

Curriculum Vitae

Richard Hammerschlag, PhD

- Present Positions:** Dean Emeritus of Research
Oregon College of Oriental Medicine
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Institute Scholar Emeritus
The Institute for Integrative Health
1407 Fleet Street
Baltimore, Maryland 21231

Adjunct Professor, Dept of Neurology
Oregon Health & Science University
3181 SW Sam Jackson Park Rd
Portland, OR 97201-3098
- Previous Positions:** Dean of Research
Oregon College of Oriental Medicine
Portland, OR 97209
September 1999 - August 2009

Institute Scholar
The Institute for Integrative Health
Baltimore, MD 21231
September 2007 - August 2013

Academic Dean and Research Director,
Yo San University of Traditional Chinese Medicine
Santa Monica, California 90401
September, 1995 - August, 1998

Associate Chairman, Division of Neurosciences,
Beckman Research Institute, City of Hope Medical Center
Duarte, CA 91010
October 1986 - August 1995
- Personal Data:** Born: New York City - June 12, 1939
- Education:** Massachusetts Institute of Technology, Cambridge, MA
B.S. - 1960 (Humanities and Science)
B.S. - 1961 (Chemistry)

Brandeis University, Waltham, MA
Ph.D. - 1967 (Biochemistry)
- Research Appointments:** Postdoctoral Fellow, U.S. National Institutes of Health
Dept of Biophysics, University College, London, England
Aug 1967 - Oct 1969.

Wellcome Foundation Visiting Fellow, University College
Medical School, Dar es Salaam, Tanzania, Nov 1969 - Feb 1970.

Assistant Research Scientist, Division of Neurosciences, City of Hope
National Medical Center, Duarte, CA, Mar 1970 - Aug 1975.

Associate Research Scientist, Division of Neurosciences, City of
Hope Research Institute, Duarte, CA, Oct 1975 - Sept 1984.

Research Scientist, Division of Neurosciences, Beckman Research
Institute of the City of Hope, Duarte, CA, Oct 1984 - Dec 1995.

Academic

Appointments:

Adjunct Assistant Professor, Department of Biochemistry,
University of Southern California School of Medicine,
Los Angeles, CA; Sept. 1972 to June 1974.

Visiting Lecturer, Division of Biology, California Inst of Technology,
Pasadena, CA; spring term, 1976.

Visiting Lecturer, Biomedical Sciences, University of California,
Riverside; fall and winter quarters, 1978, fall quarter, 1979.

Guest Lecturer, Dept. of Neurosciences, University of California,
San Diego, School of Medicine; winter quarters, 1991-1994.

Lecturer, Yo San University of Traditional Chinese Medicine,
Santa Monica, CA; 1991 - 1995.

Academic Dean, Yo San University of Traditional Chinese Medicine,
Santa Monica, CA; 1995 - 1999.

Dean of Research, Oregon College of Oriental Medicine,
Portland, OR; 1999 - present

BIOMEDICAL RESEARCH-RELATED ACTIVITIES

Honors: U.S. National Institutes of Health, Jacob Javits Neuroscience
Investigator Award; April 1989 - March 1996.

Societies: Society for Neuroscience
American Society for Neurochemistry
International Society for Neurochemistry
American Society for Cell Biology
Society for Acupuncture Research

Service:

City of Hope: Coordinator, Summer Student Program, 1975-77; 1985;
President, Research Staff Organization, City of Hope Res Inst, 1980;
Chair, Faculty Senate Appointments & Promotions Committee, 1986-87
Associate Chair, Div. of Neurosciences, Oct 1986 to Dec 1995.

NIH: National Institute of Neurological Diseases and Stroke, Special
Study Section, Nov 1980;
Neurology B Study Section, Ad Hoc Member, July 1984;
Neurological Sciences 1 Study Section, Feb 1985 to June 1987;
Neurological Sciences 1 Study Section, Ad Hoc, June 1990.

- Societies:
- American Society for Neurochemistry
 - Council Member, 1987 - 1991
 - Chair, Public Policy Committee, 1990 - 1993
 - Chair, Program Committee, 1993
 - International Society for Neurochemistry
 - Membership Committee, 1983-1987; 1991-1993
 - Committee for Developing Countries, 1989-1995
 - Council Member, 1991-1995.

