

MARIE HOEGER BEMENT, P.T., PH.D.

Associate Professor
Marquette University
Department of Physical Therapy
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EDUCATION

- 2004 Doctor of Philosophy
 Physical Rehabilitation Science
 University of Iowa
 Iowa City, Iowa
- 1997 Master of Physical Therapy
 University of Iowa
 Iowa City, Iowa
- 1994 Bachelor of Arts
 General Science Major, Biology Minor
 University of Northern Iowa
 Cedar Falls, Iowa

PROFESSIONAL EXPERIENCE

- 2014 Certified Exercise Expert for Aging Adults
 Academy of Geriatric Physical Therapy
 American Physical Therapy Association
- 2004-pres Assistant Professor (promoted to Associate in 2012)
 Marquette University
 Department of Physical Therapy
 Milwaukee, Wisconsin
- 2002-2004 Predoctoral Fellow with K. Sluka
 University of Iowa
 Physical Therapy Department
 Iowa City, Iowa
- 2000-2002 Teaching and Laboratory Assistant
 University of Iowa
 Physical Therapy Department
 Iowa City, Iowa
- 1998-2000 Physical Therapist
 Genesis Medical Center
 Bettendorf, Iowa
 Illinois License # 70010766

PUBLICATIONS

1. Kolkhorst FW, Broshears CL, **Hoeger** MK, Thurman CL. Effect of a sport food bar on lipolysis and fat oxidation during prolonged exercise. *Sports Medicine, Training and Rehabilitation*, 9(1):71-78, 1999.

2. **Hoeger Bement** MK, Sluka KA. Repeated intramuscular acid injections produce cAMP-dependent hyperalgesia and CREB phosphorylation in a time-dependent manner. *Journal of Neuroscience*, 23(13):5437-5445, 2003.
3. **Hoeger Bement** MK, Radhakrishnan R, Skyba DS, Sluka KA. Musculoskeletal pain: central mechanisms. *Seminars in Pain Medicine*, 1:139-149, 2003.
4. Radhakrishna R, **Bement** MKH, Skyba DA, Kehl LJ, Sluka KA. Models of muscle pain: carrageenan model and acidic saline model. *Current Protocols in Pharmacology*, 5.35.1-5.35.27, 2004.
5. Skyba DA, Radhakrishnan R, **Hoeger Bement** MK, Sluka KA. The cAMP pathway and pain: potential targets for drug development. *Drug Discovery Today: Disease Models*, 1(2):115-119, 2004.
6. **Hoeger Bement** MK, Sluka KA. Low intensity exercise reverses chronic muscle pain in the rat in a naloxone dependent manner. *Archives of Physical Medicine and Rehabilitation*, 86(9):1736-1740, 2005.
7. **Hoeger Bement** MK. Sex differences in pain perception. Pain Management Special Interest Group. *Orthopaedic Physical Therapy Practice*, 18(4):53-55, 2006.
8. **Hoeger Bement** MK, Sluka KA. Co-localization of p-CREB and p-NR1 in spinothalamic neurons in a chronic muscle pain model. *Neuroscience Letters*, 418(1):22-27, 2007.
9. **Hoeger Bement** MK, DiCapo J, Rasiarmos R, Hunter SK. Dose-response of isometric contractions on pain perception in healthy adults. *Medicine & Science in Sports & Exercise*, 40(11):1880-1889, 2008.
10. **Hoeger Bement** M, Rasiarmos R, DiCapo J, Lewis A, Keller M, Harkins A, Hunter S. The role of the menstrual cycle phase in pain perception before and after an isometric fatiguing contraction. *European Journal of Applied Physiology*, 106(1): 105-112, 2009.
11. **Hoeger Bement** MKH, Weyer A, Hartley S, Yoon T, Hunter SK. Fatiguing exercise attenuates pain-induced corticomotor excitability. *Neuroscience Letters*, 452(2): 209-213, 2009.
12. Lemley K, **Hoeger Bement** MK. Do opioids alone explain exercise-induced hypoalgesia? Pain Management Special Interest Group. *Orthopaedic Physical Therapy Practice*, 21(4):168-170, 2009.
13. **Hoeger Bement** MK, Weyer A, Keller A, Harkins A, Hunter SK. Anxiety and stress can predict pain perception following a cognitive stress. *Physiology and Behavior*, 101(1):87-92, 2010.
14. Cote J, **Hoeger Bement** MK. Update on the relation between pain and movement: consequences for clinical practice. *Clinical Journal of Pain*, 26(9):754-762, 2010.
15. **Hoeger Bement** MK, Weyer A, Hartley S, Drewek B, Harkins AL, Hunter SK. Pain perception after isometric exercise in women with fibromyalgia. *Archives of Physical Medicine and Rehabilitation*, 92(1):89-95, 2011.
16. Stolzman S, **Hoeger Bement** MK. Inflammatory markers in pediatric obesity: health and physical activity implications. *Infant, Child, and Adolescent Nutrition*, 4(5): 297-302, 2012.
17. Senefeld J, Yoon T, **Hoeger Bement** MK, Hunter SK. Fatigue and recovery from dynamic contractions in men and women differ for arm and leg muscles. *Muscle and Nerve*, 48(3): 436-9, 2013.
18. Lemley KJ, Drewek B, Hunter SK, **Hoeger Bement** MK. Pain relief following isometric exercise is not task-dependent in older men and women. *Medicine & Science in Sports & Exercise*, 46(1): 185-91, 2014.
19. **Hoeger Bement** MK, Weyer A, Yoon T, Hunter SK. Corticomotor excitability during a noxious stimulus and following exercise in women with fibromyalgia. *Journal of Clinical Neurophysiology*, 31(1): 94-8, 2014.
20. **Hoeger Bement** MK, St. Marie B, Nordstrom T, Christensen N, Mongoven JM, Koebner IJ, Fishman SM, Sluka KA. An interprofessional consensus of core competencies for prelicensure education in pain management: curriculum application for physical therapy. *Physical Therapy Journal*, 94(4): 451-65, 2014.
21. **Bement** MK, Drewek B, Hunter SK. Men report greater pain relief than women following isometric contractions when matched for baseline pain. *Journal of Motor Behavior*, 46(2):

