

## CURRICULUM VITAE

### **JANE A. KENT, Ph.D.**

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#### **I. EDUCATION**

California State University, Long Beach, B.A., Physical Education, 1980

California State University, Long Beach, M.A., Physical Education (Exercise Physiology), 1983

University of Southern California, Ph.D., Physical Education (Exercise Physiology), 1987

4/87-8/89: **Post-Doctoral Fellow**, Department Biochemistry & Biophysics, School of Medicine, University of Pennsylvania, Philadelphia. *Topic: In vivo* NMR spectroscopy studies of human skeletal muscle metabolism.

9/89-6/90: **Post-Doctoral Fellow**, Department of Biochemistry, University of Massachusetts, Amherst. *Topic: Single-cell fluorescence studies of intracellular calcium transients and nicotinic receptor desensitization.*

7/90-8/92: **Post-Doctoral Fellow**, Department of Radiology, University of California, San Francisco. *Topic: Metabolic studies of skeletal muscle fatigue in neuromuscular disease.*

#### **II. WORK EXPERIENCE**

1983-1984: **Instructor**, Freshman Writing Program, University of Southern California. Responsibilities: independently designed and taught writing classes required of all freshmen at USC

1982-1988: **Founder and Co-Director**, Sports Medicine & Science Program of the Olympic Yachting Committee, United States Yacht Racing Union. Responsibilities: organized and conducted clinics and training camps around the country and at the U.S. Olympic Training Center in Colorado Springs, wrote relevant informative articles and exercise prescriptions for elite-level sailors, coaches' education, referrals for special needs, development clinics for younger athletes, etc.

1984-1987: **Sport Scientist**, *America II* Challenge for the America's Cup. Directed all aspects of human performance for the 22-man crew. Responsibilities:

exercise training, sport psychology, injury prevention and care, nutrition & diet design, biomechanical testing and evaluation of equipment, and full-time crew member

- 9/92- 12/99: **Adjunct Assistant Professor**, Department of Radiology, University of California, San Francisco. Laboratory: Magnetic Resonance Unit, VA Medical Center. *Focus*: Metabolic and neurophysiologic studies of human skeletal muscle fatigue and deconditioning in health, aging and chronic disease
- 1/00- 1/03: **Associate Professor**, Department of Exercise Science and Organismic & Evolutionary Biology Program, University of Massachusetts, Amherst; Director, Muscle Physiology Lab. *Focus*: Human skeletal muscle function, fatigue, aging, gender, neuromuscular disorders
- 6/01- 12/14 **Visiting Research Scientist**, Department of Diagnostic Radiology (Magnetic Resonance Research Center), Yale University School of Medicine
- 2/03- present: **Professor**, Department of Kinesiology (Exercise Science), and *Organismic & Evolutionary Biology Program*, University of Massachusetts, Amherst
- 2003-2017: **Professor**, *Neuroscience & Behavior Program*, University of Massachusetts, Amherst
- 2014-present: **Faculty**, Center for Personalized Health Monitoring, *Institute of Applied Life Sciences*, UMass, Amherst
- 2015-2017: **Founding Co-Director**, Human Magnetic Resonance Center, *Institute of Applied Life Sciences*, UMass, Amherst
- 2017-present: **Chair**, Department of Kinesiology

### III. PROFESSIONAL AFFILIATIONS and AWARDS

- American College of Sports Medicine (since 1982)
- Fellow, American College of Sports Medicine (1994)
- American Physiological Society (since 1994)
- Gerontological Society of America (2001, 2011)
- International Society for Magnetic Resonance in Medicine (1987-89, 2003-)
- Elected Fellow, National Academy of Kinesiology (2007)
- Member, NIH Musculoskeletal Rehabilitation Sciences Study Section (2011-2015)
- Exceptional Merit Award, University of Massachusetts, Amherst (2012)

## IV. RESEARCH ACTIVITIES

### Publications

#### *Refereed Papers:*

- Chance, B, JS Leigh, BJ Clark, J Maris, **J Kent**, S Nioka, D Smith. Control of oxidative metabolism and oxygen delivery in human skeletal muscle: A steady-state analysis of the work/energy cost transfer function. *Proc. Natl. Acad. Sci., USA*, 82:8384-8388, 1985
- Chance, B, JS Leigh, **J Kent**, KK McCully. Metabolic control principles and <sup>31</sup>P NMR. *Fed. Proc.*, 45:2915-2920, 1986
- Chance, B, JS Leigh, **J Kent**, KK McCully, S Nioka, BJ Clark, J Maris, T Graham. Multiple controls of oxidative metabolism in living tissues as studied by phosphorus magnetic resonance. *Proc. Nat. Acad. Sci., USA*, 83:9458-9462, 1986
- Chance, B, S Nioka, **JA Kent**, KK McCully, M Fountain, R Greenfield, G Holtom. Time resolved spectroscopy of hemoglobin and myoglobin in resting and ischemic muscle. *Anal. Biochem.*, 174:698-707, 1988
- Chance, B, E Borer, A Evans, G Holtom, **JA Kent**, M Maris, KK McCully, J Northrop, M Shinkwin. Optical and NMR studies of hypoxia in human tissue and tumors. *Annals NY Acad. Sci.*, 551:1-16, 1989
- Hall, SJ, **JA Kent**, VR Dickinson. Comparative assessment of novel sailing trapeze harness designs. *Inter. J. Sport Biomech.*, 5(3):289-296, 1989
- Kent-Braun, JA**, KK McCully, B Chance. Metabolic effects of training in humans: a <sup>31</sup>P MRS study. *J. Appl. Physiol.*, 69(3):1165-1170, 1990
- Lyford, LK, **JA Kent-Braun**, EW Westhead. Substance P enhances desensitization of the nicotinic response in bovine chromaffin cells but enhances secretion upon removal. *J. Neurochem.*, 55:1960-1965, 1990
- Kent-Braun, JA**, LK Lyford, DJ Gross, EW Westhead. Effects of substance P on secretion of catecholamines from populations of bovine chromaffin cells and on calcium transients in individual cells. *Annals NY Acad. Sci.*, 632:241-248, 1991
- McCully, KK, BJ Clark, **JA Kent**, J Wilson, B Chance. Biochemical adaptations to training: implications for resisting muscle fatigue. *Can. J. Physiol. Pharmacol.*, 69:274-278, 1991
- McCully, KK, H Kakihira, K Vandenborne, **J Kent-Braun**. Noninvasive measurements of activity-induced changes in muscle metabolism. *J Biomech*, 24(S1):153-161, 1991
- Kent-Braun, JA**, RG Miller, MW Weiner. Phases of metabolism during progressive exercise to fatigue in human skeletal muscle. *J. Appl. Physiol.* 75(2):573-580, 1993
- Kent-Braun, JA**, KR Sharma, B Massie, MW Weiner, RG Miller. Central basis of muscle fatigue in chronic fatigue syndrome. *Neurology*, 43:125-131, 1993
- Kent-Braun, JA**, KR Sharma, MW Weiner, RG Miller. Effects of exercise on muscle activation and metabolism in multiple sclerosis. *Muscle Nerve* 17:1162-1169, 1994
- Kent-Braun, JA**, KR Sharma, RG Miller, MW Weiner. Postexercise phosphocreatine resynthesis is slowed in multiple sclerosis. *Muscle Nerve*, 17:835-841, 1994
- Sharma, KR, **JA Kent-Braun**, MA Mynhier, MW Weiner, RG Miller. Excessive muscular fatigue in the postpoliomyelitis syndrome. *Neurology*, 44(4):642-646, 1994
- Sharma, KR, **JA Kent-Braun**, M Mynhier, MW Weiner, RG Miller. Evidence of an abnormal intramuscular component of fatigue in multiple sclerosis. *Muscle Nerve* 18:1403-1411, 1995
- Sharma, KR, **JA Kent-Braun**, S Majumdar, Y Huang, M Mynhier, MW Weiner, RG Miller. Physiology of fatigue in amyotrophic lateral sclerosis. *Neurology* 45:733-740, 1995

