

## **CURRICULUM VITAE (7/2016)**

### **CATHERINE ELLEN KERR, Ph.D.**

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Email: Catherine\_Kerr@brown.edu

#### **EDUCATION**

1985 AB, magna cum laude, Amherst College  
1996 PhD, Johns Hopkins University

#### **POSTGRADUATE TRAINING**

2006-2011 Postdoctoral training in Cognitive Neuroscience, NIH-K01 Award, Harvard Medical School

#### **HONORS AND AWARDS**

1985 George Rogers Taylor Prize, Best Undergraduate Thesis Departmental Award, Amherst College  
1986-1988 National Mellon Fellowship for Graduate Study  
1990 Newcomen Society Prize, outstanding article by a graduate student or junior faculty  
1988-1992 Jacob Javits National Fellowship for Graduate Study  
1993 Mellon Dissertation Fellowship  
1998 Derek Bok Excellence in Teaching Award, Faculty of Arts and Sciences, Harvard University

#### **ACADEMIC APPOINTMENTS:**

1995-1998 Lecturer on Social Studies, Committee on Degrees in Social Studies, Harvard University  
2001-2004 Instructor in Social Medicine, Harvard Medical School  
2004-2011 Instructor in Medicine, Harvard Medical School  
2011- Assistant Professor (research), Department of Family Medicine, Brown University,  
2011- Director, Translational Neuroscience Research, Contemplative Studies Initiative  
2013- Assistant Professor (research) in Medicine, Brown University Medical School

#### **OTHER APPOINTMENTS (Brown)**

2011- Co-Director, Integrative Medicine Scholarly Concentration

2011- Co-Director, Contemplative Studies Scholarly Concentration  
2011- Co-Director, Medical Student Mindfulness-Wellness Program  
2013- Director of Mindfulness Research, Women's Medicine Collaborative, Miriam  
Hospital, Providence, RI 02912  
2014- Co-Director, Brown-AIIMS/India Contemplative Studies Initiative

#### OTHER APPOINTMENTS (Regional Institutions)

2002-2008 Research Faculty, New England School of Acupuncture, Watertown, MA  
2007- 2012 Visiting Scientist in Radiology, Department of Radiology. Massachusetts General

#### PROFESSIONAL SOCIETIES

2004-2005 Member, Society for Acupuncture Research.  
2005- Member, Society for Neuroscience.  
2004, 2015- Member, Society for Integrative Oncology

#### LOCAL AND NATIONAL COMMITTEES

##### Local:

1998-2000 Member, Research Subcommittee, Complementary Therapies Task Force,  
Dana-Farber Cancer Institute.

##### National:

2008 Member, National Warrior Reset Panel, U.S. Army Medical Research Military  
Operational Medicine Research Program.

2015 Member, National Research Consulting Board, Alliance for Lupus Research

##### Editorial:

2014-2016 Special topics editor, Frontiers in Human Neuroscience. Special topic: Neural  
Mechanisms Underlying "Movement-based" Embodied Contemplative Practices.

2015- Special topics editor, Frontiers in Psychology. Special topic: Interoception,  
Contemplative Practice and Health.

#### PUBLICATIONS LIST

PUBLICATION IMPACT (Google Scholar: 4123 total citations. H-index = 26)

#### ORIGINAL PUBLICATIONS IN PEER REVIEWED JOURNALS

1. **Kerr, CE.** Translating "mind-in-body": two models of patient experience underlying a randomized controlled trial of qigong. *Cult Med Psychiatry* 2002; 26(4):419-447.
2. Stone D, **Kerr CE**, Jacobson E, Conboy LA, Kaptchuk TJ. Patient expectations in placebo-controlled randomized clinical trials. *J Eval Clin Pract* 2005; 11(1):77-84.

3. Patel SM, Stason WB, Legedza A, Ock SM, Kaptchuk TJ, Conboy L, Canenguez K, Park JK, Kelly E, Jacobson E, **Kerr CE**, Lembo AJ. The placebo effect in irritable bowel syndrome (IBS) trials: a meta-analysis. *Neurogastroenterol Motil* 2005; 17(3):332-340.
4. Lazar SL, **Kerr CE**, Wasserman RH, Gray JR, Greve DN, Treadway MT, McGarvey M, Quinn BT, Dusek JA, Benson H, Rauch SL, Moore CI, Fischl B. Meditation experience is associated with increased cortical thickness. *Neuroreport* 2005; 16(17):1893-1897.
5. Kaptchuk TJ, Stason WB, Davis RB, Legedza AR, Schnyer RN, **Kerr CE**, Stone DA, Nam BH, Kirsch I, Goldman RH. Sham device vs. inert pill: randomized controlled trial of two placebo treatments. *BMJ* 2006; 332(7538):391-397.
6. Conboy LA, Wasserman RH, Jacobson EE, Davis RB, Legedza AT, Park M, Rivers AL, Morey EB, Nam BH, Lasagna L, Kirsch I, Lembo AJ, Kaptchuk TJ, **Kerr CE**. Investigating placebo effects in irritable bowel syndrome: a novel research design [research methods report]. *Contemp Clin Trials* 2006; 27(2):123-34.
7. Yoo SS, **Kerr CE**, Park M, Im DM, Blinder RA, Park HW, Kaptchuk TJ. Neural activities in human somatosensory cortical areas evoked by acupuncture stimulation. *Complementary Therapies in Medicine* 2007; 15(4):247-54.
8. McManus CA, Kaptchuk TJ, Schnyer R, Goldman R, **Kerr CE**, Nyguyen LT, Stason WB. Experiences of acupuncturists in a placebo-controlled randomized clinical trial. *J Altern Comp Med* 2007; 13(5):533-538.
9. **Kerr CE**, Milne I, Kaptchuk T. William Cullen and a missing mind-body link in the early history of placebos. *Journal of the Royal Society of Medicine* 2008; 101(2):89-92.
10. Chin Feman SP, Nguyen LT, Quilty MT, **Kerr CE**, Nam BH, Conboy LA, Singer JP, Park M, Lembo AJ, Kaptchuk TJ, Davis RB. Effectiveness of recruitment in clinical trials: an analysis of methods used in a trial for irritable bowel syndrome patients. *Contemp Clin Trials* 2008; 29(2):241-251.
11. Wayne PM, **Kerr CE**, Schnyer RN, Legedza ATR, Savetsky-German J, Shields MH, Buring JE, Davis RB, Conboy LA, Highfield E, Parton B, Thomas P, Laufer MR. Japanese-style acupuncture for endometriosis-related pelvic pain in adolescents and young women: results of a randomized sham-controlled trial. *J Ped and Adolesc Gyn* 2008; 21(5):247-257.
12. **Kerr CE**, Wasserman RH, Moore CI. Cortical dynamics as a therapeutic mechanism for touch healing. *J Altern Comp Med* 2007; 13(2): 59-66.
13. **Kerr CE**, Shaw JR, Wasserman RH, Chen VW, Kanojia A, Bayer T, Kelley JM. Tactile acuity in experienced Tai Chi practitioners: evidence for use dependent plasticity as an effect of sensory-attentional training. *Exp Brain Res* 2008; 188(2): 317-322.
14. Kaptchuk TJ, Kelley JM, Conboy LA, Davis RB, **Kerr CE**, Jacobson EE, Kirsch I, Schnyer RN, Nam BH, Nguyen LT, Park M, Rivers AL, McManus C, Kokkotou E, Drossman DA, Goldman P, Lembo AJ. Components of the placebo effect: randomised controlled trial in patients with irritable bowel syndrome. *BMJ* 2008; 336(7651):999-1003.
15. **Kerr CE**. Mind-body dualism redux?: Theory of mind and embodied simulation