Journals: Editorial Board, *Cellular and Molecular Neurobiology*, 1980-1994
 Editorial Board, *Journal of Neurochemistry*, 1986-1993
 Editorial Analyst, *Chemtracts: Biochemistry & Molecular Biol*, 1990-93

Publications: Over 40 publications in peer-review journals and 11 book chapters (available on request)

ACUPUNCTURE-RELATED ACTIVITIES

Service:

Yo San University of Traditional Chinese Medicine
 1991 - 1994 Advisory Board

Office of Alternative Medicine (OAM), NIH, Bethesda, MD
 July, 1993 Panel Member, Acupuncture Grants Review
 April, 1994 Chair, Research Methodology Panel
 OAM/FDA Workshop on the Status of the Acupuncture Needle
 November, 1996 Member, Planning Committee for 11/97 NIH Consensus
 Development Conference on Acupuncture
 November, 1997 Presenter, NIH Consensus Development Conference on Acupuncture:
 "Methodological and Ethical Issues in Acupuncture Research"
 July, 1998 Member, Special Study Section: Acupuncture Methodology Grants

National Center for Complementary and Alternative Medicine (NCCAM), NIH
 March, 1999 Member, Special Emphasis Panel
 June, 1999 Member, Special Emphasis Panel on Center Grants
 December, 2000 Member, Special Emphasis Panel
 November, 2001 Member, Special Emphasis Panel
 March, 2002 Member, Special Emphasis Panel
 July, 2003 Member, Special Emphasis Panel

National Institute of Drug Abuse
 June, 2000 Member, Special Study Section

Journal Editorial Boards

1999 – 2003	<i>Clinical Acupuncture and Oriental Medicine</i>
2000 – present	<i>Journal of Alternative and Complementary Medicine</i>
2005 – present	<i>Explore: The Journal of Science and Healing</i>

Society for Acupuncture Research

1994 - 2012	Board Member
1997 - 2003	Co-President

Completed Research:

1) "Comparison of CAM modalities (acupuncture, chiropractic, massage therapy) to conventional care for treating non-dysfunctional TMD pain" [Phase II clinical trial].

2) "Comparison of CAM systems (traditional Chinese medicine, naturopathic medicine) to conventional care for treating TMD presenting with multiple systemic disorders" [Phase II clinical trial].

1 & 2 Conducted within "Oregon Center for Complementary and Alternative Medicine Research in Craniofacial Disorders", NIH, National Center for Complementary and Alternative Medicine, P50 (AT00076); 9/30/99 – 7/31/04; PI: Alexander B. White, DDS, DrPH
Richard Hammerschlag, PhD (Co-investigator, 15%).

3) "Treatment of Multiple Sclerosis-Specific Fatigue with Traditional Chinese Medicine: A randomized, placebo-controlled pilot study"

PI: Richard Hammerschlag, PhD (20% effort); 10/1/01 – 7/31/04

Developmental research project awarded by "Oregon Center for Complementary and Alternative Medicine in Neurological Disorders", NIH, National Center for Complementary and Alternative Medicine, P50 (AT00066); 9/30/99 – 7/31/04; PI: Barry Oken, MD

4) "Endometriosis Pain: Chinese Medicine vs. Hormone Therapy" [Phase II clinical trial]

R21 AT00453; NIH, National Center for Complementary and Alternative Medicine,

PI: Richard Hammerschlag, PhD (25% effort); 9/30/01 – 8/31/06

5) "Oregon CAM Project"

PI: Edward Keenan, PhD; R25 (AT001173-03); 7/15/02 – 4/30/07

NIH, National Center for Complementary and Alternative Medicine

This education grant developed a CAM curriculum for medical students at Oregon Health & Science University. Dr. Hammerschlag served on the Evaluation Committee.

6) "Complementary and Alternative Medicine: Expectancy and Outcomes"

PI: Barry Oken, MD; U19 (AT002656-01); 9/30/04 – 7/30/09

NIH, National Center for Complementary and Alternative Medicine

This Developmental Center for Research in CAM (DCRC) award included a project, "Effect of expectancy on the response of Parkinson's disease patients to placebo L-DOPA and to sham acupuncture". Dr. Hammerschlag was co-investigator on this project.