- Kent-Braun, JA**, KR Sharma, MW Weiner, RG Miller. Effects of electrically stimulated exercise training on muscle function in multiple sclerosis. *J Neuro Rehab* 10:143-152, 1996
- Kent-Braun, JA** and R LeBlanc. Quantitation of central activation failure during maximal voluntary contractions in humans. *Muscle Nerve* 19:861-869, 1996
- Ng, AV, RG Miller, **JA Kent-Braun**. Central motor drive is increased during voluntary muscle contractions in multiple sclerosis. *Muscle Nerve* 20:1213-1218, 1997
- Kent-Braun, JA**, AV Ng, M Castro, GA Dudley, RG Miller. Strength, skeletal muscle composition and enzyme activity in multiple sclerosis. *J Appl Physiol* 83:1998-2004, 1997
- Ng, AV and **JA Kent-Braun**. Quantitation of lower physical activity in persons with multiple sclerosis. *Med Sci Sports Exer* 29:517-523, 1997
- Castro M, **JA Kent-Braun**, AV Ng, RG Miller, GA Dudley. Muscle fiber-type specific myofibrillar actomyosin Ca<sup>2+</sup> ATPase activity in multiple sclerosis. *Muscle Nerve* 21:547-549, 1998
- Kent-Braun, JA**, C Walker, MW Weiner, RG Miller. Functional significance of upper and lower motor neuron impairment in amyotrophic lateral sclerosis. *Muscle Nerve* 21:762-768, 1998
- Kent-Braun, JA**. Central and peripheral contributions to muscle fatigue during sustained maximal effort in humans. *Eur J Appl Physiol* 80:57-63, 1999
- Ng, AV and **JA Kent-Braun**. Slowed muscle contractile properties are not associated with a decreased EMG/force relationship in older humans. *J Gerontol Biol Sci* 54A:B452-B458, 1999
- Kent-Braun, JA** and AV Ng. Specific strength and voluntary muscle activation in young and elderly women and men. *J Appl Physiol* 87:22-29, 1999
- Kent-Braun, JA**, AV Ng, K Young. Skeletal muscle contractile and non-contractile components in young and older women and men. *J Appl Physiol* 88:662-668, 2000
- Ng, AV, HT Dao, RG Miller, DF Gelinas, **JA Kent-Braun**. Blunted pressor and intramuscular metabolic responses to voluntary isometric exercise in multiple sclerosis. *J Appl Physiol* 88:871-880, 2000
- Johansen, KL, GM Chertow, AV Ng, K Mulligan, S Carey, PY Schoenfeld, **JA Kent-Braun**. Physical activity levels in patients on hemodialysis and healthy sedentary controls. *Kidney International* 57:2564-2570, 2000
- Kent-Braun JA** and RG Miller. Central fatigue during isometric exercise in amyotrophic lateral sclerosis. *Muscle Nerve* 23:909-914, 2000
- Johansen KL, Painter P, **Kent-Braun JA**, Ng AV, Carey S, Da Silva M, Chertow GM. Validation of questionnaires to estimate physical activity and functioning in end-stage renal disease. *Kidney International* 59:1121-7, 2001
- Kent-Braun JA**, AV Ng, JW Doyle, TF Towse. Human skeletal muscle responses to fatigue vary with age and gender during fatigue due to incremental isometric exercise. *J Appl Physiol*, 93:1813-23, 2002
- Johansen KL, T Shubert, J Doyle, B Soher, G Sakkas, **JA Kent-Braun**. Muscle atrophy in patients receiving hemodialysis: effects on muscle strength, muscle quality, and physical function. *Kidney International*, 63:291-297, 2003
- Russ DW, **JA Kent-Braun**. Sex differences in human skeletal muscle fatigue are eliminated under ischemic conditions. *J Appl Physiol* 94:2412-2422, 2003
- Damon B, D Bartholomew, Z Ding, J Gore, **JA Kent-Braun**. Cluster analysis of muscle functional MRI data. *J Appl Physiol* 95:1287-96, 2003

- Lanza IR, TF Towse, GE Caldwell, DM Wigmore, **JA Kent-Braun**. Effects of age on human muscle torque, velocity and power in two muscle groups. *J Appl Physiol* 95:2361-2369, 2003
- Ng AV, Miller RG, Gelinas D, **JA Kent-Braun**. Functional relationships of central and peripheral muscle alterations in multiple sclerosis. *Muscle Nerve* 29:843-52, 2004
- Lanza IR, Russ DW, **Kent-Braun JA**. Age-related fatigue enhancement of resistance is evident during both isometric and dynamic tasks. *J Appl Physiol* 97:967-75, 2004
- Wigmore DM, BM Damon, DM Pober, **JA Kent-Braun**. MRI Measures of perfusion-related changes in human skeletal muscle during progressive contractions. *J Appl Physiol* 97:2385-94, 2004
- Russ DW, IR Lanza, D Rothman, **JA Kent-Braun**. Sex differences in glycolysis during brief, intense isometric contractions. *Muscle Nerve* 32:647-55, 2005
- Johansen KL, J Doyle, GK Sakkas, **JA Kent-Braun**. Neural and metabolic mechanisms of excessive muscle fatigue in maintenance hemodialysis patients. *Am J Physiol Regul Integr Comp Physiol* 289:R805-13, 2005
- Lanza IR, DE Befroy, **JA Kent-Braun**. Age-related changes in ATP-producing pathways in human skeletal muscle in vivo. *J Appl Physiol* 90:1736-44, 2005
- Wigmore DM, K Propert, **JA Kent-Braun**. Blood flow does not limit skeletal muscle force production during incremental isometric contractions. *Eur J Appl Physiol*. 96:370-8, 2006
- Sakkas GK, **JA Kent-Braun**, JW Doyle, T Shubert, P Gordon, KL Johansen. Effect of diabetes mellitus on muscle size and strength in patients receiving dialysis therapy. *Am J Kidney Dis* 47:862-9, 2006
- Lanza IR, DM Wigmore, DE Befroy, **JA Kent-Braun**. In vivo ATP production during free-flow and ischemic muscle contractions in humans. *J Physiol* 577(Pt 1): 353-67, 2006
- Damon BM, JL Hornberger, M Wadlington, DA Lansdown, **JA Kent-Braun**. Dual gradient-echo MRI of post-contraction changes in skeletal muscle blood volume and oxygenation. *Magn Res Med* 57:670-9, 2007
- Chung LH, DM Callahan, **JA Kent-Braun**. Age-related resistance to skeletal muscle fatigue is preserved during ischemia. *J Appl Physiol* 103:1628-35, 2007
- Lanza IR, RG Larsen, **JA Kent-Braun**. Effects of old age on skeletal muscle energetics during fatiguing contractions with and without blood flow. *J Physiol* 583(Pt 3):1093-105, 2007
- Russ DW, TF Towse, DM Wigmore, IR Lanza, **JA Kent-Braun**. Contrasting influences of age and sex on muscle fatigue. *Med Sci Exer Sport* 40:234-41, 2008
- Remelius JG, J Hamill, **J Kent-Braun**, REA Van Emmerik. Gait initiation in multiple sclerosis. *Motor Control* 12:93-108, 2008
- Wigmore DE Befroy, IR Lanza, **JA Kent-Braun**. Contraction frequency modulates muscle fatigue and intracellular oxygenation during incremental contractions in humans. *Appl Physiol Nutr Metab* 33:915-21, 2008
- Chung LH, JG Remelius, REA Van Emmerik, **JA Kent-Braun**. Leg power asymmetry and postural control in women with multiple sclerosis. *Med Sci Sports Exer* 40:1717-24, 2008
- Sakkas G, K Mulligan, M DaSilva, JW Doyle, H Khatami, T Schleich, **JA Kent-Braun**, M Schambelan. Creatine fails to augment the benefits from resistance training in patients with HIV infection: A randomized, double-blind, placebo-controlled study. *PLoS ONE* 4(2):e4605, 2009
- Callahan DM, Foulis SA, **Kent-Braun JA**. Age-related fatigue resistance in the knee extensor muscle is specific to contraction mode. *Muscle Nerve* 39(5):692-702, 2009