- hypotheses in light of historical debates about perception, cognition and mind. *Review of General Psychology*. 2008; 12 (2): 205-214.
16. Conboy L, Quilty MT, **Kerr C**, Shaw J, Wayne P. A qualitative analysis of adolescents' experiences of active and sham Japanese-style acupuncture protocols administered in a clinical trial. *J of Altern and Comp Med* 2008; 14 (6): 699-705.
  17. Lembo AJ, Conboy L, Kelley JM, Schnyer RS, McManus M, Quilty MT, **Kerr CE**, Jacobson EE, Davis RB, Kaptchuk TJ. A treatment trial of acupuncture for IBS patients. *Am J Gastroenterol*. 2009;104(4):912-9.
  18. Kaptchuk TJ, **Kerr CE**, Zanger A. Placebo controls, exorcisms and the devil. *Lancet* 2009; 374(9697):1234-5.
  19. Kelley JM, Lembo AJ, Ablon JS, Villanueva JJ, Conboy LA, Levy R, Marci CD, **Kerr CE**, Kirsch I, Jacobson EE, Riess H, Kaptchuk TJ. Patient and practitioner influences on the placebo effect in irritable bowel syndrome. *Psychosomatic Medicine*. 2009;71(7):789-97.
  20. Kaptchuk TJ, Shaw J, **Kerr CE**, Conboy LA, Kelley JM, Csordas TJ, Lembo AJ, Jacobson EE. 'Maybe I made up the whole thing': placebos and patient experiences in a randomized controlled trial. *Cult Med Psychiatry*. 2009 Sep;33(3):382-411.
  21. **Kerr CE (co-first author)**, Jones SR, Wan Q, Pritchett D, Hamalainen M, Moore CI. Cued spatial attention drives functionally-relevant modulation of the mu rhythm in primary somatosensory cortex. *J Neurosci* 2010; 30 (41), 13760-13765.
  22. **Kerr CE**, Josyula K, Littenberg R. Developing an observing attitude: An analysis of patient diaries in a MBSR clinical trial. *Clinical Psychology and Psychotherapy* 2011; 18(1), 80-93.
  23. **Kerr CE**, Shaw JR, Conboy LA, Kelley JM, Jacobson E, Kaptchuk TJ. Placebo acupuncture as a form of ritual touch healing: a neurophenomenological model. *Consciousness and Cognition* 2011; 20 (3), 784-791.
  24. **Kerr CE**, Jones SR, Wan Q, Pritchett DL, Wasserman RH, Wexler A, Villanueva JJ, Shaw JR, Lazar SW, Kaptchuk TJ, Littenberg R, Hamalainen MS, Moore CI. Effects of Mindfulness Meditation Training on Anticipatory Alpha Modulation in Primary Somatosensory Cortex. *Brain Research Bulletin* 2011; 85(3-4): 96-103.
  25. Wan Q, **Kerr C**, Pritchett D, Hamalainen M, Moore C, HJones S. Dynamics of dynamics within a single data acquisition session: Variation in neocortical alpha oscillations in human MEG. *PLoS One*. 2011; 6(9), e24941.
  26. Jensen KB, Petrovic P, **Kerr CE**, Kirsch I, Raicek J, Cheetham A, Spaeth R, Cook A, Gollub RL, Kong J, Kaptchuk TJ. Sharing pain and relief: Neural correlates of physicians during treatment of patients. *Molecular Psychiatry* 2013 (in press).
  27. Wells RE, **Kerr CE**, Wolkin J, Dossett M, Davis RB, Walsh J, Wall R, Kong J, Kaptchuk T, Press D, Phillips RS, Yeh G. Meditation for adults with mild cognitive impairment: A pilot randomized trial. *Journal of the American Geriatrics Society*. 2013; 61(4): 642-645.
  28. Daubenmier J, Sze J, **Kerr CE**, Kemeny ME, Mehling W. Follow your breath:

Respiratory interoceptive awareness in experienced meditators. *Psychophysiology*. 2013; 50(8): 777-89.

