April). *Some dynamics of pointing: Priming a direction of displacement*. Paper presented at 46th Annual Convention of the Southwestern Psychological Association, Dallas, TX.
- Hubbard, T. L., Ruppel, S. E., & Blessum, J. A. (1999, November). *Representational momentum and Michotte's "Launching Effect" paradigm*. Paper presented at the 40th Annual Meeting of the Psychonomic Society, Los Angeles, CA.
- Hubbard, T. L. (1999, October). *How consequences of physical principles influence mental representation: The environmental invariants hypothesis*. Poster presented at the FechnerDay99 Conference of the International Society for Psychophysics, Tempe, AZ.

- Favretto, A., Hubbard, T. L., Brandimonte, M. A., & Gerbino, W. (1999, August). *Effects of background luminance on representational momentum for lightness*. Poster presented at the European Conference on Visual Perception, Trieste, Italy.
- Hubbard, T. L., & Datteri, D. L. (1999, August). *Recognizing the parts of a major chord: The fifth is dominant*. Paper presented at the 1999 Conference of the Society for Music Perception and Cognition, Evanston, IL.
- Hubbard, T. L., & Favretto, A. (1999, August). *Representational momentum in Michotte's "Launching Effect" and "Tool Effect" paradigms*. Paper presented at the European Conference on Visual Perception, Trieste, Italy.
- Datteri, D. L., & Hubbard, T. L. (1999, April). *Recognizing parts of a major chord: The fifth is dominant*. Poster presented at the 45th Annual Convention of the Southwestern Psychological Association, Albuquerque, NM.
- Hubbard, T. L., & Blessum, J. A. (1999, April). *Perceived causality and the transfer of representational momentum*. Paper presented at the 45th Annual Convention of the Southwestern Psychological Association, Albuquerque, NM.
- Ruppel, S. E., & Hubbard, T. L. (1999, April). *Perceived causality, displacement, and the "Triggering Effect."* Paper presented at the 45th Annual Convention of the Southwestern Psychological Association, Albuquerque, NM.
- Hubbard, T. L., & Ruppel, S. E. (1998, November). *Some effects of a landmark on displacement in spatial memory*. Paper presented at the 39th Annual Meeting of the Psychonomic Society, Dallas, TX.
- Hubbard, T. L. (1998, August). *How consequences of physical principles influence mental representation: The environmental invariants hypothesis*. Poster presented at the 20th Annual Conference of the Cognitive Science Society, Madison, WI.
- Bootzin, R. R., Hubbard, T. L., Reiman, E. M., Bandy, D., Yun, L. S., & Munzlinger, T. (1998, June). *Brain regions preferentially affected during different stages of sleep and wakefulness: a PET study*. Paper presented at the 12th Annual Meeting of the Associated Professional Sleep Societies, New Orleans, LA.
- Collier, W. G., & Hubbard, T. L. (1998, April). *Judgments of happiness, brightness, and velocity of musical scales*. Poster presented at the 1998

Joint Meeting of the Western Psychological Association and the Rocky Mountain Psychological Association, Albuquerque, NM.

- Datteri, D. L., & Hubbard, T. L. (1998, April). *Scale degree and completions of a major chord*. Poster presented at the 44th Annual Convention of the Southwestern Psychological Association, New Orleans, LA.
- Davis, S. E., Matzenbacher, D. L., & Hubbard, T. L. (1998, April). *Implicit rule learning of paired visual and auditory stimuli*. Poster presented at the 44th Annual Convention of the Southwestern Psychological Association, New Orleans, LA.
- Galvin, P., & Hubbard, T. L. (1998, April). *Prototype analysis of religious individuals*. Poster presented at the 44th Annual Convention of the Southwestern Psychological Association, New Orleans, LA.
- Hubbard, T. L., Reiman, E. M., Bootzin, R. R., Bandy, D., Yun, L. S., & Munzlinger, T. G. (1998, April). *Brain regions preferentially affected during different stages of sleep and wakefulness: A PET study*. Paper presented at Toward a Science of Consciousness 1998 (Tucson III), Tucson, AZ.
- Hubbard, T. L., & Riggins, T. (1998, April). *Effects of target orientation on representational momentum*. Poster presented at the 44th Annual Convention of the Southwestern Psychological Association, New Orleans, LA.
- Hubbard, T. L., & Ruppel, S. E. (1998, April). *Some effects of a landmark on memory for spatial position*. Poster presented at the 44th Annual Convention of the Southwestern Psychological Association, New Orleans, LA.
- Collier, W. G., & Hubbard, T. L. (1997, November). *The happiness, brightness, and speed of musical pitch and tempo*. Paper presented at the 50th Anniversary Meeting of the Texas Psychological Association, Austin, TX.
- Hubbard, T. L. (1997, November). *Visual weight, height in the picture plane, and representational gravity*. Paper presented at the 38th Annual Meeting of the Psychonomic Society, Philadelphia, PA.
- Hubbard, T. L. (1997, August). *Target size and representational momentum: A re-evaluation of the momentum metaphor*. Poster presented at the 19th Annual Meeting of the Cognitive Science Society, Stanford, CA.