7) "TCM for TMD: A Multi-Site Whole-Systems Trial"

PI: Cheryl Ritenbaugh, PhD, MPH; R01 (AT002570); 9/30/05 – 8/31/09

NIH, National Center for Complementary and Alternative Medicine

This multi-site trial, between the University of Arizona and the Oregon College of Oriental Medicine, tested the effectiveness of traditional Chinese medicine delivered as a system of care to women with complex temporomandibular disorder. Dr. Hammerschlag was co-investigator.

8) "Acupuncture Practitioner Research Education Enhancement"

PI: Richard Hammerschlag, PhD; R25 (AT002879); 9/01/05 – 8/31/09

NIH, National Center for Complementary and Alternative Medicine

This grant was awarded as part of an NIH/NCCAM initiative to enhance research education of CAM practitioners at CAM colleges.

Publications:

Hammerschlag R and Parfitt AG (1994) Research proposals on the clinical effectiveness of acupuncture: guidelines and suggestions for grant writing. *Amer J Acupunct* 22:55-60.

Birch S, Hammerschlag R and Berman BM (1996) Acupuncture in the treatment of pain. *J Altern Complement Med* 2:101-124.

Birch S and Hammerschlag R (1996) *Acupuncture Efficacy: A Compendium of Controlled Clinical Trials*. National Academy of Acupuncture & Oriental Medicine, Tarrytown, NY.

Hammerschlag, R (1997) Acupuncture efficacy: presenting the evidence, *J Nat Acad Acupunct Orient Med* 4:9-10.

Hammerschlag, R and Morris, MM (1997) Clinical trials comparing acupuncture to biomedical standard care: a criteria-based evaluation of research design and reporting, *Complement Ther Med* 5:133-140.

Hammerschlag R (1998) Methodological and ethical issues in clinical trials of acupuncture, *J Altern Complement Med* 4:159-171.

Hammerschlag R (2000) Funding of acupuncture research by the National Institutes of Health: A brief history, *Clin Acupunct Orient Med*, 3:133-138.

Stux G, Hammerschlag R (eds) (2001) *Clinical Acupuncture: Scientific Basis*, Springer-Verlag, Berlin.

Lao L, Berman BM, Ezzo J, Hammerschlag R (2001) Assessing clinical efficacy of acupuncture: Considerations for future acupuncture trials, In: *Clinical Acupuncture: Scientific Basis*, Stux G, Hammerschlag R (eds), Springer-Verlag, Berlin, pp.187-209.

Hammerschlag R, Lao L (2001) Future directions for research on the physiology of acupuncture, In: *Clinical Acupuncture: Scientific Basis*, Stux G, Hammerschlag R (eds), Springer-Verlag, Berlin, pp.211-219.

Williams LA, Hammerschlag R (2001) Designing clinical research comparing multiple complementary and alternative medicine systems: the experience of an NCCAM Center, *Altern Ther Health Med* 7:S37 (Abstr.)

Hammerschlag R, Kaneko R, Bourdette D (2001) Treatment of multiple sclerosis-specific fatigue with traditional Chinese medicine: development of a randomized, controlled pilot study, *Altern Ther Health Med* 7:S14 (Abstr.)

Hammerschlag R (2002) Physiology of acupuncture, In: *Contemporary Chinese Medicine and Acupuncture*, Cassidy CM (ed), Harcourt Brace, Orlando FL, pp. 203-222.

White AR, Trinh K, Hammerschlag R (2002) Performing systematic reviews of clinical trials of acupuncture: problems and solutions, *Clin Acupunct Orient Med* 3:26-31.

MacPherson H, Sherman K, Hammerschlag R, Birch S, Lao L, Zaslowski C (2002) The clinical evaluation of traditional East Asian systems of medicine, *Clin Acupunct Orient Med* 3:16-19.

Birch S, Hammerschlag R, Trinh K, Zaslowski C (2002) The non-specific effects of acupuncture treatment: When and how to control for them, *Clin Acupunct Orient Med* 3:20-25.

Hintz KJ, Yount GL, Kadar I, Schwartz G, Hammerschlag R, Lin S (2003) Bioenergy definitions and research guidelines, *Altern Ther Health Med* 9(3):A13-A30.

Hammerschlag R (2003) Acupuncture: On what should its evidence base be based? *Altern Ther Health Med* 9(5):34-35.