29. **Kerr CE**, Sacchet MD, Lazar SW, Moore CI, Jones SR. Mindfulness starts with the body: Somatosensory attention and cortical alpha modulation in mindfulness meditation. *Frontiers in Human Neuroscience* 2013; 13, 7-12
30. Garrison K, Santoyo J, Davis J, Thornhill T, **Kerr CE**, Brewer J. Effortless awareness: using real-time neurofeedback to probe correlates of posterior cingulate cortex. *Frontier in Human Neuroscience* 2013 Aug 6;7:440.
31. Welles RE, Yeh GY, **Kerr CE**, Wolkin J, Davis RB, Tan Y, Spaeth R, Wall RB, Walsh J, Kaptchuk TJ, Press D, Phillips RS, Kong J. Meditation's impact on default mode Network and hippocampus in mild cognitive impairment: A pilot study. *Neuroscience Letters*. 2013; 556, 15-19.
32. Desbordes G, Gard T, Hoge EA, Holzel BK, **Kerr C**, Lazar SW, Olendzki A, Vago DR. Moving beyond mindfulness: Defining equanimity as an outcome measure in meditation and contemplative research. *Mindfulness* Jan 21;2014(January).
33. \*\*Sacchet MD, LaPlante RA, Wan Q, Pritchett DL, Lee AKC, Hamalainen M, Moore CI, Jones SR, **Kerr CE** (co-senior author). Attention drives synchronization of alpha and beta rhythms between right inferior frontal and primary sensory neocortex. *Journal of Neurosci* 2015; 35(5): 2074-2082
34. Farb N, Daubenmier J, Price CJ, Gard T, **Kerr C**, Dunn BD, Klein AC, Paulus MP, Mehling WE. Interoception, contemplative practice, and health. *Front Psychol* 2015; 6:763.
35. **Kerr CE**, Agrawal U, Nayak S. The effects of Tai Chi practice on intermuscular beta coherence and the rubber hand illusion. *Frontiers in Human Neuroscience*. 2016 Feb 16; 10:37.

**\*\*denotes first-author as trainee, Kerr as senior (or co-senior) author**

#### OTHER PEER-REVIEWED PUBLICATIONS

1. Kaptchuk TJ, **Kerr CE**. Unbiased divination, unbiased evidence and the patulin clinical trial [invited commentary]. *International J Epidemiol* 2004; 33(2):247-251.
2. Highfield E, Laufer M, Schnyer R, **Kerr CE**, Thomas P, Wayne PM. Adolescent endometriosis-related pelvic pain treated with acupuncture: a case series [case study]. *J Altern Comp Med* 2006;12(3):317-22.
3. Schnyer RN, Conboy LA, Jacobson E, McKnight P, Goddard T, Moscatelli F, Legedza AT, **Kerr C**, Kaptchuk TJ, Wayne PM. Development of a Chinese medicine assessment measure: an interdisciplinary approach using the Delphi method [article/research strategies]. *J Altern Comp Med* 2005; 11(6):1005-13.
4. Wayne PM, Buring J, Connors EM, Davis R, Andrews SM, St. John M, Conboy L, **Kerr C**, Kaptchuk TJ, Schachter SC. Increasing research capacity at the New England

School of Acupuncture through NCCAM-supported faculty and student research training initiatives [report on institutional activities]. *Alt Ther* 2008; 14(2):52-8.

#### BOOKS AND BOOK CHAPTERS

Schmalzl, L and Kerr CE. Neural Mechanisms Underlying Movement-Based Embodied Contemplative Practices. *Frontiers in Human Neuroscience E-Book*. 2016.

#### OTHER NON-PEER REVIEWED PUBLICATIONS

1. Greene, PJ, Wayne, PM, **Kerr, CE**, Weiger, WA, Jacobson, Goldman, PG, Kaptchuk, T.J. The powerful placebo: doubting the doubters [invited commentary]. *Adv Mind Body Med* 2001; 17(4): 298-307.

#### PUBLICATIONS SUBMITTED OR IN PREPARATION

1. Xu A, Santoyo J, Zimmerman C, **Kerr CE**. The Neurophysiological Effects of Body Ownership and Image (manuscript in preparation).
2. Zimmerman C, Cullen B, Flynn E, **Kerr CE**. Effect of Mindfulness on Working Memory Ability and Emotion Regulation in Medical Students (manuscript in preparation).

#### ABSTRACTS

1. Conboy LA, Junghans, L. Ellal, R. Roncs R, **Kerr, CE**. Qualitative Study of Cancer Patients' Experiences with and Reasons for Intensively Pursuing QiGong, A Chinese Meditative Exercise Therapy. Society for Acupuncture Research, Annual Meeting, Cambridge, 2003.
2. **Kerr CE**, Conboy LA, Sephton SE, Roncs R, Ronghui X, Morey EB, Doherty-Gilman A, Medeiros C, Beaton-Starr M, Matulonis UA. Pilot study in metastatic breast cancer of diurnal cortisol variability, mood and quality of life associated with 12-week qigong exercise program. Society for Integrative Oncology Annual Meeting, New York City, 2004
3. **Kerr CE**, Shaw JR, Wasserman RH, Chen VW, Kanojia A, Bayer T, Kelley JM. Tactile acuity in experienced Tai Chi practitioners. Cognitive Neuroscience Society Annual Meeting, San Francisco, CA, 2008.
4. **Kerr CE**, Jones SR, Pritchett DL, Shaw JR, Villanueva JF, Wexler A, Moore CI. MEG study of somatosensory cortical dynamics related to an attention shifting task. Society for Neuroscience, Annual Meeting, Washington, DC; 2008.
5. **Kerr CE**, Jones SR, Wan Q, Pritchett DL, Wexler A, Shaw JR, Villanueva JF, Wasserman RH, Hamalainen M, Littenberg R, Moore CI. Testing the mu-meditation-attention hypothesis: A MEG study of cortical dynamics. Society for Neuroscience, Annual Meeting, Chicago, IL, 2009.
6. Wan Q, **Kerr CE**, Pritchett DL, Hamalainen M, Moore CI, Jones SR. Dynamics of dynamics: The within-session variability of human somatosensory neocortical oscillations and evoked responses. Society for Neuroscience, Annual Meeting, San Diego, CA, 2010.