- 107-13, 2014.
22. Lemley KJ, Hunter SK, **Hoeger Bement** MK. Conditioned pain modulation predicts exercise-induced hypoalgesia in healthy adults. *Medicine & Science in Sports & Exercise*, 47(1): 176-84, 2015.
 23. **Hoeger Bement** M, Sluka KA. The current state of physical therapy pain curriculum in the USA: A Faculty Survey. *Journal of Pain*, 16(2): 144-52, 2015.
 24. Maxwell Pereira H, Spears VC, Schlinder-Delap B, Yoon T, Harkins A, Nielson K, **Hoeger Bement** M, Hunter SK. Sex differences in arm muscle fatigability with cognitive demand in older adults. *Clinical Orthopaedics and Related Research*, *accepted*.
 25. Stolzman S, Danduran M, Hunter S, **Hoeger Bement** M. Pain relief after high intensity aerobic exercise in adolescents across weight status. *Medicine & Science in Sports & Exercise*, *accepted*.

CHAPTERS

1. Sluka KA, **Hoeger** MK, Skyba DA. Basic science mechanisms of nonpharmacological treatments for pain. In *An Updated Review: Refresher Course Syllabus* (Giamberardino MA, ed) pp.189-195. International Association for the Study of Pain Press, Seattle, WA, 2002.
2. Sluka KA, Skyba D, **Hoeger Bement** MK, Audette K, Radhakrishnan R. Second messenger pathways in pain. In *Molecular Pain* (Zhuo M, ed) pp. 219-234. Higher Education Press, Beijing, China, 2007.
3. **Hoeger Bement** MK, Sluka KA. Pain: perception and mechanisms. In *Scientific Foundations and Principles of Practice in Musculoskeletal Rehabilitation* (Magee DJ, Zachazewski JE, and Quillen WS, eds) pp. 217-237. Saunders-Elsevier Health Sciences, St. Louis, MO, 2007.
4. **Hoeger Bement** MK. Exercise-induced hypoalgesia: an evidence-based review. In *Mechanisms and Management of Pain for the Physical Therapist* (Sluka KA, ed) pp.143-166. International Association for the Study of Pain Press, Seattle, WA, 2009.
5. **Hoeger Bement** MK, Vance C, Sluka KA. Managing wound-related pain. In *Wound Healing Evidence-Based Management 4th edition* (Kloth LC and McCulloch JM, eds) pp. 391-409. F.A. Davis Company, Philadelphia, PA, 2010.
6. **Hoeger Bement** MK, Sluka KA. Exercise-induced hypoalgesia: an evidence-based review. In *Mechanisms and Management of Chronic Pain for the Physical Therapist* (Sluka KA, ed) International Association for the Study of Pain Press, Seattle, WA, *in press*.

ABSTRACTS

Peer-Reviewed

1. **Hoeger** MK, Kolkhorst FW. Effects of a sport food bar on lipolysis and fat oxidation during treadmill running. American College of Sports Medicine Annual Meeting, Minneapolis, MN, 1995.
2. **Hoeger** MK, Sluka KA. Increased phosphorylation of CREB and reversal by blockade of adenylate cyclase in a chronic muscle pain model in the rat. International Association for the Study of Pain, San Diego, CA, 2002.
3. **Hoeger** MK, Sluka KA. Low intensity exercise reverses chronic muscle hyperalgesia in rats and is prevented with naloxone. American Physical Therapy Association, Combined Sections Meeting, Tampa, FL, 2003.
4. **Hoeger Bement** MK, Sluka KA. Chronic muscle hyperalgesia is reversed by low intensity exercise which is prevented by naloxone. American Pain Society, Chicago, IL, 2003.
5. **Bement** MKH, DiCapo JM, Rasiarmos R, Griffith E, Hunter S. Maximal voluntary contractions decrease pressure-induced pain in healthy men and women. American Physical Therapy Association, Combined Sections Meeting, San Diego, CA, 2006.
6. **Hoeger Bement** MK, Rasiarmos RL, DiCapo JM, Griffith EE, Hunter SK. Pain decreases after long duration and low intensity isometric contractions in men and women. American Pain Society Annual Meeting, San Antonio, TX, 2006.