- Tevald MA, Lanza IR, Befroy DE, **Kent-Braun JA**. Intramyocellular oxygenation during ischemic muscle contractions in vivo. *Eur J Appl Physiol* 106:333–343, 2009
- Larsen RG, Callahan DM, Foulis SA, **Kent-Braun JA**. In vivo oxidative capacity varies with muscle and training status in young adults. *J Appl Physiol* 107(3):873-9, 2009
- Tevald MA, Foulis SA, Lanza IR, **Kent-Braun JA**. Lower energy cost of skeletal muscle contractions in older humans. *Am J Physiol Regul Integr Comp Physiol*. 298(3):R729-39, 2010
- Lanza IR, Tevald MA, Befroy DE, **Kent-Braun JA**. Intracellular energetics and critical PO<sub>2</sub> in resting ischemic human skeletal muscle in vivo. *Am J Physiol Regul Integr Comp Physiol* 299(5):R1415-22, 2010
- van Emmerik, REA, Remelius JG, Johnson MB, Chung LH, **Kent-Braun JA**. Postural control in women with multiple sclerosis: effects of task, vision and symptomatic fatigue. *Gait Posture* 32(4):608-14, 2010
- Christie A, Snook EM, **Kent-Braun JA**. Systematic review and meta-analysis of skeletal muscle fatigue in old age. *Med Sci Sports Exerc*. 43:568-77, 2011
- Sanchez OA, Copenhaver EA, Chance MA, Fowler MJ, Towse TF, **Kent-Braun JA**, Damon BM. Postmaximal contraction blood volume responses are blunted in obese and type 2 diabetic subjects in a muscle-specific manner. *Am J Physiol Heart Circ Physiol*. 301(2):H418-27, 2011
- Hasson CJ, **Kent-Braun JA**, Caldwell GE. Contractile and non-contractile tissue volume and distribution in ankle muscles of young and older adults. *J Biomech* 44(12):2299-306, 2011
- Callahan DM, **Kent-Braun JA**. Effect of old age on human skeletal muscle force-velocity and fatigue properties. *J Appl Physiol*. 111(5):1345-52, 2011
- Chang R, **Kent-Braun JA**, Hamill J. Use of MRI for volume estimation of tibialis posterior and plantar intrinsic foot muscles in healthy and chronic plantar fasciitis limbs. *Clin Biomech (Bristol, Avon)*. 27(5):500-5, 2012
- Larsen RG, Callahan DM, Foulis SA, **Kent-Braun JA**. Age-related changes in oxidative capacity differ between locomotory muscles and are associated with physical activity behavior. *Appl Physiol Nutr Metab*. 2012 Feb;37:88-99
- Remelius JG, Jones SL, House JD, Busa MA, Averill JL, Sugumaran K, **Kent-Braun JA**, Van Emmerik RE. Gait impairments in persons with multiple sclerosis across preferred and fixed walking speeds. *Arch Phys Med Rehabil*. 93:1637-42, 2012
- Larsen RG, Befroy DE, **Kent-Braun JA**. High-intensity interval training increases in vivo oxidative capacity with no effect on Pi->ATP rate in resting human muscle. *Am J Physiol Regul Integr Comp Physiol*. 304(5):R333-42, 2013
- Callahan DM, Umberger B, **Kent-Braun JA**. A computational model of torque generation: neural, contractile, metabolic and musculoskeletal components. *PLoSOne* 8(2):e56013, 2013
- Kent-Braun JA**, Callahan DM, Fay JL, Foulis SA, Buonaccorsi JP. Muscle weakness, fatigue, and torque variability: effects of age and mobility status. *Muscle Nerve* 49:209-17, 2014
- Larsen RG, Maynard L, **Kent JA**. High-intensity interval training alters ATP pathway flux during maximal muscle contractions in humans. *Acta Physiol* 211(1):147-60, 2014
- Christie AD, Tonson A, Larsen RG, DeBlois JP, **Kent JA**. Human skeletal muscle metabolic economy *in vivo*: effects of contraction intensity, age and mobility impairment. *Am J Physiol-Reg* 307(9):R1124-35, 2014
- Tevald MA, Foulis SA, **Kent JA**. Effect of age on in vivo oxidative capacity in two locomotory muscles of the leg. *Age (Dordr)* 36(5):9713, 2014

- Sasaki JE1, Hickey A, Staudenmayer J, John D, **Kent JA**, Freedson PS. Performance of activity classification algorithms in free-living older adults. *Med Sci Sports Exerc* 48(5):941-50, 2016
- Callahan DM, Umberger BR, **Kent JA**. Mechanisms of in vivo muscle fatigue in humans: Investigating age-related fatigue resistance with a computational model. *J Physiol.* 594(12): 3407-21, 2016
- Christie AD, Seery E, **Kent JA**. Physical activity, sleep quality, and self-reported fatigue across the adult lifespan. *Exp Geront* 77:7-11, 2016
- Chung LH, Angelo J, van Emmerik REA, **Kent JA**. Energy cost of walking, symptomatic fatigue and perceived exertion in persons with Multiple Sclerosis. *Gait Posture* 48:215-9, 2016
- Christie AD, Foulis SA, **Kent JA**. ATP cost of muscle contraction is associated with motor unit discharge rate in humans. *Neurosci Lett* 629:186-8, 2016
- Fitzgerald LF, Christie AD, **Kent JA**. Heterogeneous effects of old age on human muscle oxidative capacity *in Vivo*: A systematic review and meta-analysis. *Appl Physiol Nutr Metab* 41(11):1137-1145, 2016
- Foulis SA, Jones SL, van Emmerik RE, **Kent JA**. Post-fatigue recovery of power, postural control and physical function in older women. *PLoS One.* 2017 Sep 7;12(9):e0183483.

***Chapters, Reviews and Letters:***

- McCully, KK, JA Kent, B Chance. Evaluation of athletic performance using 31-P magnetic resonance spectroscopy. *Revista de Investigacion y Documentacion sobre las Ciencias de la Educacion Fisica y del Deporte Instituto de Ciencias de la Educacion Fisica y del Deporte.* Madrid, Spain, 4(8):71-92, 1988
- McCully, KK, **JA Kent**, B Chance. Application of 31P magnetic resonance spectroscopy to the study of athletic performance. *J. Sports Med. (New Zealand)*, 5:312-321, 1988
- McCully, KK, **JA Kent**, B. Chance. Muscle injury and exercise stress measured with 31-P magnetic resonance spectroscopy. *Inter. Cong. Muscle Energetics*, Alan Liss, Co. (R.J. Paul, K Yamada and G Elzinga, eds.), 1989
- Kent-Braun JA**, RG Miller, MW Weiner. Magnetic resonance spectroscopy studies of human muscle. DJ Sartoris, ed. *Radiologic Clinics of North America*, WB Saunders Co., 32(2):313-335, 1994
- Miller, RG, **Kent-Braun JA**, KR Sharma, MW Weiner. Mechanisms of human muscle fatigue: quantitating the contribution of metabolic factors and activation impairment. SC Gandevia, ed. *Fatigue*, Plenum Press, pp. 195-210, 1995
- Kent-Braun JA**, RG Miller, MW Weiner. Human skeletal muscle metabolism in health and disease: utility of magnetic resonance spectroscopy. JO Holloszy, ed. *Exercise and Sport Sciences Reviews*, Williams & Wilkins, 23:305-347, 1995
- Miller, RG, **Kent-Braun JA**, MW Weiner. Techniques for quantifying central and peripheral factors in fatigue. J Kimura and H Shibasaki, eds. *Recent Advances in Clinical Neurophysiology*, Elsevier, pp.708-710, 1996
- Kent-Braun, JA**. Noninvasive measures of central and peripheral activation in human muscle fatigue. *Muscle & Nerve*, Supplement5:S98-S101 1997
- Meyerhoff, DJ, **JA Kent-Braun**, C Greyson, MW Weiner. Magnetic resonance spectroscopy and spectroscopic imaging. CB Higgins, H Hricak, CA Helms, eds. *Magnetic Resonance Imaging of the Body*, 3rd ed. Lippincott-Raven Pubs, Philadelphia p. 153-174, 1997