7. **Kerr CE**, Tobiasson E, Ahn A, Wu G. Do tai chi practitioners show enhanced beta rhythm (15-30 hz) intermuscular and corticomuscular coherence? Society for Neuroscience, Annual Meeting, Washington, DC, 2011.
8. **Kerr CE**, Sacchet M, Laplante R, Hamalainen M, Lee AKC, Wan Q, Pritchett D, Moore CI, Jones SR. Top-Down modulation of cortical interareal synchronization with tactile attention in normal subjects and trained meditators: A MEG and computational modeling study. Society for Neuroscience, Annual Meeting, New Orleans, LA. 2012
9. Jensen K, Petrovic P, **Kerr CE**, Kirsch I, Raicek J, Cheetham A, Spaeth R, Cook A, Gollub R, Kong J, Kaptchuk T. Physicians activate their own brain regions for pain relief and reward while treating patients. Society for Neuroscience, Annual Meeting, New Orleans, LA. 2012
10. Penner C, Zimmerman C, **Kerr CE** A preliminary qualitative study in fatigued breast cancer survivors: rationale for mind-body interventions. Society for Integrative Oncology Annual Meeting, Boston, 2015
11. Agrawal U, Black C, Ladow M, Santotyo J, **Kerr CE**, Moore C, Jones S. The role of muscular beta oscillations and modulation with transcranial alternating current stimulation in predicting tactile detection. Society for Neuroscience, Annual Meeting, Chicago, IL. 2015

## INVITED PRESENTATIONS

### INTERNATIONAL PRESENTATIONS

1. *From William James to Walter Cannon to Herbert Benson: Some Historical Precedents for Mind-Body Medicine.* Presentation. Cheiron, International Society for the History of the Behavioral Sciences, Annual Meeting, Ottawa, Canada, June 1999.
2. *Qigong Research Research Discussion.* Tai'jiquan Research Center, Tai'an, Shandong Province, China, May 2006.
3. *Neural Correlates of Meditation, Acupuncture and Qigong Research Lecture.* Shandong Medical School, Tai'an, Shandong Province, China, May 2006.
4. *Representation of Acupuncture Stimulation in Human Primary and Secondary Somatosensory Cortical Areas.* North American Research Conference on Complementary & Integrative Medicine, Edmonton, Canada, June 2006.
5. *Sham Device vs. Inert Pill: A RCT Comparing Two Placebo Treatments for Arm Pain Due to Repetitive Use.* Invited Research Lecture. North American Research Conference on Complementary and Integrative Medicine, Edmonton, Canada. June 2006.
6. *Cortical Dynamics of Mindfulness Meditation: a MEG study.* Mindfulness Inaugural International Meeting. Invited Lecture. University of Toronto, Toronto, Canada, December, 2008.
7. *Feeling without Awareness: Converging Neuroscientific and Phenomenological*

*Approaches to Suffering*. Invited Lecture. European Science Foundation Conference on Pain and Suffering, University of Luxembourg, October 2009.

8. *Placebo acupuncture as a ritual touch intervention: Presenting Ritual and the Sense of Touch as Placebo Variables*. Invited Lecture, Conference on Cognition and Culture in Asia, National University of Singapore, March, 2010.
9. *Presentation to His Holiness the Dalai Lama at the Sera Monastery, Bylakuppe, India: Translating traditional contemplative theories into testable scientific hypotheses*. December 2015.

#### NATIONAL PRESENTATIONS

1. *The Dream of Exquisite Specificity in the Unlikely Convergence of Weinberg's Molecular Theory of Cancer Causation and Spiegel's Support Group Hypothesis*. Cancer Workshop. Department of Social Medicine, University of North Carolina at Chapel Hill, Chapel Hill, NC, April, 2000.
2. *Beyond Dualism? The Meaning of Bodily Practices in Butler's Critical Gender Theory and Kuriyama's Version of Chinese Medicine*. Society for Literature and Science, Annual Meeting, Buffalo, NY, October, 2001.
3. *Are Responses to Mindfulness Meditation Mediated by a Somatosensory Cortical Pathway?* Rosenthal Center for Complementary and Alternative Medicine, Columbia University, New York, NY, November 2001.
4. *Brain Science and Embodiment in Recent Literary-Historical Debates about Trauma*. Peer-Reviewed Panel on Literature and Neuroscience. International Narrative Conference, Washington, DC, March, 2007.
5. *Embodiment and Empathy in Recent Neuroscience and William James*. Invited Lecture. International Conference: From the Brain to Human Culture: Intersections between the Humanities and Neuroscience. Bucknell University, Lewisburg, PA, April, 2007.
6. *Neuroscience of Embodiment*. Osher Center, University of California San Francisco, San Francisco, CA, December, 2007.
7. *Cortical Dynamics of Mindfulness Meditation Research Symposium*. Invited Research Lecture. Annual International Scientific Conference on Mindfulness. Center for Mindfulness, Worcester, MA, March, 2009.
8. *Neural Correlates of Somatic Awareness: Implications for the Study of Mind-Body Therapies*. Osher Center, University of California San Francisco, San Francisco, CA, June 2009.
9. *Tai Chi, Somatic Awareness and the "Touch" Cortex in the Brain* Invited Lecture. First International Tai Chi Symposium, Nashville, TN, July 2009.
10. *Alpha Dynamics, Cognitive Regulation and Mindfulness Meditation: a MEG study*. Mindfulness Research Meeting. Invited Lecture. Center for Investigating Healthy Minds, University of Wisconsin, Madison, WI, October, 2010.