7. **Hoeger Bement** MK, Rasiarmos RL, DiCapo JM, Griffith EE, Hunter SK. Sex differences and reductions in pressure-induced pain following submaximal isometric contractions. American College of Sports Medicine Annual Meeting, Denver, CO, 2006.
8. **Hoeger Bement** MK, DiCapo JM, Rasiarmos R, Lewis A, Hunter SK. Phase of the menstrual cycle does not affect exercise-induced analgesia. American Physical Therapy Association, Combined Sections Meeting, Boston, MA, 2007.
9. Koltyn K, Umeda M, Flood S, **Hoeger Bement** M. Use of coping strategies by older adults with chronic pain. American Pain Society Annual Meeting, Washington DC, 2007.
10. **Hoeger Bement** MK, Lewis A, DiCapo J, Rasiarmos R, Hunter SK. Mental stress alters pain perception. American Physical Therapy Association, Combined Sections Meeting, Nashville, TN, 2008.
11. **Hoeger Bement** MK, Keller ML, Harkins AL, Hunter SK. Cortisol levels before and after isometric contractions are not influenced by the menstrual cycle. American Pain Society Annual Meeting, Tampa, FL, 2008.
12. Haywood V, **Hoeger Bement** M. The management of pain using isometric contractions. McNair Research Program (national), Salisbury, MD, 2008.
13. **Hoeger Bement** MK, Weyer AD, Yoon T, Hunter SK. Corticomotor excitability and pain are not influenced by fatiguing exercise in women with fibromyalgia. American Physical Therapy Association, Section on Research Retreat, Pacific Grove, CA, 2009.
14. Weyer A, Hartley S, Yoon T, Hunter S, **Bement** MH. Exercise attenuates pain-induced increases in corticospinal excitability. American Physical Therapy Association, Combined Sections Meeting, Las Vegas, NV, 2009.
15. Hartley S, Weyer A, Hunter S, **Bement** MH. Experimental pain measurement in people with fibromyalgia. American Physical Therapy Association, Combined Sections Meeting, Las Vegas, NV, 2009.
16. Gilbey K, McKenna J, Gardner E, **Hoeger Bement** MK, Johnson M, Sluka KA, Leacock AG, Walsh DM. A preliminary investigation of the hypoalgesic effects of InterX therapy using experimental pain. American Physical Therapy Association, Combined Sections Meeting, San Diego, CA, 2010.
17. Lemley KA, **Hoeger Bement** MK. Experimental pain measurement in young and older adults. American Physical Therapy Association, Combined Sections Meeting, New Orleans, LA, 2011.
18. Drewek B, Roe J, Yoon T, Hunter SK, **Hoeger Bement** MK. Sex differences in pain relief occur following dynamic, but not isometric, exercise. American Pain Society Annual Meeting, Austin, TX, 2011.
19. **Hoeger Bement** MK, Weyer A, Yoon T, Hunter S. Corticomotor excitability during a noxious stimulus and after exercise in women with fibromyalgia. American Pain Society Annual Meeting, Honolulu, HI, 2012.
20. Lemley KJ, Drewek B, Miller L, Hunter SK, **Hoeger Bement** MK. Pain relief in older adults following static exercise is not task dependent. American College of Sports Medicine Annual Meeting, San Francisco, CA, 2012.
21. Senefeld J, Yoon T, **Hoeger Bement** M, and Hunter SK. Sex differences in fatigue during dynamic contractions differs between arm and leg muscles. American College of Sports Medicine Annual Meeting, San Francisco, CA, 2012.
22. Yoon T, Senefeld J, **Hoeger Bement** M, and Hunter SK. Age differences in fatigue during dynamic contractions in arm and leg muscles, American College of Sports Medicine Annual Meeting, San Francisco, CA, 2012.
23. Lemley KJ, Coate M, Hunter SK, **Hoeger Bement** MK. Relation between conditioned pain modulation and exercise-induced hypoalgesia in young healthy adults. American Pain Society Annual Meeting, New Orleans, LA, 2013.
24. Stolzman SC, Hoffmeister K, Coate M, Papanek PE, **Hoeger Bement** M. Does body composition influence physical fitness and pain reports in adolescents? Obesity Week, Atlanta, GA, 2013.
25. Stolzman S, Lemley K, Hoffmeister K, Coate M, Drendel A, **Hoeger Bement** M. Conditioned pain modulation & exercise-induced hypoalgesia in adolescents. American Physical

- Therapy Association, Combined Sections Meeting, Las Vegas, NV, 2014.
26. Stolzman S, Hoffmeister K, Coate M, Harkins A, Danduran M, Papanek PE, **Hoeger Bement M**. Inflammation, physical fitness, and pain in overweight/obese adolescents. American College of Sports Medicine Annual Meeting, Orlando, FL, 2014.
 27. Lemley K, Coate M, Hoffmeister K, **Hoeger Bement M**. Relation between pain catastrophizing and reporting of pain threshold in healthy adults. American Pain Society Annual Meeting, San Francisco, CA, 2014.
 28. Speltz J, Stolzman S, Danduran M, Harkins A, Papanek P, **Hoeger Bement M**. Differences in body composition, physical activity, and inflammation between fit and unfit overweight adolescents. College of Health Sciences Research Symposium, University of Wisconsin-Milwaukee, May 2014.
 29. Stolzman S, Speltz J, Hoffmeister K, Danduran M, Skelton J, Papanek P, Harkins A, **Hoeger Bement M**. The role of aerobic physical fitness on overweight adolescents. Obesity Week, Boston, MA, 2014.
 30. Stolzman S, Speltz J, Hoffmeister K, Danduran M, Skelton J, Papanek P, Harkins A, **Hoeger Bement M**. Physical fitness in overweight/obese adolescents. Milwaukee Regional Research Forum, Milwaukee, WI, 2014.
 31. Stolzman S, Hoffmeister K, Danduran M, **Hoeger Bement M**. **Exercise-induced hypoalgesia in adolescents: effects of sex and weight status**. American Physical Therapy Association, Combined Sections Meetings, Indianapolis, IN, 2015.
 32. Deering R, Senefeld J, Pashibin T, Pereira H, **Hoeger Bement M**, Eickmeyer S, Hunter S. Fatigability and steadiness of the trunk flexor muscles in young, healthy adults. American College of Sports Medicine Annual Meeting, San Diego, CA, 2015.