Nielsen A, Hammerschlag R (2004) Acupuncture and East Asian Medicine, In: *Integrative Medicine: Principles for Practice* (ed: Kligler B, Lee R) McGraw-Hill, New York, pp. 177-217.

Colbert AP, Hammerschlag R, Aickin M, McNames J (2004) Reliability of *Prognos* for electrodermal measurements at acupuncture points, *J Altern Complement Med* 10:610-616.

Ahn AC, Wu J, Badger GJ, Hammerschlag R, Langevin HM (2005) Electrical impedance along connective tissue planes associated with acupuncture meridians, *BMC Complement Altern Med* 5:10.

Colbert AP, Hayes M, Aickin M, Hammerschlag R (2006) Physiologic variability of electrical skin resistance measurements at the Ting acupuncture points. *Med Acupunct* 17(2):12-19.

Sinclair-Lian N, Hollifield M, Menache T, Warner T, Viscaya J, Hammerschlag R (2006) Developing a Traditional Chinese Medicine diagnostic structure for post-traumatic stress disorder. *J Altern Complement*

- Med* 12(1):45-57.
- Hammerschlag R, Zwickey H (2006) Evidence-based complementary and Alternative Medicine: back to basics. *J Altern Complement Med* 12(4):349-350.
- Napadow V, Webb JM, Pearson N, Hammerschlag R. (2006) Neurobiological correlates of acupuncture: November 17-18, 2005. *J Altern Complement Med* 12(9):931-935.
- Langevin HM, Hammerschlag R, Lao L, Napadow V, Schnyer RN, Sherman KJ (2006) Controversies in acupuncture research: selection of controls and outcome measures in acupuncture clinical trials. *J Altern Complement Med* 12(10):943-953.
- Hollifield M, Sinclair-Lian N, Warner T, Hammerschlag R (2007) Acupuncture for posttraumatic stress disorder: A randomized controlled pilot trial. *J Nerv Ment Dis* 195(6):504-13.
- Pearson S, Colbert AP, McNames J, Baumgartner M, Hammerschlag R (2007) Electrical skin impedance at acupuncture points. *J Altern Complement Med* 13(4):409-18.
- Nedrow AR, Istvan J, Haas M, Barrett R, Salveson C, Moore G, Hammerschlag R, Keenan E (2007) Implications for education in complementary and alternative medicine: a survey of entry attitudes in students at five health professional schools. *J Altern Complement Med* 13(3):381-386
- MacPherson H, Hammerschlag R, Lewith G, Schnyer R (eds) (2007) *Acupuncture Research: Strategies for Establishing an Evidence Base*, Churchill Livingstone/Elsevier, Edinburgh.
- Hammerschlag R, Langevin H, Lao L, Lewith G (2007) Physiological dynamics of acupuncture: Correlations and mechanisms, In: *Acupuncture Research: Strategies for Establishing an Evidence Base* (ed: MacPherson H, Hammerschlag R, Lewith G, Schnyer R) Churchill Livingstone/Elsevier, Edinburgh, pp.181-197.
- Linde K, Hammerschlag R, Lao L (2007) Evidence overviews: The role of systematic reviews and meta-analyses, In: *Acupuncture Research: Strategies for Establishing an Evidence Base* (ed: MacPherson H, Hammerschlag R, Lewith G, Schnyer R) Churchill Livingstone/Elsevier, Edinburgh, pp.199-217.
- Benjamin PJ, Phillips R, Warren D, Salveson C, Hammerschlag R, Snider P, Haas M, et al (2007) Response to a proposal for an integrative medicine curriculum. *J Altern Complement Med* 13(9):1021-1033.
- Ahn AC, Colbert AP, Anderson BJ, Martinsen OG, Hammerschlag R, Cina S, Wayne PM, Langevin HM (2008) Electrical properties of acupuncture points and meridians: A systematic review. *Bioelectromagnetics* 29(4):245-56.
- Hammerschlag R, Lasater K, Salanti S, Fleishman S (2008) Research Scholars Program: A faculty development initiative at the Oregon College of Oriental Medicine. *J Altern Complement Med* 14(4):437-43.
- Ritenbaugh C, Hammerschlag R, Calabrese C, Mist S, Aickin M, Sutherland E, Leben J, DeBar L, Elder C, Dworkin S (2008) A pilot whole systems clinical trial of traditional Chinese medicine and naturopathic medicine for the treatment of temporomandibular disorders. *J Altern Complement Med* 14(5):475-87.
- Lasater K, Salanti S, Fleishman S, Coletto C, Jin H, Lore R, Hammerschlag R (2009) Learning activities to enhance research literacy in a CAM college curriculum. *Altern Ther Health Med* 15(4):46-54.
- Wayne PM, Hammerschlag R, Langevin HM, Napadow V, Park JJ, Schnyer RN (2009) Resolving paradoxes in acupuncture research: a roundtable discussion. *J Altern Complement Med* 15(9):1039-44.
- MacPherson H, Altman DG, Hammerschlag R, Youping L, Taixiang W, White A, Moher D; STRICTA Revision Group. (2010) Revised STANDards for Reporting Interventions in Clinical Trials of Acupuncture (STRICTA): extending the CONSORT statement. *PLoS Med* 7(6):e1000261.
- Wayne PM, Hammerschlag R, Savetsky-German J, Chapman TF (2010) Attitudes and interests toward research among students at two colleges of acupuncture and Oriental medicine. *Explore (NY)* 6(1):22-8
- Langevin HM, Wayne PM, Macpherson H, Schnyer R, Milley RM, Napadow V, Lao L, Park J, Harris RE, Cohen M, Sherman KJ, Haramati A, Hammerschlag R (2011) Paradoxes in acupuncture research: strategies for moving forward. *Evid Based Complement Alternat Med* 2011:180805.
- Hammerschlag R, Milley R, Colbert A, Weih J, Yohalem-Ilsley B, Mist S, Aickin M (2011) Randomized Controlled Trials of Acupuncture (1997-2007): An Assessment of Reporting Quality with a CONSORT- and STRICTA-Based Instrument. *Evid Based Complement Altern Med* 2011;2011. pii:183910.
- Hammerschlag R, Jain S, Baldwin AL, Gronowicz G, Lutgendorf SK, Oschman JL, Yount GL (2012) Biofield research: a roundtable discussion of scientific and methodological issues. *J Altern Complement Med* 18(12):1081-6.
- Ritenbaugh C, Hammerschlag R, Dworkin SF, Aickin MG, Mist SD, Elder CR, Harris RE (2012) Comparative effectiveness of traditional Chinese medicine and psychosocial care in the treatment of temporomandibular disorders-associated chronic facial pain. *J Pain* 13(11):1075-89.
- Elder C, Ritenbaugh C, Aickin M, Hammerschlag R, Dworkin S, Mist S, Harris RE (2012) Reductions in pain