- Kent-Braun JA.** Sensitivity of twitch interpolation: a reply [letter]. *Muscle Nerve* 20:708-709, 1997
- Ng AV, RG Miller, **JA Kent-Braun.** Blunted pressor and intramuscular metabolic responses to voluntary isometric exercise in multiple sclerosis: a reply [letter]. *J Appl Physiol* 89:2105-2106, 2000
- Hicks AL, **JA Kent-Braun,** DS Ditor. Sex differences in human skeletal muscle fatigue. *Exerc Sports Sci Rev* 2:109-112, 2001
- Ng AV, **JA Kent-Braun.** Basis of muscle fatigue in multiple sclerosis. *Multiple Sclerosis Quarterly Report*, 23:13-17, 2004
- Russ DW, **JA Kent-Braun.** Is skeletal muscle oxidative capacity decreased in old age? *Sports Medicine* 34:221-9, 2004
- Kent-Braun JA,** BM Damon, DM Wigmore, DM Pober. BOLD indirect versus ASL direct measurement of muscle perfusion: a reply [letter]. *J Appl Physiol*, 2005
- IR Lanza, **JA Kent-Braun.** ATP synthesis during ischemic muscle contractions. *Physiol News* 69:1-3, 2007
- Kent-Braun, JA.** Skeletal muscle fatigue in old age: Whose advantage? *Exer Sports Sci Rev* 37: 3-9, 2009 NIHMSID 117784
- Kent-Braun JA,** DM Callahan, SA Foulis, LH Chung. Muscle fatigue in elderly people. In: *Human Muscle Fatigue*, C Williams and S Ratel, eds. Routledge, Taylor & Francis, pp. 103-134, 2009
- Kent-Braun JA,** Fitts RH, Christie A. Skeletal muscle fatigue. *Compr Physiol* 2:997-1044, 2012
- Chung LH, **Kent-Braun JA.** Multiple Sclerosis, in *Clinical Exercise Physiology*, 3<sup>rd</sup> edition, Ehrman, Gordon, Cisich, Keteyian, eds. Human Kinetics Pub, pp. 511-24, 2013
- Kent JA,** Ørtenblad N, Hogan MC, Poole DC, Musch TI. No muscle is an island: Integrative perspectives on muscle fatigue. *Med Sci Sports Exer* 48(11):2281-2293, 2016
- Kent JA,** Fitzgerald LF. In vivo mitochondrial function in aging skeletal muscle: capacity, flux, and patterns of use. *J Appl Physiol* 121(4):996-1003, 2016
- Chung S, Nelson MD, Hamaoka T, Jacobs RA, Pearson J, Subudhi AW, Jenkins NT, Bartlett MF, Fitzgerald LF, Miehm JD, **Kent JA,** Lucero AA, Rowlands DS, Stoner L, McCully KK, Call J, Rodriguez-Miguelez P, Harris RA, Porcelli S, Rasica L, Marzorati M, Quaresima V, Ryan TE, Vernillo G, Millet GP, Malatesta D, Millet GY, Zuo L, Chuang CC. Commentaries on Viewpoint: Principles, insights, and potential pitfalls of the noninvasive determination of muscle oxidative capacity by near-infrared spectroscopy. *J Appl Physiol* 124(1):249-255, 2018

*For an updated listing of publications:*

[http://www.ncbi.nlm.nih.gov/sites/myncbi/1j\\_Ca5l1YeY5H/bibliography/47312573/public/?sort=date&direction=descending](http://www.ncbi.nlm.nih.gov/sites/myncbi/1j_Ca5l1YeY5H/bibliography/47312573/public/?sort=date&direction=descending)

## Grants Awarded

*Muscular Dystrophy Association Research Grant.* Muscle fatigue and exercise training in ALS. (RG Miller, PI) Period: 1/1/92-12/31/94. Direct Costs \$98,359. Kent-Braun, Co-investigator.



- National Multiple Sclerosis Society Research Grant.* Mechanisms of fatigue in multiple sclerosis. (RG Miller, PI) Period: 4/1/93-3/31/96. Direct Costs \$253,229. Kent-Braun, Co-investigator.
- Jimmie Heuga Center Research Grant.* Central motor drive in multiple sclerosis. (Kent-Braun, PI) Period: 09/01/94 - 08/30/96. Direct Costs \$75,440.
- California Pacific Medical Center Pilot Grant.* Muscle fatigue in aging. (Kent-Braun, PI) Period: 1/1/95-12/31/95. Direct costs: \$19,640.
- National Multiple Sclerosis Society Pilot Project Grant.* Cardiovascular autonomic function in MS. (Kent-Braun, PI) Period: 4/1/97 – 3/30/98. Direct costs: \$26,739.
- Muscular Dystrophy Association Research Grant.* Muscle activation and fatigue in amyotrophic lateral sclerosis. (Kent-Braun, PI) Period: 1/1/95-12/31/97. Direct costs: ~\$142,000.
- National Institutes of Health (NIA) R29 (FIRST) Award.* Skeletal muscle function in aging. (Kent-Braun, PI) Period: 9/1/95-8/31/00. Direct costs: \$349,202.
- National Multiple Sclerosis Society Research Grant.* Muscle fatigue and upper motor neuron function in MS. (Kent-Braun, PI) Period: 10/1/96-3/31/00. Direct costs: \$249,781.
- National Institutes of Health (NIA) R21 Award.* Sarcopenia and estrogen replacement therapy in post-menopausal women. (Kent-Braun, PI) Period: 4/1/99- 5/31/02. Direct costs: \$198,230.
- National Institutes of Health (NIDDK) R01 Award.* Anabolic steroids and exercise in dialysis patients (K. Johansen, PI). Period: 8/1/99 - 7/31/03. Direct costs: \$871,784. Kent-Braun, Co-investigator.
- National Institutes of Health (CAM) R01 Award.* Ergogenic effects of creatine supplementation in HIV-associated wasting. (M. Schambelan, PI). Period: 7/1/00 - 6/30/04. Direct costs: \$594,187. Kent-Braun, Co-investigator.
- National Multiple Sclerosis Society Research Grant.* Mechanisms of fatigue in multiple sclerosis. (AV Ng, PI). Period: 10/1/00-9/30/03. Direct costs: \$287,250. Kent-Braun, Co-investigator.
- University of Massachusetts Faculty Research Grant.* Mechanisms of human muscle fatigue in older adults. (Kent-Braun, PI). Period: 12/1/00-11/30/01. Direct costs: \$14,574.
- National Institutes of Health (NIA) R01 Award.* Skeletal muscle fatigue in older adults. (Kent-Braun, PI). Period: 9/30/02-12/31/13. Direct costs: \$2,400,000.
- National Multiple Sclerosis Society Pilot Project Grant.* Postural stability and fatigue in multiple sclerosis. (Van Emmerik, PI). Period: 6/1/03-5/31/04. Direct costs: \$39,906
- National Institutes of Health (NIA) K02 Award.* Mechanisms of skeletal muscle fatigue in aging adults. (Kent-Braun, PI). Period: 7/01/04-5/31/11. Direct costs: \$572,130
- National Institutes of Health (NIA) R03 Award.* Muscular properties and balance control in older adults (Caldwell, PI; Kent-Braun, consultant). Period: 7/1/06-6/30/08. Direct costs: ~\$100,000
- National Institutes of Health (NIDDK) R21 Award.* MRI detection of skeletal muscle microvascular dysfunction (Damon, PI; Kent-Braun, consultant). Period: 12/1/06-11/30/08. Direct costs: ~\$275,000
- National Institutes of Health (NCI) U01 Award.* Development of an integrated measurement system to assess physical activity (Freedson, PI; Kent-Braun, co-investigator) Period: 7/1/07-7/30/13. Direct costs: \$1,934,941
- National Multiple Sclerosis Society Research Grant Award.* Dynamic balance control and fatigue in MS (van Emmerik, PI; Kent-Braun, co-investigator). Period: 10/1/07-9/30/12. Direct costs: ~\$474,500