11. *Starting with the Body—the Neuroscience of Somatosensory Attention in Contemplative and Mind-body Practice*. Metro-Area Research Group on Awareness and Meditation, NYU, New York, September, 2011.
12. *Starting with the Body*. Keynote Address. Annual Meeting, Society for Contemplative Mind in Higher Education, Amherst, MA, November, 2011.
13. *Brain Rhythms, Mindfulness Meditation and Somatosensory Attention*. Neuroleadership Washington DC Regional Seminar, Bethesda, MD. January, 2013.
14. *Tai Chi, the “Brainbodyweb” and Corticomuscular Beta Rhythm Coherence*. Mind and Life Summer Research Institute. Garrison, NY, June, 2012.
15. Keynote speaker, North American Thelen Research Symposium, San Francisco, CA, August 2012.
16. *Tai Chi, Mindfulness, Somatic Awareness and the “Touch” Cortex in the Brain*. Keynote Speaker. Symposium on Martial Arts in Performance, Health and Practice, Cornell University, Ithaca NY, February, 2012.
17. *Neural Mechanisms Underlying Somatosensory Attention in Mindfulness: Implications for Contemplative Science*. Contemplative Sciences Center, University of Virginia. Charlottesville, VA. March 2013.
18. *Presence and the Neural Substrates of Embodiment in Contemplative Practice*. Dialogues between Buddhism and Science. Shipman, VA. October, 2013.
19. *Exploring the gap between phenomenological and neurophysiological accounts of contemplative experience*. Presenter (and co-organizer) at the “Mindfulness in Question” Conference, UC Davis, May 2015.
20. Invited Master Lecturer, *Contemplative Practice Starts with the Body: Understanding Somatic Awareness, Brain Dynamics and Healing Presence in Mindfulness and Other Disciplines*. International Contemplative Studies Symposium, Boston, October, 2014.
21. Kerr CE, Zimmerman C. Panel Presentation, Mindfulness, Equanimity and Health. International Contemplative Studies Symposium. Boston, October 2014.
22. U Agrawal D Clark E Henje Blom C Kerr S Nayak P Nessel L Schmalzl P Wayne. Movement-Based Embodied Contemplative Practices: Current State-of-the-Art and Future Research Directions. The Mind and Life International Symposium for Contemplative Studies. Boston, MA. Nov 2014.
23. Taking the body’s intelligence seriously: embodied cognition and healing in body-based contemplative practices . Association for Contemplative Mind in Higher Education. Northampton, MA. August 2016,
24. Taking the body’s intelligence seriously: embodied cognition and healing in body-based contemplative practices: embodied cognition, healing and brain-body interaction. International Contemplative Studies Symposium. San Diego, November 2016.

## REGIONAL PRESENTATIONS

1. *Enhancing the Immune System and Coping with Cancer: Using Discoveries from Recent Somatosensory Neuroscience to Build a Self-Healing Practice.* Caring for the Whole Person on the Cancer Journey Workshop. Institute for Mind, Body and Spirituality, Lesley University, Cambridge, MA, July, 2003.
2. *What can Medical Anthropology Offer to Acupuncture Research?* East-West Think Tank, New England School of Acupuncture. Watertown, MA, September, 2004.
3. *Somatosensory Cortical Maps as Neural Correlates of Acupuncture, Vipasana Meditation and Qigong,* New England School of Acupuncture Watertown, MA, February, 2005.
4. *Qigong as an Adjunctive Treatment in Cancer: Hypotheses, Theoretical Models and Feasibility Testing.* Department of Oncology, Bay State Medical Center, Springfield, MA, April, 2005.
5. *Mind-Body-Spirit Approaches to Increasing Immune Competence. Promising Practices in Healthcare with a Focus on Cancer.* Institute for Mind, Body and Spirituality, Lesley University. Cambridge, MA, August, 2005.
6. *Somatosensory Cortical Plasticity as a Mechanism Underlying Acupuncture and Qigong.* Oriental Medicine Society of Massachusetts, Boston, MA, September, 2005.
7. *Neuroimaging and Qualitative Investigation of Acupuncture.* New England School of Acupuncture, Watertown, MA, January, 2007.
8. *Perceptual Learning: Hypothesizing a Therapeutic Mechanism Relevant to Tai Chi and Psychoanalysis.* Boston Neuro-Psychoanalysis Workshop of the Boston Psychoanalytic Society and Institute, Boston, MA, June, 2007.
9. *Mindfulness, Cortical Dynamics and Chronic Pain.* Research Lecture. Program on Chronic Pain Health Technology Institute, Cambridge, MA, June, 2007.
10. *Mindfulness as a Somatically Focused Therapy.* Marino Center, Cambridge, MA, August, 2007.
11. *Mindfulness, Cortical Dynamics and IBS for Future of Health.* Technology Institute Program on Digestive Disorders, Cambridge, MA, May, 2008.
13. *Attending to the Body in Meditation: Cortical Dynamics in a Trial of Mindfulness-Based Stress Reduction.* Research Presentation. Contemplative Studies Division, Brown University. Providence, RI, October, 2009.
14. *Attention, Cortical Dynamics and Meditation.* Boston Area Meditation Research and Contemplative Science Group, Boston, MA, May, 2010.
15. *Aging and Brain Health.* Research Lecture. Alumni Meeting, Amherst College Amherst, MA, June, 2010.