- Collier, W. G., & Hubbard, T. L. (1997, April). *Implied direction and affect in musical minor scales*. Poster presented at the 43rd Annual Convention of the Southwestern Psychological Association, Fort Worth, TX.
- Davis, S. E., Collier, W. G., & Hubbard, T. L. (1997, April). *The effects of auditory clutter on duration estimation*. Poster presented at the 43rd Annual Convention of the Southwestern Psychological Association, Fort Worth, TX.
- Hubbard, T. L., Datteri, D. L., & May, M. J. (1997, April). *Harmonic priming: The importance of chord inversion and scale degree*. Paper presented at the 43rd Annual Convention of the Southwestern Psychological Association, Fort Worth, TX.
- Hubbard, T. L., Moon, J. A., & May, M. J. (1997, April). *Some dynamics of a pointing shape*. Poster presented at the 43rd Annual Convention of the Southwestern Psychological Association, Fort Worth, TX.
- Matzenbacher, D. L., Davis, S. E., & Hubbard, T. L. (1997, April). *Potential influences of surface form on representational momentum: Some developmental data*. Poster presented at the 1997 Biennial Conference of the Society for Research in Child Development, Washington, DC.
- Hubbard, T. L. (1997, March). *Invariant physical principles may have shaped mental representation*. Paper presented at the Annual Meeting of the Southern Society for Philosophy and Psychology, Atlanta, GA.
- Hubbard, T. L. (1996, November). *Target size and displacement along the gravity axis*. Poster presented at the 37th Annual Meeting of the Psychonomic Society, Chicago, IL.
- Hubbard, T. L. (1996, July). *Representational momentum and boundary extension: Evidence suggestive of a more general displacement mechanism*. Poster presented at the 18th Annual Meeting of the Cognitive Science Society, San Diego, CA.
- Hubbard, T. L. (1996, April). *Descriptive knowledge is not the same as experiential knowledge*. Paper presented at Toward a Science of Consciousness 1996 (Tucson II), Tucson, AZ.
- Hubbard, T. L. (1996, April). *Representational momentum and other displacements in memory as evidence for nonconscious knowledge of physical principles*. Poster presented at Toward a Science of Consciousness 1996 (Tucson II), Tucson, AZ.

- Hubbard, T. L. (1995, November). *Representational momentum, centripetal force, and curvilinear impetus*. Poster presented at the 36th Annual Meeting of the Psychonomic Society, Los Angeles, CA.
- Shames, V. A., Hubbard, T. L., & Graham, T. F. (1995, November). *Interval structure in implicit learning of pitch and rhythm*. Poster presented at the 36th Annual Meeting of the Psychonomic Society, Los Angeles, CA.
- Shames, V. A., Graham, T. F., & Hubbard, T. L. (1995, July). *Interval structure and implicit learning of musical stimuli*. Paper presented at the 2nd Annual Meeting of the Cognitive Society for Applied Interdisciplinary Learning, Hood River, OR.
- Hubbard, T. L. (1994, November). *Asymmetries in perceived melodic interval*. Poster presented at the 35th Annual Meeting of the Psychonomic Society, St. Louis, MO.
- Hubbard, T. L. (1994, June). *Revealing sound effects: Auditory imagery and memory*. Invited symposium member at the 6th Annual Meeting of the American Psychological Society, Washington, DC.
- Hubbard, T. L. (1994, June). *Target size influences representational momentum along the axis of gravity*. Poster presented at the 6th Annual Meeting of the American Psychological Society, Washington, DC.
- Hubbard, T. L. (1993, November). *Synesthesia of lightness, pitch, and melodic interval*. Poster presented at the 34th Annual Meeting of the Psychonomic Society, Washington, DC.
- Hubbard, T. L. (1993, June). *Gravity effects and boundary extensions are found in the absence of context*. Poster presented at the 5th Annual Meeting of the American Psychological Society, Chicago, IL.
- Hubbard, T. L. (1992, November). *Cognitive representation of motion: Possible effects of "representational friction."* Poster presented at the 33rd Annual Meeting of the Psychonomic Society, St. Louis, MO.
- Hubbard, T. L., & Baird, J. C. (1992, April). *The effect of size, clutter, and complexity on the vanishing point distance in visual imagery*. Poster presented at the Annual Meeting of the Western Psychological Association, Portland, OR.
- Hubbard, T. L. (1991, November). *The effects of context on visual representational momentum*. Poster presented at the 32nd Annual Meeting of the Psychonomic Society, San Francisco, CA.