Non Peer-Reviewed

1. **Hoeger MK**, Sluka KA. The role of the cAMP pathway in a chronic muscle pain model in rats. Society for Neuroscience, San Diego, CA, 2001.
2. **Hoeger MK**, Sluka KA. Phosphorylation of the NMDA subunit NR1 remains unchanged and co-localization of p-NR1 and p-CREB with spinothalamic tract cells in a chronic muscle pain model in the rat. Society for Neuroscience, New Orleans, LA, 2003.
3. Skyba DS, **Hoeger Bement M**, Buttjer MD, Hanfelt CR, Lander RJ, Stelk CJ, Sluka KA. Spinal administration of 8-bromo-cAMP produces NMDA receptor-dependent hyperalgesia. Society for Neuroscience, New Orleans, LA, 2003.
4. **Hoeger Bement M**, Sluka KA. Exercise-induced analgesia in the rat. Midwest Pain Interest Group, Iowa City, IA, 2004.
5. DiCapo J, Griffith E, Rasiarmos R, Hunter SK, **Hoeger Bement M**. Pressure-induced pain is reduced after static contractions. College of Health Sciences Summer Research Program, Marquette University, Milwaukee, WI, 2005.
6. Rasiarmos R, DiCapo JM, Griffith E, Hunter SK, **Hoeger Bement MK**. Pressure-induced pain differs in men and women. College of Health Sciences Summer Research Program, Marquette University, Milwaukee, WI, 2005.
7. Lewis A, Hunter SK, **Hoeger Bement MK**. Role of the menstrual cycle in exercise-induced analgesia. College of Health Sciences Summer Research Program, Marquette University, Milwaukee, WI, 2006.
8. Weyer A, Haywood V, Hunter S, **Hoeger Bement M**. The effect of mental stress on healthy men and women. College of Health Sciences Summer Research Program, Marquette University, Milwaukee, WI, 2007.
9. Haywood V, **Hoeger Bement M**. The management of pain using isometric contractions. McNair Research Program (local), Marquette University, Milwaukee, WI, 2007.
10. Haywood V, **Hoeger Bement M**. The management of pain using isometric contractions. McNair Research Program (regional), Delavan, WI, 2007.
11. Sanchez M, **Hoeger Bement MKH**. The role of body composition in the differences in pain perception among men and women. McNair Research Program (local), Marquette University, Milwaukee, WI, 2008.
12. Hartley SE, Weyer AD, Hunter SK, **Bement MKH**. Pain perception of subjects with