- University of Massachusetts, Amherst MRI Pilot Research Grant.* Skeletal Muscle Perfusion by Functional MRI: Application to Aging. Period: 3/1/08-2/28/09 Direct costs: \$15,000
- University of Massachusetts, Amherst Faculty Research Grant.* A Model for Simulating Skeletal Muscle Energy Consumption. Umberger, PI; Kent-Braun, Co-investigator Period: 7/1/08-6/30/09 Direct costs: \$30,000
- University of Massachusetts, Amherst MRI Pilot Research Grant.* Low Testosterone: Impact On Skeletal Muscle and Visceral Fat in Type 2 Diabetes. Chipkin, MD, PI; Kent-Braun, Co-investigator, Period: 8/1/08-7/31/09 Direct costs: \$14,980
- School of Public Health & Health Sciences, Research Enhancement Opportunity Award.* Fatigue and the metabolic cost of activity in young and older adults. JA Kent, PI. Period: 4/1/14-3/30/16 Direct costs: \$10,000
- National Multiple Sclerosis Society Pilot Project Grant.* Foot Tap Speed: A Biomarker for Mobility in MS? Kent, PI. Period: 4/1/15-3/31/17 Direct costs: \$43,421
- Department of Defense, Multiple Sclerosis Research Program.* The MS Neuromotor Test: A Non-Ambulatory Measure of Sensorimotor Function to Identify and Track Progressive MS. van Emmerik, PI; Kent, Co-investigator. Period: 10/1/16-9/30/19. Total costs: \$863,000
- National Institutes of Health, NIA R01 AG-047245.* Sex-Specific Adaptation to Different Resistance Exercise Programs in Older Adults. Miller (PI), Kent, Chipkin, Staudenmayer (Co-Is). Period: 9/1/2017-3/31/22 Total costs: \$2,523,927
- UMass Institute of Applied Lifes Sciences. Human Magnetic Resonance Center Pilot Grant.* Mechanical Disruption of Force Transmission by Adipose Tissue in Human Skeletal Muscle. Kent (PI), Miller (Co-I) Period: 3/13/17-3/31/18 Total costs: \$7,500
- UMass Institute of Applied Lifes Sciences; Human Magnetic Resonance Center Pilot Grant.* Energetic Basis of Muscle Fatigue in Aging. Kent (PI), Miller (Co-I). Period: 3/6/17-12/31/18 Total costs: \$7,444
- UMass Institute of Applied Lifes Sciences; Human Magnetic Resonance Center Pilot Grant.* Skeletal muscle composition in healthy older men and women. Miller (PI), Kent (Co-I) Period: 3/19/17-3/31/18 Total costs: \$7,500
- American College of Sports Medicine Foundation, Doctoral Research Grant.* Mechanisms Underlying Age-Related Differences in Muscle Fatigue. Kent (PI), Fitzgerald (Co-I). Period: 6/1/17-10/31/18. Total costs: \$4,950
- American College of Sports Medicine Foundation, Doctoral Research Grant.* An In Vivo Respirometry Protocol to Detect Mitochondrial Uncoupling During High-Intensity Contractions. Kent (PI), Bartlett (Co-I). Period: 7/1/18-6/30/19. Total costs: \$5,000
- National Institutes of Health, NIAMS R21 AR073511-01A1.* Mechanical Disruption of Force Transmission by Adipose Tissue in Human Skeletal Muscle. Kent (PI), Miller, Chipkin, Buonaccorsi (Co-Is). Period: 8/1/18-7/30/20 Total costs: \$374,188

### **Invited Lectures**

- Magnetic Resonance Spectroscopic Studies of Muscle Metabolism in Multiple Sclerosis.* Center for Research in Disease Prevention, Stanford University, November 1992 (seminar)
- Exercise in Non-Controllable Diseases.* University of California Berkeley Extension, October 1992 (lecture)
- Deconditioning and Exercise in Special Populations.* California State University, Hayward Extension, October 1993 (lecture)

- Exercise Science and the Study of Multiple Sclerosis.* American College of Sports Medicine Annual Meeting, Seattle, June 1993 (colloquium)
- Exercise for People with Neurologic Diseases/Disorders.* Western Athletic Clubs, American College of Sports Medicine Continuing Education Program, San Francisco, May 1993 (symposium)
- Localizing the Source of Muscle Fatigue in Clinical Populations.* Society of Magnetic Resonance Workshop, Liverpool, England, June 1994 (symposium)
- Magnetic Resonance Spectroscopy: Applications in Exercise Physiology.* Southwest ACSM Meeting, San Deigo, November, 1995 (tutorial)
- Human Skeletal Muscle Metabolism: Investigations Using Magnetic Resonance Spectroscopy.* Department of Kinesiology, University of Colorado at Boulder, October 1995 (seminar)
- Noninvasive Measures of Central and Peripheral Activation During Muscle Fatigue.* National Institute on Aging Workshop, Bethesda MD. July, 1996 (presentation).
- Skeletal Muscle Function in Aging.* Department of Human Biodynamics, University of California at Berkeley. April, 1996 (seminar)
- Muscle Function in Chronic Disease.* Department of Kinesiology, San Francisco State University, October 1997 (seminar)
- Human Skeletal Muscle Function.* Exercise Science Department, Oregon State University. May, 1997 (seminar)
- 31-Phosphorus Magnetic Resonance Spectroscopy Studies of Muscle Metabolism and Fatigue: Integration with Other Methodologies.* American College of Sports Medicine National Meeting, Denver. May 1997 (symposium)
- Muscle Function in People with Multiple Sclerosis.* American College of Sports Medicine National Meeting, Denver. May 1997 (colloquium)
- Is It Fat or Is It Muscle, and Why do We Care?* Magnetic Resonance Unit, University of California, San Francisco. May, 1998 (seminar)
- Human Skeletal Muscle Function in Aging and Chronic Disease.* Blood Flow Group, University of California, San Francisco & Berkeley, June 1998 (presentation)
- Magnetic Resonance Spectroscopy: Applications to Exercise Science and Sports Medicine.* Southwest Chapter Meeting, American College of Sports Medicine, Las Vegas, November 1998 (symposium)
- Evaluation of Human Skeletal Muscle Function: Conditions of Disuse.* Michels Forum, American Physical Therapy Association, Combined Sections Meeting, Seattle, February 1999 (symposium)
- Peripheral Contributions to Motor Fatigue in Disorders of the Central Nervous System.* Second International Congress of Neurological Rehabilitation, Toronto, Canada, April 1999 (symposium)
- Human Skeletal Muscle Function: Activation, Metabolism and Fatigue.* School of Kinesiology, University of Western Ontario, London, Ontario, Canada, April 1999 (seminar)
- Neuromuscular Disorders and Fatigue.* American College of Sports Medicine National Meeting, Seattle, June 1999 (symposium)
- Skeletal Muscle Function and Gender: Women and Men Might Be Different!* American College of Sports Medicine National Meeting, Seattle, June 1999 (mini-symposium)
- Strategic Health Initiatives: Opening the Doors to the College's Programmatic Priorities.* American College of Sports Medicine National Meeting, Seattle, June 1999 (colloquium)

- Noninvasive Measurement of Human Skeletal Muscle Function.* Department of Exercise Science, University of Massachusetts, Amherst, February 2000 (seminar)
- Studies of Muscle Energetics and Aging Using MRI Spectroscopy.* National Institute on Aging, Health ABC Project, Bethesda, March 2000 (symposium)
- Mechanisms of Human Skeletal Muscle Fatigue.* Sargent College of Health and Rehabilitation Sciences, Boston University, March 2000 (lecture)
- Implications of Disuse in Neuromuscular Disorders.* American College Sports Medicine National Meeting, Indianapolis, June 2000 (symposium)
- Skeletal Muscle Function: Influence of Age and Gender.* European College of Sport Science Annual Meeting, Jyväskylä Finland, July 2000 (symposium)
- Noninvasive Measures of Human Skeletal Muscle Function.* New England Chapter Meeting, American College of Sports Medicine, Providence, November 2000 (tutorial)
- Mechanisms of Muscle Fatigue in Aging Men and Women.* Department of Diagnostic Radiology, Yale University School of Medicine, November 2000 (seminar)
- Human Skeletal Muscle Function: Effects of Age & Gender.* Neuroscience and Behavior Program, University of Massachusetts, Amherst. November 2000 (seminar)
- Mechanisms of Human skeletal muscle fatigue: do age or gender play a role?* Department of Health Sciences, Boston University. March 2002 (lecture)
- Age & Sex: Effects on the Fatigability of Muscular Contractions.* American College of Sports Medicine National Meeting, St. Louis, May 2002 (symposium)
- Do the Mechanisms of Fatigue Vary With Age and Gender?* 2<sup>nd</sup> Annual Muscle Meeting, Amherst MA, June 20-21, 2002 (seminar)
- The Mechanisms of Fatigue in Young and Older Men and Women.* John B. Pierce Foundation, New Haven CT, February 2003 (seminar)
- Mechanisms of skeletal muscle fatigue: do age and sex matter?* Magnetic Resonance Research Center, Yale University School of Medicine, February 2003 (seminar)
- Mechanisms of Muscle Fatigue: Men and Women May be Different!* Department of Biological Sciences, Smith College, October 2003 (seminar)
- Integrative Approaches to the Study of Skeletal Muscle Fatigue.* Bio-TAP Program, Biology Department, University of Massachusetts Amherst, October 2003 (colloquium)
- Old Age and Skeletal Muscle Fatigue: A Relatively Optimistic View.* Research Symposium, Physical Therapy Department and Exercise Science Program, Marquette University, April 2004 (seminar)
- Age-Related Changes in Human Skeletal Muscle Fatigue.* American College of Sports Medicine, Indianapolis, June 2004 (symposium)
- Skeletal Muscle Fatigue Resistance in Old Age: Neural and Metabolic Factors.* Exercise Science Department, Syracuse University, September 2004 (seminar)
- Novel Approaches to Rehabilitation Research in MS: Application of Chaos Theory.* Workshop on Rehabilitation Research in Multiple Sclerosis, New York NY, May 2005
- In Vivo Magnetic Resonance: Techniques and Applications.* American College of Sports Medicine, Indianapolis, June 2005 (symposium)
- Human Skeletal Muscle Function: What Changes as We Grow Old?* University of Massachusetts Retired Faculty Club, September 2005
- Skeletal Muscle Fatigue in Older Adults.* Workshop on Human Muscle Function In Vivo, Nashville TN, October 2005