Hubbard, T. L., & Bharucha, J. J. (1990, November). *Is judged displacement a modular process?* Poster presented at the 31st Annual Meeting of the Psychonomic Society, New Orleans, LA.

### ***Graduate Dissertations and Theses Directed***

#### Doctoral Dissertations

- Hutchison, J. L. (2007). *Boundary extension in the auditory domain*. Unpublished Doctoral Dissertation, Texas Christian University, Fort Worth, TX.
- Courtney, J. R. (2006). *Examining memory for area and distance: Untangling the relationship between memory psychophysics and boundary extension*. Unpublished Doctoral Dissertation, Texas Christian University, Fort Worth, TX.
- Motes, M. A. (2003). *Entrainment engagement*. Unpublished Doctoral Dissertation, Texas Christian University, Fort Worth, TX.
- Galvin, P. M. (2002). *Facilitation of religious experiences: The role of music and situational factors*. Unpublished Doctoral Dissertation, Texas Christian University, Fort Worth, TX.
- Ruppel, S. E. (2002). *Representational momentum, attention, and the flash-lag effect*. Unpublished Doctoral Dissertation, Texas Christian University, Fort Worth, TX.
- Favretto, A. (2002). *Displaced representations of targets undergoing luminance transformations*. Unpublished Doctoral Dissertation, University of Trieste, Trieste, Italy.
- Datteri, D. L. (2000). *Music, figures, and words, oh my! The influence of music on stick figure and word perception: An audiovisual Gestalt investigation*. Unpublished Doctoral Dissertation, Texas Christian University, Fort Worth, TX.
- Collier, W. G. (1998). *The roles of pitch and emotion in immediate recall*. Unpublished Doctoral Dissertation, Texas Christian University, Fort Worth, TX.



## Master's Theses

- Kumar, A. M. (2008). *Effects of feedback on representational momentum*. Unpublished Master's Thesis, Texas Christian University, Fort Worth, TX.
- Courtney, J. R. (2003). *Stimulus continuity as it relates to illusory events: Relationships of stimulus structure*. Unpublished Master's Thesis, Texas Christian University, Fort Worth, TX.
- Blessum, J. A. (1999). *Representational momentum and field dependence/independence*. Unpublished Master's Thesis, Texas Christian University, Fort Worth, TX.
- Ruppel, S. E. (1999). *Some dynamics of pointing: Priming a direction of displacement*. Unpublished Master's Thesis, Texas Christian University, Fort Worth, TX.
- Datteri, D. L. (1998). *Influences of concurrent auditory frequency on the perception of an ambiguous visual stimulus*. Unpublished Master's Thesis, Texas Christian University, Fort Worth, TX.
- Galvin, P. M. (1998). *The family resemblance of religious individuals: Building a religiosity scale*. Unpublished Master's Thesis, Texas Christian University, Fort Worth, TX.
- Collier, W. G. (1997). *Judgments of affect, brightness, and speed of auditory stimuli: An experimental study on the effect of musical pitch and tempo*. Unpublished Master's Thesis, Texas Christian University, Fort Worth, TX.

## **Consulting**

### Commercial Business

Hannan Performance Science and PlayWisely, LLC, Dallas, Texas  
Provided reviews of scientific literatures, advice on experimental design, and assistance in preparation of presentations for multiple projects (May – December, 2016).

### Scientific Institutes

Czech Academy of Sciences  
Evaluation of the research and professional activities of the Institutes of the Czech Academy of Sciences (May – June, 2015).