16. *Mindfulness Training, Cognitive Regulation, and Neuronal Dynamics*. Massachusetts Psychiatric Society, October, 2010.
17. *Neural Mechanisms of Mindfulness Meditation: Clinical Implications*. Grand Rounds Presentation. Department of Psychiatry, Tufts Medical School, January 2011.
18. *The Neuroscience of Mindfulness*. Gonson Society Lecture, Cambridge Center for Adult Education, Cambridge, MA, March, 2011.
19. *What Can We Learn from Scientific Research on Meditation and the Brain?* TEC Science Teachers' Summer Institute, Dover, MA, July 2011.
20. *Neuroscience of Comforting: Using the Sense of Touch and other Sensory Attentional Tools*. Future of Health Technology Institute, Cambridge, MA, October, 2011.
21. *Mindfulness Starts with the Body*. Webinar Symposium. Association for Contemplative Mind in Higher Education, Amherst MA, February, 2012.
22. *Mindfulness and the Future of Medicine*. The Future of Health Technology Institute, MIT Faculty Club, September 2012.
23. *Interoceptive Neural Mechanisms Underlying Mindfulness Meditation*. Mind and Life International Working Group Meeting on Interoception, Amherst, MA, April 2013
24. *Contemplative Practice: Neural Mechanisms of Body Awareness* Provost's Lecture, Amherst College, February 2015.
25. Kerr CE, Zimmerman C. Rationale for a clinical trial in breast cancer survivors and qigong: probing a novel neuroimmune "energy" mechanism. Harvard Medical School Research Fellowship Grand Rounds. May 2015.
26. Perception of Body Sensations: Relevance for Mindfulness and the Self . Inaugural Mindfulness Series Speaker. Middlebury College. March 2016.
27. Attentional alpha rhythm modulation: a putative mechanism in mindfulness meditation. Department of Psychology Departmental Seminar, Brandeis University. March 2016
28. Discussion Moderator, *Theoretical and Methodological Challenges in Mindfulness Research*, Radcliffe Institute Exploratory Seminar, Harvard University, January 2016.

#### LOCAL PRESENTATIONS

1. *Qigong at the Dana-Farber Cancer Institute*. Asian Medical Working Group, Harvard University, May 1998.
2. *Historical Methodology: Senior Thesis Workshop*. Presentation. Committee on Degrees on Social Studies, Harvard University, February 1999.
3. *Qi and Experience: Rethinking the Relation Between Science, Culture, and Rationality*. Presentation. Conference on Asian Encounters with Western Disciplines. Harvard University, April 1999.

4. *Qualitative Study of Irritable Bowel, Acupuncture, and Placebo*. Placebo Healing Group, Harvard Medical School, March, 2003.
5. *fMRI Study of Acupuncture, Pain and Neural Plasticity*. Placebo and Healing Group, Harvard Medical School, April, 2003.
6. *Neural Substrates of the Body Schema as Correlates for qi-Based Modalities*. Mind-Body Journal Club, Harvard Medical School, 2003 .
7. *Healing Touch: Combining Neuroscientific and Anthropological Approaches, Seminar on Science Healing and Culture*. Provost's Fund for Interfaculty Collaboration, Harvard University, February, 2005.
8. *Embodiment as a Therapeutic Mechanism*. Mind-Body Journal Club, Harvard Medical School, January, 2007.
9. *Using Magnetoencephalography (MEG) to Investigate Cortical Dynamics*. Mind-Body Journal Club, Harvard Medical School, November, 2007.
10. *Tactile Acuity in Experienced Tai Chi Practitioners: Evidence for a Sensory Attentional Mechanism*. Asian Medicine and Healing Seminar, Harvard Medical School Sponsored by Department of Anthropology / FAS / Martino Center for Neuroimaging / MGH Osher Research Center / Harvard Medical School, November, 2007.
11. *Meditation and CAM*, Didactic Lecture. Fellows Conference, Osher Research Center, Harvard Medical School, November, 2008.
12. *Junior Faculty Seminar on Cortical Dynamics and Mindfulness*. Osher Research Center, Harvard Medical School, June, 2009.
13. *Neural Mechanisms of Mindfulness Meditation: Clinical Implications Science of Healing*. Health, Behavior and the Mind Series. Beth Israel Deaconess Medical Center, 2010.
14. *Cortical Dynamics and Mind-Body Therapies Relevant to Emotion Regulation and Fatigue*. Research Lecture. Benson-Henry Institute, Massachusetts General Hospital, November, 2010.
15. *Mindfulness Starts with the Body: a View from the Brain*. TEDxCollegeHill presentation, Brown Medical School, Providence, RI, April 2012.
16. Mindfulness starts with the body: Somatosensory attention and cortical alpha rhythm modulation in mindfulness meditation. Brown Institute for Brain Science. Lunchtime Series, September 2012.
17. Neural Network mechanisms underlying mindfulness and irritable bowel syndrome (IBS) Neurology Grand Rounds, Rhode Island Hospital. March 2015.

## GRANTS

## COMPLETED

1. NCCAM-NIH, R01 AT00402. *Sham Device, Pill Placebo or Treatment for Arm Pain 2002-2003. Co-Investigator.*
2. NCCAM-NIH, R01 AT001414 *Enhancing the Placebo Effect in Irritable Bowel Syndrome. Co-Investigator.*
3. NCCAM-NIH, U19 AT002022. Part of NESA-Harvard Acupuncture Research Collaborative. *Acupuncture for Adolescent Endometriosis-Related Pain. Co-Principal Investigator of Project 1.*
4. NCCAM-NIH, R21AT002860. *Integrative Healing Model in IBS. Co-Investigator.*
5. Principal Investigator, National Center for Complementary and Alternative Medicine (NCCAM) / NIH, K01AT003459, \$649,755. *Effects of Mindfulness Meditation on Somatosensory Cortical Maps in Chronic Pain.*
6. European Science Foundation Exploratory Workshop (EW08-024), Multidisciplinary Workshop on the phenomenology and neuroscience of suffering.
7. NCCAM-NIH, R21, R21AT004467. *Measure of Body Awareness, Co-Investigator.*

## CURRENT FUNDING

1. NCCIH-NIH, R01 AT008393 9/3/14-8/31/19. *Asthma Symptom Management Through Mindfulness Training.* The goal of this project is to test MBSR's effects on asthma control and symptoms vs. an active control in a large sample of asthma patients. Across the study, I will lead an important secondary aim which is to evaluate MBSR's effects on respiratory interoceptive accuracy, as a putative *body-awareness* mechanism that may underlie clinical efficacy. Role: Site Principal Investigator.
2. NCCIH-NIH, UH2AT009145, King, Britton, Loucks (PI) 9/01/2015-08/31/2020 *Mindfulness Influences on Self-Regulation*  
This multi-site study will focus on modifying and refining mindfulness-based interventions (MBIs) by identifying self-regulatory mechanisms (Cognitive, Emotional, and Self-specifying) through existing and novel data sets in order to predict clinical outcomes and medical adherence. (Total: \$5,000,000) Role: Co-Investigator
3. Berkman-Landis Family Fund. The goal of this project is to evaluate the effects of a mind-body intervention (qigong) on sensorimotor cortical dynamics related to body focused attention, brain resting state measures related to interoception and inflammatory cytokines in a sample of breast cancer survivors with fatigue. Role: Principal Investigator.