- Human Skeletal Muscle Energetics in Vivo*. New England ACSM, Providence RI, Nov. 2005 (symposium)
- Age-Related Alterations in Skeletal Muscle Energetics and Fatigue*. Mayo Clinic, Rochester MN, April 2006 (seminar)
- Muscle Fatigue: A Paradox in Aging Skeletal Muscle?* Prince of Wales Research Institute, University of New South Wales, Sydney Australia, March 2007 (seminar)
- Neuromuscular Function: Relevance to Unexplained Fatigue?* National Institute on Aging Exploratory Workshop on Unexplained Fatigue in the Elderly, Bethesda MD, June 2007 (invited talk)
- Skeletal Muscle Fatigue in Old Age: Consensus and Controversy*. American College of Sports Medicine Annual Meeting, Indianapolis, June 2008 (symposium)
- Effects of Old Age on Human Skeletal Muscle Fatigue*. American College of Sports Medicine Annual Meeting, Indianapolis, June 2008 (symposium)
- Neural and Muscular Factors in Fatigue of Older Adults: Role of Energetics*. American Gerontological Society/National Institute on Aging Conference: *Idiopathic Fatigue of Aging*, September 2008 (invited talk)
- Biomarkers of Human Skeletal Muscle Health*. Adult Skeletal Muscle Symposium, University of Kentucky, October 2008 (invited talk)
- Skeletal Muscle Physiology In Vivo: Aging Comes of Age!* President's Lecture, American College of Sports Medicine Annual Meeting, Seattle 2009 (invited talk)
- Skeletal Muscle Bioenergetics and Fatigue in the Elderly: Is it All About Physical Activity Level?* Geriatric Grand Rounds, University of Colorado School of Medicine, Denver CO. February 2010 (invited talk)
- Skeletal Muscle Energetics in Vivo: Interactions Between Age and Activity*. Department of Health & Exercise Science. Colorado State University, Ft. Collins CO. February 2010 (invited talk)
- Workshop on Exercise-Drug Synergy: Neuroprotection and Neural Plasticity in HD*. Cure Huntingtons Disease Initiative February 2011 (invited participant)
- Muscle Function and Fatigue in Chronic Fatigue Syndrome. NIH State of Knowledge Workshop: Myalgic Encephalomyelitis/Chronic Fatigue Syndrome Research, April 2011 (invited talk)
- Bioenergetic Basis of Muscle Fatigue: Insights About Aging*. Department of Human Physiology, University of Oregon, February 2012 (seminar)
- Might Foot Tap Speed Be Useful in Predicting Mobility Impairment?* Research Institute, CPMC, San Francisco. November 2012 (invited talk)
- Skeletal Muscle Bioenergetics and Fatigue in Older Adults: Role of Physical Activity?* McLean Hospital, Harvard University. January 2013 (invited talk)
- Muscle Bioenergetics and Fatigue in Aging*. Institute on Aging, University of Florida. November 2013 (invited talk)
- Locomotor Muscle Bioenergetics in Vivo: Impact of Aging?* Center for Exercise Medicine, University of Alabama, Birmingham. March 2014 (invited talk)
- Skeletal Muscle Bioenergetics, Fatigue and Function in Older Adults*. University of Vermont School of Medicine, March 2014 (invited talk)
- Single Muscle Metabolic Economy and Aging*. American College of Sports Medicine Annual Meeting, Orlando FL, June 2014 (symposium)
- In Vivo Bioenergetics of Aging Skeletal Muscle in Humans*. Experimental Biology, Boston MA, April 2015 (symposium)

- Using Fatigue to Probe the Integration of Physiological Systems in Vivo.* World Congress on the Basic Science of Exercise Fatigue, American College of Sports Medicine Annual Meeting, San Diego CA, May 2015 (symposium)
- Use of MRS to Measure Mitochondrial Function in Vivo.* 9<sup>th</sup> Mitochondrial Physiology School, Greenville NC, August 2015 (featured speaker)
- Muscle Function and Its Consequences in Aging Adults.* Distinguished Speaker Tour, Texas Chapter-ACSM, Lamar University, Beaumont TX, October 2015 (seminar)
- In Vivo Muscle Bioenergetics.* Distinguished Speaker Tour, Texas Chapter-ACSM, Texas A&M University, College Station TX, October 2015
- Muscle Function and its Consequences in Aging Adults.* Distinguished Speaker Tour, Texas Chapter-ACSM, Texas Christian University, Ft. Worth TX, October 2015 (seminar)
- Skeletal Muscle Fatigue.* Distinguished Speaker Tour, Texas Chapter-ACSM, Texas A&M University, Corpus Christi Tx, October 2015 (seminar)
- Muscle Physiology.* BioTap Program, University of Massachusetts Amherst, December 2015 (invited speaker)
- Use of Magnetic Resonance Spectroscopy to Measure Mitochondrial Function in Vivo.* Kinesiology Department Graduate Research Seminar, December 2015
- Muscle Fatigue and Fatigability in Aging and Chronic Disease.* UMass Amherst School of Nursing, November 2016 (seminar)
- Mitochondrial and Energetic Function in Vivo.* National Institute on Aging Predictors Workshop, December 2016 (invited talk)
- In Vivo Skeletal Muscle Bioenergetics and Fatigue.* Advances in Skeletal Muscle Biology in Health and Disease Conference, Myology Institute, University of Florida, March 2017 (invited talk)
- Muscle Fatigue, Bioenergetics and Mobility in Older Adults.* National Institute on Aging, Baltimore MD, April 2017 (seminar)
- Integrative Studies of Muscle Function and Energetics: Putting the “Motor” in Motor Control.* National Academy of Kinesiology Annual Conference. Washington DC, September 2017 (invited talk)
- Skeletal Muscle Performance in Older Adults: There’s Good News, Too!* New England American College of Sports Medicine Annual Conference. Providence RI, November 2018

### **Training of Post-Doctoral Fellows**

- Alexander Ng, Ph.D., 1996-1999, University of California, San Francisco. *Current position-* Associate Professor, Exercise Science Program, Physical Therapy Department, Marquette University, Milwaukee WI
- David Russ, P.T., Ph.D, 2001-2003, University of Massachusetts, Amherst. *Current position-* Associate Professor, Department of Physical Therapy, Ohio University, Athens OH
- Michael Tevald, P.T., Ph.D, 2005-2009, University of Massachusetts, Amherst. *Current position-* Associate Professor, Physical Therapy Department, Arcadia University, Philadelphia PA
- Anita Christie, Ph.D., University of Massachusetts, Amherst, 2009- 2011. *Current position-* Assistant Professor, School of Kinesiology, University of Western Ontario, Canada

- Anne Tonson, PhD, University of Massachusetts, Amherst, 2011- 2013. *Current position- Research Scientist, CRMBM, University of Marseille, France*