- fibromyalgia following isometric contractions of various intensities and durations. College of Health Sciences Summer Research Program, Marquette University, Milwaukee, WI, 2008.
13. Quella AL, Drewek BT, Roe JT, Harkins A, Hunter SK, **Hoeger Bement** MK. The role of cortisol in the exercise response in fibromyalgia subjects. College of Health Sciences Summer Research Program, Marquette University, Milwaukee, WI, 2009.
 14. Drewek BT, Quella AL, Roe JT, Hunter SK, **Hoeger Bement** MK. The hypoalgesic effect of exercise using the first dorsal interosseous muscle in healthy men and women. College of Health Sciences Summer Research Program, Marquette University, Milwaukee, WI, 2009.
 15. Drewek BT, Stevens AA, Roe JT, Yoon T, Hunter SK, **Hoeger Bement** MK. Sex differences in pain relief after static and dynamic exercises: implications for rehabilitation. College of Health Sciences Summer Research Program, Marquette University, Milwaukee, WI, 2010.
 16. Bialzak J, Lemley K, Hunter SK, **Hoeger Bement** MK. What is the impact of sex and task specificity on exercise-induced hypoalgesia in older adults? College of Health Sciences Summer Research Program, Marquette University, Milwaukee, WI, 2011.
 17. Wolf J, Doyel R, Senefeld J, Hunter SK, **Hoeger Bement** MK. Does limb involvement influence exercise-induced hypoalgesia in young men and women? College of Health Sciences Summer Research Program, Marquette University, Milwaukee, WI, 2011.
 18. Coate M, Lemley K, Stolzman S, Wolf JK, Hunter SK, **Hoeger Bement** MK. Pain inhibits pain: the impact of age. College of Health Sciences Summer Research Program, Marquette University, Milwaukee, WI, 2012.
 19. Wolf JK, Lemley K, Stolzman S, Coate M, Hunter SK, **Hoeger Bement** MK. Pain relief with exercise: differences between men and women. College of Health Sciences Summer Research Program, Marquette University, Milwaukee, WI, 2012.
 20. Miskulin N, Senefeld J, Hunter SK, **Hoeger Bement** MK, Harkins A. Does APOE genetic variance predict declines in motor function with age? College of Health Sciences Summer Research Program, Marquette University, Milwaukee, WI, 2012.
 21. Senefeld J, Yoon T, **Hoeger Bement** MK, Hunter SK. Age differences in fatigue during dynamic contractions in arm and leg muscles. College of Health Sciences Summer Research Program, Marquette University, Milwaukee, WI, 2012.
 22. Coate M, Hoffmeister K, Lemley K, **Hoeger Bement** MK. Pain inhibits pain: the impact of age. Wisconsin Physical Therapy Association Spring Conference, Oconomowoc, WI, 2013.
 23. Hoffmeister K, Gresl A, Stolzman S, Lemley K, **Hoeger Bement** MK. Conditioned pain modulation in adolescents of different weight status. College of Health Sciences Summer Research Program, Marquette University, Milwaukee, WI, 2013.
 24. Gresl A, Hoffmeister K, Danduran M, Stolzman S, **Hoeger Bement** MK. Influence of maximal aerobic exercise on pain reports in normal weight and overweight adolescents. College of Health Sciences Summer Research Program, Marquette University, Milwaukee, WI, 2013.
 25. Vandenberg Z, Stolzman S, Danduran M, **Hoeger Bement** MK. No pain, no gain? Interaction between conditioned pain modulation and exercise induced hypoalgesia in adolescents. College of Health Sciences Summer Research Program, Marquette University, Milwaukee, WI, 2014.
 26. Hrdina E, Alsouhibani A, Stolzman S, **Hoeger Bement** M. Endogenous pain modulation and the 6 minute walk test. College of Health Sciences Summer Research Program, Marquette University, Milwaukee, WI, 2015.
 27. Alsouhibani A, Lemley K, **Hoeger Bement** M. Temporal summation following exhaustive exercise in healthy and chronic pain populations. American Physical Therapy Association Section on Research Retreat, Smithfield, RI, July 2015.
 28. Lemley K, **Hoeger Bement** M. Similarity of temporal summation in young and older adults using a constant pressure stimulus. American Physical Therapy Association Section on Research Retreat, Smithfield, RI, July 2015.
 29. Vaegter HB, **Hoeger Bement** M, Madsen AB, Fridriksson J, Dasa M, Graven-Nielsen T. The effect of isometric exercise on heat and pressure pain. American Physical Therapy Association Section on Research Retreat, Smithfield, RI, July 2015.

GRANT SUPPORT

1. Central Microscopy Research Facility Pilot Award (2001-2002)
University of Iowa
CREB and P-CREB immunoreactivity in the spinal cord in a chronic muscle pain model
\$500
Primary Investigator
2. National Research Service Award (2002-2004)
National Institutes of Health # F31NS043962
The role of the cAMP pathway in a chronic muscle pain model
Predoctoral Student
3. Faculty Development Award (2005)
College of Health Sciences
Marquette University
Effects of isometric contractions on pain perception in human subjects
\$2000
Primary Investigator
4. Way Klingler Summer Award (2005)
Marquette University
Isometric exercise intensity and pain reports in men and women
\$5000
Primary Investigator
5. Future Leaders in Pain Research Grant (2006-2007)
American Pain Society
Acute hormonal fluctuations as a mechanism for exercise-induced hypoalgesia in women
\$20,000
Primary Investigator
6. Curriculum Enhancement Grant (2006)
Marquette University
Cultural competence for healthcare professionals
\$3000
Co-Primary Investigator with M. Vanden Noven
7. Regular Research Grant (2007)
Marquette University
The influence of cognitive stress on fatiguing contractions
\$13,285
Co-Primary Investigator with S. Hunter
8. New Investigator Grant (2008-2009)
Arthritis Foundation
Exercise-induced pain relief in women with fibromyalgia
\$97,301
Primary Investigator
9. New Investigator Grant Renewal (2010-2011)
Arthritis Foundation
Exercise-induced pain relief in women with fibromyalgia
\$50,000
Primary Investigator
10. R15 Academic Research Enhancement Award Grant (2011-2015)
National Institutes of Health
Neuromuscular fatigue: aging and sex differences
\$300,000
Co-Investigator 5% effort (Primary Investigator: S. Hunter)
11. Clinical and Translational Research Grant (2013-2014)
National Institutes of Health (CTSA NIH Grant 8UL1TR00005)
National Center for Advancing Translational Sciences
Clinical and Translational Science Institute of Southeast Wisconsin

- Inflammatory Markers, Physical Fitness, and Pain in Children
\$49,861
Primary Investigator
12. Summer Faculty Fellowship and Regular Research Grant (2013)
Marquette University
Importance of Exercise Type and Mechanisms Responsible for Pain Relief in the
Management of Chronic Pain
\$9400
Primary Investigator
13. Women's Health Research Program (2015)
Medical College of Wisconsin
Neuromuscular Function in Women Postpartum
\$50,000
Co-Investigator (Primary Investigator: S. Hunter)
14. Hansen Foundation (2015-2016)
Project WISH (Wellness Initiative for Student Health)
\$85,000
Co-Primary Investigator