## UNIVERSITY TEACHING ROLES

### BROWN UNIVERSITY

- 2011 Cognitive Neuroscience of Meditation (30 undergraduate students in undergraduate course, 13 lectures).

- 2011 Meditation and the Brain (9 undergraduate students, summer course).
- 2012 Compassion and Medicine GISP (10 undergraduate students, spring 2012).
- 2012 Cognitive Neuroscience of Meditation (36 undergraduate students in undergraduate course, 13 lectures).
- 2012 Religion and Culture (co-taught one session with Professor Bhri Gupta Singh, 30 undergraduates) Fall, 2012.
- 2014 Cognitive Neuroscience of Meditation (36 undergraduate students in undergraduate course, 13 lectures).
- 2016 Cognitive Neuroscience of Meditation (30 undergraduate students in undergraduate course, 12 lectures).

#### ALPERT MEDICAL SCHOOL, BROWN UNIVERSITY

- 2011 - Contemplative Studies Concentration.
- 2013 Teaching Psychiatry Residents about the Neuroscience of Mindfulness (1 session). April, 2013.
- 2014 Teaching Psychiatry Residents about the Neuroscience of Mindfulness (4 sessions). April, 2014
- 2014 Teaching Family Medicine Residents about Mindfulness and Stress (1 session), August, 2014

#### HARVARD MEDICAL SCHOOL AND HARVARD UNIVERSITY

- 1996-1998 Introduction to Social Theory Committee on Degrees on Social Studies (8 undergraduate honors students. Instructor for 2-semester course).
- 1996 Race and Liberal Politics: Junior Honors Tutorial Committee on Degrees on Social Studies (6 undergraduate honors students. Instructor for 1-semester course).
- 1997 Community Building: Junior Honors Tutorial. Committee on Degrees on Social Studies (8 undergraduate honors students. Instructor for 1-semester course).
- 1998 Medical and Psychological Expertise in Post-War American Culture: Junior Honors Tutorial. Committee on Degrees on Social Studies (5 undergraduate honors students. Instructor for 1-semester course).
- 2002 Medical Anthropology Clerkship (6 residents, 2 medical students, 2 visiting fellows. One hour seminar).
- 2003 Medical Anthropology Clerkship (6 residents, 2 medical students, 2 visiting fellows. One hour seminar).
- 2004 Medical Anthropology Clerkship (4 residents, 2 medical students, 2 dental students. One hour seminar).
- 2006 Mind-Body Medicine, Harvard Medical School course (10 medical school students. Lecturer. Two hour lecture).
- 2011 Mind-Body Medicine, Harvard Medical School course (10 medical school students. Lecturer. Two hour lecture).
- 2012 Mind-Body Medicine, Harvard Medical School course, November 2012 (10 medical school and graduate school students. Lecturer. Two hour lecture).

2013 Mind-Body Medicine, Harvard Medical School course, November 2012 (10 medical school and graduate school students. Lecturer. Two hour lecture).

#### OTHER TEACHING

2003-2007 New England School of Acupuncture/NIH-NCCAM DCRC Faculty Research Methods Course for Acupuncture Students  
(70 masters level students. Primary Instructor for 1-semester course).

#### FORMALLY SUPERVISED TRAINEES AT BROWN UNIVERSITY

1. Roan LaPlante (Undergraduate), 2011-2013. Published one manuscript. Indiana University Graduate Program in Neuroscience.
2. Matt Griffin (Medical School), 2011-2013. Resident in Internal Medicine, Yale University.
3. Brian Bao (Medical School), 2011-2013. Resident in Emergency Medicine, Oregon Health Sciences University
4. Mason Hedberg (Medical School), 2011-2013. General Surgery Resident, University of Chicago.
5. Terra Schaezel-Hill (Medical School), 2012-2015. Resident in Internal Medicine, Alpert Medical School
6. Sandeep Nayak (Undergraduate and Medical School), 2012-2016. Published one manuscript. Psychiatry resident, Johns Hopkins University.
7. Amy Walker (Medical School) 2013-2016. Resident in Emergency Medicine, University of Washington.
8. Katie Pivarnik (Medical School) 2013-2016. Resident in Obstetrics and Gynecology.
9. Arison Than (Undergraduate PLME), 2012- Student, Alpert Medical School, Brown University.
10. Uday Agrawal (Undergraduate) 2012-2016. Published one manuscript. HST program, Harvard Medical School/MIT.
11. Juan Santoyo, 2012- Published one manuscript. Research Assistant, Department of Neuroscience, Brown University.
12. Chloe Zimmerman, 2014- Research Coordinator, Embodied Neuroscience Lab (Alpert Medical School class of 2021)

#### FORMALLY SUPERVISED TRAINEES (AT HARVARD MEDICAL SCHOOL)

1. Elizabeth Morey, 2003-2005. Attending Physician, Stanford University Medical Center. Published one manuscript with subsequent acceptance to Tufts Medical School.