## V. TEACHING ACTIVITIES

### Teaching Pedagogy

- University of Massachusetts Center for Teaching Workshop; *Technology for Change*, April 2000
- University of Massachusetts Center for Teaching Workshop; *Innovation in the Classroom*, April 2000
- University of Massachusetts Center for Teaching Workshop; *Promoting Civility in Large Classrooms*, March 2001
- Microsoft IMPACT Fellow, University of Massachusetts Amherst, 2011-2012; *Blended Learning Fellowship*

### Courses Taught

#### Undergraduate Courses

- *Human Physiology*; Exercise Science 205 (formerly 297B), course coordinator and team teacher, each semester through Spring 2004
- *Junior Year Writing*; Exercise Science 300, Spring 2002
- *Exercise Physiology*; Kinesiology 470; on-going
- *History of the Olympics*; FFYS, Fall 2015
- *Scientific Mentoring in Physiology*; KIN 397E, Spring 2016

#### Graduate Courses

- *Graduate Seminar*; KIN 891 (all semesters)
- *Physiology Seminar*; Exercise Science 651, course coordinator, Fall 2001 & Spring 2002
- *Mechanisms of Skeletal Muscle Fatigue*; Exercise Science 797B, Fall 2002
- *Physiology Seminar*, Exercise Science 697J, Spring 2003
- *Muscle Bioenergetics*, Exercise Science 697J, Spring 2004
- *Oxygen Handling in Skeletal Muscle*, Exercise Science 697O, Spring 2005
- *Doctoral Qualifying Exam Seminar*, Kinesiology 696, coordinator Spring 2006
- *Graduate Seminar*, Kinesiology 891; coordinator, Fall 2007, Spring 2008, Spring 2009
- *Skeletal Muscle Physiology*, Kinesiology 697G, Fall 2010,
- *Skeletal Muscle Physiology*, Kinesiology 597K, Spring 2013
- *Bioenergetics and Fatigue in Aging*, Kinesiology 797J, Fall 2013
- *Responsible Conduct of Research*, Kinesiology 697RC
- *Introduction to Research in Human Movement*, KIN 600
- *Muscle Biochemistry*, KIN 697Z
- *Concepts & Lab Methods in Muscle Physiology*, KIN 697MP

## Training of Students

### *Graduate Students: Primary Advisor and Thesis or Dissertation Committee Chair* (\* indicates Chair of Doctoral Comprehensive Examination)

- Danielle (Bartholomew) Wigmore,\* MS/PhD (2000-2006)
- Ian Lanza,\* MS/PhD (2000- 2007)
- L. Marie Walsh, MS (2002-2004)
- Niki Rybko, MS (2002-2003)
- Linda Chung,\* MS/PhD (2003- 2010)
- Damien Callahan,\* MS/PhD (2004- 2011)
- Ryan Larsen,\* PhD (2005- 2011)
- Stephen Foulis,\* MS/PhD (2005-2013)
- Jacob Deblois, MS (2010- 2014)
- Jessica Fay, MS (2011-2014)
- Erica Hartman (2013-2015)
- Benjamin Hoffmann (2013-2015)
- Liam Fitzgerald,\* (2014-present)
- Miles Bartlett\* (2015-present)
- Julia Miehm (2016-present)
- Joseph Gordon (2017-present)
- Christopher Hayden (2018-present)

### *Graduate Students: Committee Member*

- James Loehr, Master's Research Project, 2000
- Abigail Watras, Master's Research Project, 2000
- Joohyung Lee, Doctoral Comprehensive Exams Committee, 2001
- Amy Howell, Master's Thesis, 2002
- David Rice, Master's Research Project, 2002
- Monica Hubal, 2002, Doctoral Comprehensive Exams Committee
- Katherine Eck, Master's Thesis, 2002-2003
- Scott Rubinstein, Master's Thesis, 2002-2003
- Monica Hubal, 2003-2006, Doctoral Dissertation Committee
- Jebb Remelius, Master's Project, 2004-2005
- Anita Christie, 2005, Doctoral Comprehensive Exams Committee
- Brooke Stephens, 2006, Doctoral Comprehensive Exams Committee
- Ryan Chang, 2007- 2009, Doctoral Dissertation Committee
- Jebb Remelius, Doctoral Comprehensive Exam Committee, 2008
- Alexis Gidley, Doctoral Comprehensive Exam Committee, 2009
- Jebb Remelius, Doctoral Dissertation Committee, 2009
- Jeffer Sazaki, Doctoral Comprehensive Exam Committee, 2011
- Andrea Morand, Master's Thesis Committee, 2011-2012
- Juli (Averill) Eve, Master's Committee, 2011-2013
- Michael Busa, Doctoral Comprehensive Exam Committee, 2012
- Jeffer Sazaki, Doctoral Dissertation Committee, 2012-2013



- Scott Ducharme, Doctoral Comprehensive Exam Committee, 2014
- Jocelyn Hafer, Doctoral Comprehensive Exam Committee, 2015
- Thomas Longyear, Doctoral Comprehensive Exam Committee, 2015
- Alexis Gidley, Doctoral Dissertation Committee, 2010-2015
- Jocelyn Hafer, Doctoral Dissertation Committee, 2015-present
- Ryan Wedge, Doctoral Comprehensive Exam Committee, 2015
- Juilanna Averill, Doctoral Comprehensive Exam Committee, 2015
- Scott Ducharme, Dissertation Committee, 2015-present
- Nathan Smith, Master's Thesis Committee, 2013-2016
- Youssef Jabor, Master's Thesis Committee, Dept. Mechanical Engineering, 2016-2018
- Corienne Serviente, Doctoral Dissertation Committee, 2017- 2018
- Aurora Foster, Master's Thesis Committee, 2017-present
- Erica Casto, Doctoral Comprehensive Exam Committee, 2018

#### *Undergraduate Honors Theses*

- Rebecca Bell (2001-2002, committee member)
- Kristyn Kneeland (2001-2002, committee member)
- L. Marie Walsh (2001-2002, chair)
- Keith Propert, Biology (2003-2004, chair)
- Stephen Foulis, Biology (2004-2005, chair)
- Jillian Angelo, Kinesiology (2008-2009, chair)
- Emily Seery (2009- 2011, chair)
- Christina Machaby (2009- 2011, committee member)
- Jessica Fay (2010- 2011, chair)
- Teresa O'Brien (2010- 2011, chair)
- Stephen McLean (2010- 2011, committee member)
- Amy Desmond (2013- 2014, chair)
- Jugert Bango (2014-2015, chair)
- Weiixen Fam (2015-2016, chair)
- Ellen Chow (2016-2017, chair)
- Margaret Ryan (2016-2017, chair)
- Jessica Benoit (2017-2018, chair)

#### *Undergraduate Independent Studies Students*

- Colleen Lawson, Spring 2001
- L. Marie Walsh, Spring 2001
- Rebecca Bell, Spring 2001
- Sabrina Macchiaroli, Fall 2001
- Aidan Howley, Spring 2002
- Elizabeth Gallagher, Spring 2002
- Cody Milne, Spring 2003
- Keith Propert (Biology), Spring 2003
- Stephen Foulis (Biology), Spring 2004
- Jared Powers, Spring 2009

- William Harris, Fall 2008
- Emily Seery, Fall 2009
- Faisal Alam (Biology), Fall 2009
- Kamille Spence, Fall 2010
- Sam Kmail, Fall 2010
- Marcella Eramo, Fall 2010
- Lauren Quigley, Fall 2011-Spring 2012
- Andrea Arabadjis, Spring 2012
- Derek Lockwood, Spring 2012
- Ian McDonald, Fall 2012-Spring 2013
- Richard Lam, Spring 2013
- John Sisay, Spring 2013 (NE LSAMP mentor)
- Jugert Bango, Spring 2014
- Margaret Ryan, Spring 2015- 2016
- Ellen Chow, Spring 2015- 2016
- Drew Eskovitch, Spring 2015-2016
- Luke Arieta, 2017-2018
- Jamie Truax, Fall 2017
- Megan Kelly, 2017-2018
- Yuen Lee, 2017-2018