PRESENTATIONS

Local

1. Therapeutic Physical Agents. University of Iowa, Iowa City, IA, 2000-2003.
2. Chronic Pain: Mechanisms and Treatment. Faculty and Student Seminar, University of Iowa, Iowa City, IA, Spring 2004.
3. Exercise as a Therapeutic Intervention to Treat and Prevent Hyperalgesia. Animal Research Center, Marquette University, Milwaukee, WI, Fall 2004.
4. Chronic Muscle Pain. Integrative Neuroscience Research Center Seminar, Marquette University, Milwaukee, WI, Fall 2004.
5. Exercise-Induced Analgesia. College of Health Sciences Summer Research Program, Marquette University, Milwaukee, WI, Summer 2005.
6. Pain Perception Before and After Static Contractions. College of Health Sciences Summer Research Program, Marquette University, Milwaukee, WI, July 2006.
7. Physical Therapy Research. Children's Health Education Center, Marquette University, Milwaukee, WI, Summer 2006.
8. Exercise-Induced Analgesia with an Emphasis on Isometric Contractions. Clement J. Zablocki VA Medical Center, Milwaukee, WI, November 2007.
9. Research Networking and Mentoring Panel. Office of Research and Sponsored Programs, Marquette University, Milwaukee, WI, October 2007.
10. Physical Modalities. Physical Medicine and Rehabilitation Interns, Medical College of Wisconsin, Milwaukee, WI, August 2007.
11. Therapeutic Exercise. Physical Medicine and Rehabilitation Interns, Medical College of Wisconsin, Milwaukee, WI, August 2007.
12. Use of Static Contractions in Pain Management. College of Health Sciences Summer Research Program, Marquette University, Milwaukee, WI, June 2007.
13. Pain Review for the Orthopaedic Setting. Sports Medicine Center, Froedtert and Medical College of Wisconsin, Milwaukee, WI, May 2007.
14. Pain Perception after Isometric Exercise. Physical Medicine and Rehabilitation Research Grand Rounds, Medical College of Wisconsin, Milwaukee, WI, May 2007.
15. Lessons Learned from International Conferences in Pain. Meeting of the Minds, Physical Therapy Department, Marquette University, September 2008.
16. Research on the Role of Exercise Relative to Pain Abatement. Aurora Sports Medicine Institute, Milwaukee, WI, February 2008.
17. Research Development Program Panel. Fourth Annual Committee on Research Institute for Faculty, Marquette University, Milwaukee, WI, January 2008.

18. Understanding the Impact of Pain on Age. Peoples Memorial Hospital Auxiliary, Independence, IA, October 2009.
19. Exercise for Pain Management. College of Health Sciences Summer Research Program, Marquette University, Milwaukee, WI, June 2013.
20. Exercise as Medicine: Optimizing Health and Wellness. College of Health Sciences Marquette Presents Series, Milwaukee, WI, January 2014.
21. Translating Evidence-Based Exercise Research to the Clinic. Clement J. Zablocki VA Medical Center, Milwaukee, WI, October 2014.
22. Obesity: Myths, Facts, and What Everyone Should Know, College of Health Sciences Marquette Presents Series, Milwaukee, WI, February 2015.

Regional

1. Exercise and Pain Management. Continuing Education Course, Marquette University, Milwaukee, WI, July 2006.
2. Central Sensitization: A Commonly Misunderstood Pain Phenomenon. Continuing Education Course, Marquette University, Milwaukee, WI, July 2007.
3. Know Pain or No Gain. Keynote Speaker, Arthritis Foundation, Wisconsin Chapter, Milwaukee, WI, May 2008.
4. Evidence-Based Review on Exercise and Chronic Pain. Wisconsin Physical Therapy Association, Spring Conference, Waukesha, WI, April 2009.
5. Perioperative Pain Strategies Panel. Wisconsin Physical Therapy Association, Spring Conference, Waukesha, WI, April 2009.
6. Exercise-Induced Analgesia. Continuing Education Course, University of Iowa, Iowa City, IA, October 2012.
7. Pain Assessment Beyond the VAS. Continuing Education Course, University of Iowa, Iowa City, IA, October 2012.
8. Exercise-Induced Analgesia. Continuing Education Course, Wisconsin Physical Therapy Association, Spring Conference, April 2015.

National

1. Pain Management: What is the latest research? American Physical Therapy Association, Combined Sections Meeting, Nashville, TN, February 2004.
2. Low Back Pain: Updated Review on Mechanisms and Treatment. American Physical Therapy Association, Combined Sections Meeting, New Orleans, LA, February 2005.
3. The Role of Exercise in Pain Management. American Pain Society Annual Meeting, Washington DC, May 2007.
4. Acute Hormonal Fluctuations as a Mechanism for Exercise-Induced Hypoalgesia. American Pain Society Annual Meeting, Small Grants Committee, Tampa, FL, May 2008.
5. Clinical and Basic Science Data Blitz Moderator. American Pain Society Annual Meeting, San Diego, CA, May 2009.
6. Essential Pain Knowledge for Physical Therapists: Recommendations from the International Association for the Study of Pain. American Physical Therapy Association, Combined Sections Meeting, San Diego, CA, January 2013.
7. Stretch, Strengthen, Support: Exercise Rx for Chronic Pain. Pain Week, Las Vegas, NV, September 2013.
8. Physical Therapists: The New Gatekeepers? Pain Week, Las Vegas, NV, September 2013.
9. Exercise Is Medicine: Translating Science into Practice, American Pain Society Annual Meeting, Tampa, FL, May 2014.
10. Transitioning from Acute to Chronic Pain: Predictors and Prevention, American Physical Therapy Association, Combined Sections Meeting, Indianapolis, IN, February 2015.
11. Exercise-Induced Hypoalgesia. American Physical Therapy Association, Section on Research Retreat: Piecing Together the Pain Puzzle, Smithfield, RI, July 2015.