2. Rachel Wasserman, 2003-2007. Clinical Assistant Professor, University of Albany Department of Psychology. Published two manuscripts with concurrent acceptance to Penn State University Graduate Study in Clinical Psychology.
3. Siu-Ping Chin Feman, 2004-2006. Attending Psychiatrist, UMASS Medical School. Published one manuscript with concurrent acceptance to Tulane Medical School.
4. Thomas Bayer, 2006-2007. Internal Medicine Physician. Belleville, Illinois. Published one manuscript with concurrent acceptance to SUNY-Downstate Medical School.
5. Andrea Rivers, 2006-2008. Family Medicine Physician. Puyallup, Washington. Published one manuscript with subsequent acceptance to UAB Medical School.
6. Alok Kanojia, 2007-2008. Psychiatry Resident, Maclean-MGH-Harvard Psychiatry. Published one manuscript with subsequent acceptance to Tufts Medical School.
7. Darshan Mehta, 2005-2007. Assistant Professor in Medicine, Harvard Medical School Faculty, Clinical Director, Benson Henry Institute for Mind-Body Medicine, Massachusetts General Hospital. Advised on implementation of his mindfulness medical education research agenda.
8. Rebecca Wells, 2008-2012. Assistant Professor of Neurology, Wake Forest University. Mentored two manuscripts during Harvard Fellowship training period.
9. Krishnapriya Josyula, 2008-2010. PhD student, clinical psychology, University of Utah. Published one manuscript.
10. Neetu Mulchandani, Thesis Committee, Masters Program in Medical Science, 2008-2009

#### FORMAL TEACHING OF PEERS (CME)

DCRC Faculty Research Methods Course for Acupuncture Faculty Research Methods Course (for CEU credit) Harvard Medical School / New England School of Acupuncture.

Meditation: Review of Current Research. 2006.

New Approaches to Gerontology and Aging. CME for Korean Physicians. Harvard School of Public Health, 2007.

Cortical Dynamics of Mindfulness Meditation Research Symposium, Annual International Scientific Conference, CME for Psychotherapists. Center for Mindfulness. University of Massachusetts Medical School. Worcester, MA, 2009.

Neural Mechanisms of Mindfulness. CME for Psychiatrists. Massachusetts Psychiatric Association, Wellesley, MA, 2011.

Department of Psychiatry, Tufts University, CME for Psychiatrists, 2011.



## ADMINISTRATIVE LEADERSHIP

### HARVARD

- 2004-2005 Co-Chair, Interfaculty Initiative funded by Harvard University Office of the Provost, Healing and the Predisposition to Healing.
- 2006-2011 Co-Chair, Placebo and Healing Speakers Series, sponsored by Osher Research Center / Harvard Medical School / Department of Social Medicine, HMS / Department of Anthropology, FAS, Harvard University.

### BROWN

- 2011-2014 Contemplative Studies Initiative Steering Committee, Brown University.
- 2012- 2014 Scholarly Concentration Subcommittee, Brown University Medical School.
- 2016 Leadership of Mindfulness Speaker Series at Brown University.
- 2016 Leadership of Mindfulness Resilience Curriculum at Brown University Medical School.

## REVIEWER

### Journals

- 2003 Annals of Internal Medicine
- 2005 Neuroimage
- 2007-2008 Evidence Based Complementary and Alternative Medicine
- 2007 Contemporary Clinical Trials
- 2007-2008 Journal of Pain
- 2007-2008 Journal of Alternative and Complementary Medicine
- 2008 Perception and Psychophysics
- 2010 European Journal of Neuroscience
- 2011 Frontiers in Human Neuroscience
- 2012 PLOS One
- 2013 Journal of Experimental Psychology-General
- 2013 Journal of Neuroscience
- 2013-2015 Frontiers in Human Neuroscience

### Grants

1. Grant Reviewer, Health, Welfare and Food Bureau, Government, 2003.
2. Secretariat, Government of the Hong Kong Special Administrative Region, The People's Republic of China, 2007-2008.
3. Grant Reviewer, Challenge 06-AT-101 (Imaging Correlates of Brain States), ARRA Challenge Grant Program, National Institutes of Health (NIH), 2009.

## COVERAGE OF RESEARCH IN POPULAR MEDIA

- 2015 Quoted in Deseret News (Salt Lake City), KALW
- 2014 Op-ed in Huffington Post ("Why do studies of meditation and the brain matter")
- 2014 Interview in Tricycle Magazine. Highly critical of media coverage of mindfulness-science. Interview translated into Chinese and German ("Don't Believe the Hype")
- 2013 Coverage of our review article (Mindfulness starts with the body) in Huffington Post, CBC radio, Guardian.

- 2012 CBS news story on mindfulness-wellness at Brown Medical School.
- 2011 Expert view cited in popular press (CBS/WebMD web site, Prevention Magazine).
- 2011 Forbes Magazine, in-depth Interview.
- 2011- [News media coverage] Coverage of **Kerr**, et al. 2011 report on meditation and alpha rhythm modulation (including: New York Times, Technology Review, US News and World Report, Fox25 TV News Boston, Times of India, MIT News, Harvard Gazette).
- 2010 [Article] Harvard Medicine (formerly, Harvard Medical School Alumni Bulletin), Healing and the sense of touch.
- 2009 [Article] Harvard Magazine, Tai Chi, 2008.
- 2007- [News media coverage] Coverage of **Kerr**, Shaw, et al. 2008 report on enhanced tactile acuity in Tai Chi practitioners (Prevention Magazine, Frankfurter Rundschau Newspaper (Frankfurt, Germany).
- 2005- [News media coverage] Coverage of Lazar, **Kerr**, et al. 2005 report on cortical thickness (Time Magazine, New York Times, National Geographic, CNN, NPR and many other media outlets).

Patient Education Material:

- 2003 Qigong and Cancer, Spirituality and Health Magazine [article]; Author, March/April.
- 2004 Dalai Lama's Mind and Life [article], Author, Conference at MIT, Spirituality and Health Magazine; January/February.