- medication use associated with traditional Chinese medicine for chronic pain. *Perm J* 16(3):18-23.
- Witt CM, Aickin M, Baca T, Cherkin D, Haan MN, Hammerschlag R, et al (2012) Effectiveness Guidance Document (EGD) for acupuncture research - a consensus document for conducting trials. *BMC Complement Altern Med* 12:148.
- MacPherson H, Hammerschlag R (2012) Acupuncture and the emerging evidence base: contrived controversy and rational debate. *J Acupunct Meridian Stud* 5(4):141-7.
- Witt CM, Manheimer E, Hammerschlag R, Lüdtke R, Lao L, Tunis SR, Berman BM (2012) How well do Randomized trials inform decision making: systematic review using comparative effectiveness research measures on acupuncture for back pain. *PLoS One* 7(2):e32399.
- Marx BL, Milley R, Cantor DG, Ackerman DL, Hammerschlag R (2013) AcuTrials®: an online database of randomized controlled trials and systematic reviews of acupuncture. *BMC Complement Altern Med* 13:181.
- Lou JS, Dimitrova DM, Hammerschlag R, Nutt J, Hunt EA, Eaton RW, Johnson SC, Davis MD, Arnold GC, Andrea SB, Oken BS (2013) Effect of expectancy and personality on cortical excitability in Parkinson's disease. *Mov Disord* 28(9):1257-62.
- Marx BL, Rubin LH, Milley R, Hammerschlag R, Ackerman DL (2013) A prospective patient-centered data collection program at an acupuncture and oriental medicine teaching clinic. *J Altern Complement Med* 19(5):410-5.
- Baldwin AL, Hammerschlag R (2014) Physiological changes within biofield healers during healing states. *Explore: J Sci Healing* In Press)