## Academic Promotion and Tenure

Department of Psychology, Ariel University (Israel)

Evaluation of the scholarly activities of a faculty member who applied for promotion to Associate Professor (Fall, 2016).

Department of Psychology, University of South Carolina, Upstate

Evaluation of the scholarly activities of a tenured faculty member who applied for promotion to Full Professor (Fall, 2015).

Department of Psychology, University of South Carolina, Upstate

Evaluation of the scholarly activities of a tenure-track faculty member who applied for tenure (Fall, 2011).

Department of Psychology, Illinois State University

Evaluation of the scholarly activities of a tenured faculty member who applied for promotion to Full Professor (Fall, 2005).

Department of Psychology, College of Wooster

Evaluation of the scholarly activities of a tenure-track faculty member who applied for tenure (Fall, 2003).

Department of Psychology, Illinois State University

Evaluation of the scholarly activities of a tenure-track faculty member who applied for tenure (Fall, 2002).

Department of Psychology, Davidson College

Evaluation of the scholarly activities of a tenure-track faculty member who applied for tenure (Fall, 1999).

## Awarding of Graduate Degrees

University of Texas at Dallas

Served as external dissertation committee member for a Ph.D. dissertation by Ryan Brigante on *Meaning and Music* (in progress).

University of Manitoba (Canada)

Served as External Examiner for a Ph.D. dissertation by Andrea Piotrowski on *Age-related Effects on Performance in Biological Motion, Implied Motion, and Dynamic Visual ToM Tasks* (August, 2008).

Charles Sturt University (Australia)

Served as Marker and Examiner for a Ph.D. dissertation by Adam Rock on *Constructivism and Shamanic States of Consciousness*:

*On the Antecedents, Epistemology, and Ontological Foundations of Ostensibly Shamanic Journeying Imagery Associated With the Lower World* (January, 2004).

University of Texas at Arlington  
Served as Outside Reader for graduate qualifying exam in psychology (Perception; August, 1997).

#### Review of Grant Proposals

Outside Review for a new project grant submitted to the Research Foundation-Flanders (Fonds Wetenschappelijk Onderzoek-Vlaanderen, FWO) (June, 2016).

Outside Review for research grant submitted to the Israeli Science Foundation, Jerusalem, Israel (March, 2010).

Expert Review for doctoral program training and research grant submitted to the Swiss National Science Foundation, Berne, Switzerland (June, 2014).  
Expert Review for doctoral program training and research grant submitted to the Swiss National Science Foundation, Berne, Switzerland (April, 2009).

FastLane review for a proposal submitted to the Human Cognition and Perception Program at the National Science Foundation, Washington, DC (March, 2006).

FastLane review for a proposal submitted to the Human Cognition and Perception Program at the National Science Foundation, Washington, DC (March, 2002).

External review of an internal faculty grant for Lafayette College, Easton, PA (June, 1997).

#### Community Groups

Arlington IONS Community Group, Arlington, TX  
Creation and maintenance of the website of the Arlington IONS community group (voluntary donation). The website provides information on topics of interest, calendar of events, an archive of previous events, and links to other resources (July, 2014 – present).

#### Review of Book Proposals

Reviewer for a book prospectus submitted to Elsevier/Academic Press Publishers (November, 2015).

Reviewer for a book prospectus submitted to Elsevier/Academic Press Publishers (September, 2014).

Reviewer for a book prospectus submitted to Elsevier/Academic Press Publishers (July, 2014).

#### Laboratory

Department of Psychology, Kearney State College (Nebraska)  
Provided assistance in implementing a Macintosh-based research laboratory. Presented a hands-on workshop for faculty, a public colloquium, and advised individual faculty (March, 1990).

#### ***Grant Support***

Co-Organizer on Conference Grant for *RepMo2000: New Findings, New Directions, New Connections: The First International Workshop on Representational Momentum* by the Max Planck Institute for Biological Cybernetics, Tübingen, Germany, 20,000 Deutsch Marks (Fall, 2000).

Faculty Grant to examine distortions in the perception and memory of luminance, TCU Research and Creative Activities Fund, \$1609 (Spring, 2000).

Small Grant for pilot studies on positron emission tomography of the sleeping brain, University of Arizona Foundation, \$4,600 (January, 1994).

Research Opportunity Award to examine representational momentum and shareability, National Science Foundation, \$10,000 (June, 1991).