### **Student Advising**

- 2000-2001 Academic Year: Primary academic advisor to 27 undergraduate Exercise Science Majors and 2 graduate students
- 2001-2002 Academic Year: Primary academic advisor to 35 undergraduate Exercise Science Majors and 2 graduate students
- 2002-2003 Academic Year: Primary academic advisor to 32 undergraduate Exercise Science Majors and 3 graduate students
- 2003-2004 Academic Year: Primary academic advisor to 32 undergraduate Exercise Science Majors and 4 graduate students
- Since 2004, all undergraduate students in Kinesiology are advised by the Undergraduate Program Director and the Advising Staff

### **Additional Teaching Activities**

- Departmental Grant-Writing Workshop, May 2000
- Departmental Summer Writing Group, June and July, 2002
- School Public Health and Health Sciences, Grantsmanship Workshop, December 2002
- University of Massachusetts Bio-Tap Program (invited talk), October 2003
- Entomology 697, Teaching Skills for Large Lecture (guest lecture), Spring 2004
- Kinesiology Graduate Research Seminar (all semesters)
- Kinesiology Doctoral Qualifying Exam (spring semesters)
- Kinesiology Physiology Journal Club (every fall semester)

## VI. SERVICE ACTIVITIES

### Committee Work

- American College of Sports Medicine Youth Clinic Committee (1993-95)
- Member, Organizing Committee for 1996 NIH National Institute on Aging Workshop: Sarcopenia in Aging (1995-1996)
- Member, American College of Sports Medicine's Strategic Health Initiative on Aging in Exercise Science and Sports Medicine (1996-2000)
- Chair, American College of Sports Medicine's Strategic Health Initiative on Aging (1997-2000)
- Co-Founder and Chair, American College of Sports Medicine's Interest Group on Aging (1997)
- Ad Hoc Consultant, Advisory Committee of the General Clinical Research Center, University of California, San Francisco (1999)
- Departmental Personnel Committee, Department of Kinesiology (Exercise Science), University of Massachusetts, Amherst (2000- present)
- Strategic Planning Committee, School of Public Health, University of Massachusetts, Amherst (2002- 2004)
- American College of Sports Medicine, Board of Trustees (2001-2004)
- Perkins Memorial Scholarship Committee, American Physiological Society (2003-2006)
- Research Advisory Committee, American College of Sports Medicine (2004-2007)
- Program Committee (member), *Workshop on Investigation of Human Muscle Function in Vivo* (2004-2005)
- Research Committee, School of Public Health & Health Sciences, University of Massachusetts, Amherst (2004-2007)
- Strategic Planning Committee (chair), Kinesiology Department (2005-2007)
- Qualifying Exam Committee, Kinesiology Department (2006-2008); Chair 2010
- Member, Research Council of the Academic Senate, University of Massachusetts, Amherst (2007-2011)
- Member, Research Policy Committee, University of Massachusetts, Amherst (2007-2011)
- Chair, Research Policy Committee, University of Massachusetts, Amherst (2009- 2011)
- Departmental Graduate Program Director, University of Massachusetts, Amherst (2012-present)
- Member, Doctoral Program Review Committee, University of Massachusetts, Amherst (2012-2013)
- Member, University Strategic Planning Committee, University of Massachusetts, Amherst (2012-2013)
- Organizing Committee, 6<sup>th</sup> World Congress on the Basic Science of Exercise Fatigue (2014-2014)
- Steering Committee, Human Magnetic Resonance Center, UMass Amherst (2015-present)
- Steering Committee, *Center for Personalized Health Monitoring*, UMass Amherst (Fall 2015-present)

- Member and Faculty Liason, IALS/SPHH Energy Metabolism Search Committee (Fall 2015- Spring 2016)
- Member, Departmental Personnel Committee (Fall 2014-present)
- Member, AQAD Writing Team, Kinesiology Department (Fall 2015)
- Member, SPHHS Personnel Committee (2016-present)
- Co-Chair, IALS/SPHHS/Kinesiology Energy Metabolism Search Committee (Fall 2016-present)
- Member, SPHHS Research Committee (2016-present)
- Reviewer, UMass Amherst Commonwealth Honors College, Honors Research Assistant Fellowship and Research Grants (2015, 2016)
- Member, Kinesiology Department Qualifying Exam Committee (2017)
- Member, Chair's Advisory Committee (2016-present)

### **Grant Review Work**

- Natural Sciences & Engineering Research Council of Canada, grant reviewer (since 1996)
- NIH Geriatrics and Rehabilitation Medicine Study Section, ad hoc member (2000, 2001)
- National Institute on Neurological Disorders and Stroke, Special Emphasis Panel, member (2000)
- National Institute on Aging, Special Emphasis Panel member (2000-2001)
- Canadian Foundation for Innovation, grant reviewer (2001)
- National Multiple Sclerosis Society, ad hoc reviewer (2001- 2006)
- Canadian Diabetes Association, Research Grant Reviewer (2002)
- National Institutes of Health, Skeletal Muscle & Exercise Physiology Study Section, ad hoc member (2004)
- National Institutes of Health, Musculoskeletal Rehabilitation Sciences (MRS) Study Section, ad hoc member, (2006)
- National Multiple Sclerosis Society, Scientific Peer Review Committee C, member (2006-present)
- National Institutes of Health, ZRG1 MOSS-L (02) Study Section Member, ad hoc member (2007)
- National Institute on Aging, ZAG1 ZIJ-8, Pepper Centers Review Committee, ad hoc member (2007)
- National Institutes of Health, MRS Study Section Member (ad hoc) 2008
- MRI Pilot Project Program, University of Massachusetts, Amherst, review committee (2008-2010)
- National Institutes of Health, Musculoskeletal Rehabilitation Science Study Section, member (2011-2015)
- National Institutes of Health, Molecular Transducers Physical Activity Health, Study Section, Animal Cores, ad hoc member (July 2016)
- National Institutes of Health, Molecular Transducers Study Section, ad hoc member (June 2018)

### **Journal Work**

- Associate Editor, *Exercise and Sports Science Reviews* (1999-2005; 2016-2018)
- Editorial Board, *Journal of Applied Physiology* (1999-2002)
- Manuscript Reviewer (sampling):
  - Acta Physiologica Scand*
  - American Journal of Physiology; Metabolism & Endocrinology*
  - American Journal of Physiology; Regulatory*
  - American Journal of Rehabilitation Research*
  - Applied Physiology, Nutrition & Metabolism*
  - Archives Physical Medicine & Rehabilitation*
  - European Journal of Applied Physiology*
  - Experimental Gerontology*
  - Experimental Physiology*
  - Journal of Applied Physiology*
  - Journal of Neurophysiology*
  - Journal of Physiology*
  - Journals of Gerontology*
  - Magma*
  - Magnetic Resonance in Medicine*
  - Medicine & Science in Sports & Exercise*
  - Muscle & Nerve*
  - Neurology*
  - PLOS-ONE*

### **Other Service, Volunteer and Mentoring Work**

- Science and Health Education Partnership, University of California, San Francisco, Volunteer Scientist (1991-1996)
- Medical and Research Staff, The Jimmie Heuga Center, Avon, Colorado (1992-2006)
- Mentor, Women In Life Sciences Program, University of California, San Francisco (1994-1997)
- Co-Mentor, Undergraduate Mentoring in Environmental Biology Program, University of Massachusetts, Amherst. Sponsor: National Science Foundation (2000, 2002)
- Mentor, Women's Health Research Forum, University of Massachusetts, Amherst and Baystate Medical Center (April 12, 2002)
- Co-Director, Public Service Endowment Project, University of Massachusetts, Amherst. "*Translating Research in Exercise Science*" (2005-2006)
- Community Outreach talks (various locations), Muscle Physiology Lab, Kinesiology Dept., University of Massachusetts, Amherst
- "*Healthy Living*" Semi-annual newsletter about healthy aging, Muscle Physiology Lab, Kinesiology Dept., University of Massachusetts, Amherst (2009-2011)
- Community Talk: *Healthy Muscles = Healthy Aging*. Healthy Aging in the Valley Program, sponsored by the Daily Hampshire Gazette, October 2015
- External Reviewer for Promotion & Tenure (various universities), approx. 2 per year, on-going
- External Advisory Board, NIH P20 NR016599, (Jacelon, PI) University of Massachusetts Amherst UManage Center