International

1. Neurobiology of Pain and Exercise. Pain and Movement Special Interest Group, International Association for the Study of Pain in conjunction with the Irish Pain Society, Dublin, Ireland, August 2008.
2. Nonpharmacological Treatments for Pain: Current Evidence. 12th World Congress on Pain, International Association for the Study of Pain, Glasgow, Scotland, August 2008.
3. Physical Activity and Chronic Pain: From Cells to Systems and Beyond. 15th World Congress on Pain, International Association for the Study of Pain, Sponsored by the Pain and Movement Special Interest Group, Buenos Aires, Argentina, October 2014.

TEACHING

Course Director

- Wound Management/ Integumentary Physical Therapy (PHTH 577, 3 credits) 2005
- Physical Technologies and Electrophysiology (PHTH 510, 4 credits) 2004-2012
- Pain Mechanisms/Treatment (PHTH 530, 2 credits) 2006- present
- Special Topics: Pain Elective (CTRH 6930, 2 credits) 2012- present
- CTRH Seminar (CTRH 6960, 0-3 credits) 2012- present
- Special Topics: Pain Research (CTRH 6931, 2 credits) 2015

Laboratory Supervisor

- Therapeutic Modalities for the Athletic Trainer (ATTR 150, 2 credits), 2005-2011

Major Responsibility

- Exercise Science Practicum I (EXSC 105, 2 credits) research practicum
Fall 2005: Margaret Feyen
Fall 2006: Brock Slinger and Morgan Schuman
Fall 2007: Sarah Hartley
Fall 2008: Dana Palminteri
Fall 2009: Allison Haslee
Fall 2010: Christopher Kedzie
Fall 2011: Natalie Fuerst
Fall 2012: Mara Bergee
Fall 2013: Meghan Bouman
Fall 2014: Nicole Ethier
- Exercise Science Practicum II (EXSC 186, 16 credits) research practicum
Spring 2006: Caitlin Carroll
Spring 2014: Jenna Speltz
- Independent Study- Physical Therapy (PHTH 495/7995)
Spring 2005: Michelle Nuebel
Spring 2007: Mary Beth Rudolph
Fall 2009: Morgan Schuman
Fall 2012: Jenna Wolf
Summer 2013: Mary Kate Townsend
Spring 2015: Zachary Vandenberg
- Independent Study- Interdisciplinary PhD (INPR 8995)
Fall 2009: Kathy Lemley
- Special Topics: Pediatric Pain Management (CTRH 6931)
Spring 2013: Stacy Stolzman
- Independent Study: Advanced Statistical Analysis (CTRH 6995)
Spring 2014: Stacy Stolzman
- College of Health Sciences - Summer Research Program
Summer 2005: Rebecca Rasiarmos and John DiCapo
Summer 2006: Audrey Lewis
Summer 2007: Andy Weyer

Summer 2008: Sarah Hartley
Summer 2009: Breanna Drewek and Amanda Quella
Summer 2010: Breanna Drewek
Summer 2011: Jill Bialzak and Jenna Wolf
Summer 2012: Jenna Wolf and Melissa Coate
Summer 2013: Katherine Hoffmeister and Alyssa Gresl
Summer 2014: Zachary Vandenberg
Summer 2015: Elizabeth Hrdina

- McNair Summer Research Program
Summer 2007: Veronica Haywood
Summer 2008: Manuel Sanchez

Guest Lecturer

- Physiology of Aging (GERT 202): 2005-2008
- Advanced Exercise Physiology (ExSc 192): 2005-2006
- Introduction to Research/PhD Education (PHTH 558): 2006
- Wound Management/ Integumentary (PHTH 577): 2006
- Therapeutic Modalities (ATR 150): 2007-2011
- Physiology of Activity (PHTH 518): 2008
- Introduction to Physical Therapy (PHTH 1001): 2010-present
- Neuroanatomy (PHTH 558): 2007-2011
- Applied and Rehabilitative Systems Physiology (CTRH 6001): 2011- present
- Neurophysiological Principles in Disease and Rehabilitation (CTRH 6201): 2012- present
- Measurements, Tests, and Techniques in Rehabilitation Science (CTRH 6020): 2013

SERVICE

Membership

- American Physical Therapy Association
- American Pain Society
- International Association for the Study of Pain

Panel Member, Core Curriculum on Pain for Schools of Physical Therapy, International Association for the Study of Pain (2010-2011)

Education Chair, Pain Management Special Interest Group, Orthopaedic Section, American Physical Therapy Association, 2004- 2015.

- Moderator and Presenter of 4-hour symposium, Low Back Pain: Updated Review on Mechanisms and Treatment, Combined Sections Meeting, New Orleans, LA, 2005.
- Moderator of 4-hour symposium, Chronic Pain Assessment and Management, Combined Sections Meeting, San Diego, CA, 2006.
- Moderator of 4-hour symposium, Headaches and the Cervical Spine, Combined Sections Meeting, Boston, MA, 2007.
- Moderator of 3-hour symposium, Physiology and Current Rehabilitative Management of Complex Regional Pain Syndrome, Combined Sections Meeting, Nashville, TN, 2008.
- Moderator of 2-hour symposium, Fear Avoidance Behavior: State of the Art Review, Combined Sections Meeting, Las Vegas, NV, 2009.
- Moderator of 3-hour symposium, Enhancing Clinical Practice through Psychosocial Perspectives in the Management of Low Back Pain, Combined Sections Meeting, New Orleans, LA, 2011.
- Moderator of 3-hour symposium, Chronic Pain: Myths, Measures and Management, Combined Sections Meeting, Chicago, IL, 2012.
- Moderator of 2-hour symposium, Taijiquan in Rehabilitation: Ancient Tradition, Modern Evidence, Combined Sections Meeting, San Diego, CA, 2013.