Research Opportunity Award to examine auditory representational momentum, National Science Foundation, \$10,000 (June, 1990).

#### ***Professional Certification***

CITI Program Human Research (IRB – Social & Behavioral Research (Group 2) Basic Course (last renewal, May, 2017).

Institutional Review Board Administrator and Institutional Review Board Member (Public Responsibility in Medicine and Health, February, 2006).

### ***Conference Organization***

Co-Organizer (with Ian M. Thornton) of *RepMo 2000: New Findings, New Directions, & New Connections: The First International Workshop on Representational Momentum*. This three-day workshop occurred in September, 2000, and was sponsored by the Max Planck Institute for Biological Cybernetics, Tübingen, Germany. The workshop brought together experts in visual cognition, cognitive neuroscience, neurophysiology, and computer science with the goals of:

- \* introducing representational momentum to a broader audience.
- \* exploring connections of representational momentum and related phenomena.
- \* discussing new empirical studies of representational momentum.
- \* seeking new research directions for the study of dynamic objects and events.

### ***Service Experience*** (at Texas Christian University)

#### Institutional Review Board

Member of the Institutional Review Board (August 1997 – May 2002; Chairperson of the Institutional Review Board (December, 2004 – August 2008). Duties as chairperson included processing approximately 65 protocols per year for projects involving human subjects participation.

Member of the Psychology Department Committee on Safeguards in Human Research (subcommittee of TCU Institutional Review Board) (September, 1996 – December, 2001; September, 2003 – December, 2008).

#### Doctoral Dissertation Committees

In addition to eight Doctoral Dissertations directed (listed above), served on 28 additional Doctoral Dissertation Committees (1996 – 2008). Names available upon request.

#### Master's Thesis Committees

In addition to seven Master's Theses directed (listed above), served on 12 additional Master's Thesis Committees (1996 – 2008). Names available upon request.

#### Graduate Qualifying Exam Committees

Served on 34 graduate qualifying exam committees (1996 – 2008). Names available upon request.

### Departmental Webmaster

Webmaster for Psychology Department. Duties included web site design, development, and maintenance; monitoring and responding to (or forwarding) all requests and queries that result from the web pages; uploading course materials for numerous classes; and advising faculty and students on use of the internet and on web-related issues. The site provided extensive information on the graduate program in psychology, the undergraduate programs in psychology and in neuroscience, faculty backgrounds and research interests, psychology research laboratories, classes and course resources (January, 1996 – December, 2008).

### Sigma Xi

Member of Sigma Xi (1996 – present). Officer in TCU chapter of Sigma Xi: Treasurer (1997 – 1999), Vice-President (1999 – 2000), President (2000 – 2001). Sponsored three student Grants-in-Aid applications (one awarded).

### Faculty Search Committees

Served on five faculty search committees (1999 – 2006), and chaired one faculty search committee (2007 – 2008).

### Graduate Admission and Funding

Member of the Graduate Admissions and Funding Committee. Duties included reviewing all applicants for graduate program and participation in decision-making regarding admittance and funding of graduate students (January, 1996 – May, 2004).

### Student Research Symposium

Member of the Organizing Committee for the Student Research Symposium. Involved with all aspects of planning the SRS: primary email contact person for questions from participants; aided in the design, implementation, and updating of the initial SRS web site; assembled the initial SRS Abstracts booklet from the online submissions; aided in procurement and preparation of prizes (plaques, certificates); aided coordination of judging (2002 – 2008).

### Psi Chi Advisor

Served as Faculty Adviser to TCU chapter of Psi Chi, National Honor Society in Psychology (August, 1998 – May, 2001).

***Hosting of International Visiting Predoctoral Scholars*** (at Texas Christian University)

Alessia Favretto, from the University of Trieste, Italy. Alessia came to TCU specifically to collaborate with me on her dissertation studies. After finishing data collection at TCU, Alessia returned to the University of Trieste and successfully defended her dissertation (1999 – 2000).

Martina Lange, from Christian-Albrechts University in Kiel, Germany. Martina collaborated on a project involving application of signal detection theory methodology to representational momentum (Fall, 2008).

***Miscellaneous***

*Basic and Advanced Skywarn Storm Spotter, National Weather Service  
First Degree Black Belt (Shodan), United States Judo Instructors Institute  
Eagle Scout (bronze, silver, gold palms), Boy Scouts of America*

***References***

Available upon request.