Moderator of Data Blitz Symposium, American Pain Society, Palm Springs, CA, 2015.

Vice-President, Pain Management Special Interest Group, Orthopaedic Section, American Physical Therapy Association, 2007-2015.

Invited author of Exercise in the Management of Musculoskeletal Pain Fact Sheet. International Association for the Study of Pain, Global Year Against Musculoskeletal Pain, <http://www.iasp-pain.org/GlobalYear/MSP>, 2009.

Faculty of 1000 Medicine Member: Rheumatology & Clinical Immunology, Musculoskeletal Pain & Analgesia Section, 2006-2011.

Grant Reviewer

- Fund for the Improvement of Postsecondary Education (2004)
- American Association for the Advancement of Science (2005)
- University of Kansas Medical Center Research Institute (2007)
- University of Wisconsin-Milwaukee, Stimulus for Enhancing Extramural Development Program (2015)

Manuscript Reviewer

- Journal of Pain (2004- present)
- American Journal of Physiology: Regulator, Integrative, and Comparative Physiology (2005)
- European Journal of Pain (2006- present)
- Pharmacological Research (2007)
- Muscle and Nerve (2008- present)
- Clinical Journal of Pain (2009- present)
- Applied Ergonomics (2009)
- Physical Therapy Journal (2010- present)
- Physiotherapy Theory and Practice (2011- present)
- Journal of Applied Physiology (2012- present)
- BMC Neuroscience (2013)
- Pain Journal (2013)
- Medicine & Science in Sports & Exercise (2013)
- Brain Research (2013)
- Clinical Rheumatology (2013)

Book Reviewer

- ACSM's Guidelines for Exercise Testing and Prescription (10th edition)

Abstract Reviewer

- Wisconsin Physical Therapy Association (2009)
- Clinical and Basic Science Data Blitz, American Pain Society (2009)
- Clinical and Basic Science Data Blitz, American Pain Society (2015)

Mentor to Astrida Kaugars for Pilot and Collaborative Grant (Family Influences on Type 1 Diabetes Management in Young Children) Clinical and Translational Science Institute of Southeast Wisconsin, National Institutes of Health (CTSA NIH Grant 8UL1TR000005)

Marquette University

Department of Physical Therapy, Student Advisor (2006-present)

Department of Physical Therapy, Faculty Search Committee Member (2006-2007, 2012)

Department of Speech Pathology and Audiology, Chair Search Committee Member (2013-2014)

Department of Clinical Laboratory Science, Faculty Search Committee Member (2014- present)

Vice Provost for Enrollment Management Search Committee, University Academic Senate Representative (2014)

University Academic Senate, College of Health Sciences Representative (2008, 2012-2015)

Faber Center for Ignatian Spirituality, Advisory Council Member (2007-2009)

Subcommittee on Equity, College of Health Sciences Representative (2010-2012)

National Research Service Award Panel, Office of Research and Sponsored Programs, Marquette University, October 2014

MS/PhD Committee Member

- Kevin Garrison, Ph.D. Committee Member, Department of Biomedical Engineering (2006)
- Kathy Lemley, Ph.D. Advisor, Interdisciplinary PhD Program (2008-2014)
- Alyson Cybulski, M.S. Committee Member, Clinical Translation Rehabilitation Health Sciences (2013)
- Stacy Stolzman, Ph.D. Advisor, Clinical Translation Rehabilitation Health Sciences (2011-2015). As a PhD candidate in my laboratory, Dr. Stolzman received the following funding:
 - Promotion of Doctoral Study Scholarship (I & II), American Physical Therapy Association
 - American Association of University Women Fellowship
 - Raynor Fellowship, Marquette University
- Rita Deering, Ph.D. Committee Member, Clinical Translation Rehabilitation Health Sciences (2014- present)
- Ali Alsouhibani, Ph.D. Advisor, Clinical Translation Rehabilitation Health Sciences (2014-present)
- Garrett Naze, Ph.D. External Committee Member, Rehabilitation Sciences, University of Kentucky (2015-present)

HONORS AND AWARDS

Maternal and Child Health Leadership Trainee (1996-1997)

Mary McMillan Doctoral Scholarship, American Physical Therapy Association (2000)

10th World Congress on Pain Travel Award (2002)

University of Iowa Physical Therapy Alumni Scholarship (2002)

University of Iowa Graduate Incentive Scholarship (2002-2003)

American Pain Society Young Investigator Travel Award (2003)

University of Iowa College of Medicine Recognition of Achievement Award (2002-2003)

Enhancing Rehabilitation Research in the South Grant Writing Workshop, National Institutes of Health (2004-2005)

Research Development Program, Marquette University (2007)

Edward W. Carroll Award for Teaching Excellence, Marquette University, College of Health Sciences (2012)