BIOGRAPHICAL SKETCH

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NAME	POSITION TITLE
Jerome A. Dempsey, Ph.D.	Professor Emeritus
eRA COMMONS USER NAME (credential, e.g., agency login) JEROME_DEMPSEY	

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	MM/YY	FIELD OF STUDY
University of Western Ontario, London Ontario	B.A.	1961	Biology and Physical Ed
University of Alberta, Edmonton, Alberta Canada	M.S.	1963	Applied Physiology
University of Wisconsin, Madison, Wisconsin	Ph.D.	1966	Applied Physiology

A. Personal Statement

Major duties at the UW – Madison include director of research at the John Rankin Laboratory, supervision of trainees and instructor in respiratory / exercise / sleep physiology for medical students, undergraduates (Biocore program) and graduate students (Kinesiology). The major research emphasis has been on control of respiratory and cardiorespiratory interactions in humans and chronically instrumented animals during wakefulness and sleep, in hypoxic environments and in health and COPD, CHF and OSA. The Rankin Laboratory supervised the research training of 68 pre- and post-doctoral fellows (PhD, DVM and MD), over 85% of whom remain involved in biomedical science and about 80-90 undergraduates.

B. Positions and Honors

1961 - 1962	Secondary School Teacher, Hamilton, Ontario, Canada
1963 - 1966	Teaching / Research Assistant, University of Alberta, University of Wisconsin-Madison
1966 - 1968	Research Associate, Department of Medicine, University of Wisconsin-Madison
1968 - present	Assistant Professor (1968-1975); Associate Professor (1975-1978); Professor of Preventive Medicine, Physiology, Kinesiology and Veterinary Science (1978-present), University of Wisconsin-Madison
1981 - present	Director, John Rankin Laboratory of Pulmonary Medicine, University of Wisconsin-Madison
1974	NIH International Research Fellow, University of Gothenberg, Sweden
1976 - 1980	NHLBI Public Health Service Research Career Development Award
1982, 2003	Teaching awards – Medical Students (1982), Undergraduate Biocore Program (2003)
1983	Fogarty International Fellow, Meakins-Christie Lab, McGill University, Montreal, Canada
1988 - 1998	Merit Award Grant NHLBI (grant in place 1972-2013)
1988 - 1998	NHLBI SCOR in Sleep Apnea
1988 - 2011	NHLBI Supported Training Grant in Pulmonary Physiology & Neurobiology
1990	Honorary Doctor of Science Degree, University of Waterloo, Ontario, Canada
1993 - 2005	Associate Editor – J Physiol-London (1993-2001); J Appl Physiol (1993-2005)
1994, 2005	Australian / New Zealand Thoracic Society Overseas Lecturer
1996	WARF/University Houses Named Professorship, John Robert Sutton Professor of Population Health Sciences, University of Wisconsin-Madison
1998-2016	Named Lectureships: Wolfe (ACSM) (1985); Dill (1986); Rechnetzer (UWO) (1998); Gollnick (ACSM) (2001); Cherniack (Case Western) (2002); Sutton (Can. Society Exer. Physiol.) (2004); Comroe (Exp. Biol.) (2004); Montaye/Nagle (UW) (2008); Christie (Can. Thor. Society) (2010); Ludwig Engel (Sydney) (2010); Bayliss-Starling Prize Lecture (2012) (UK Physiologic Society); Ellsworth Buskirk (2013) (ACSM); Cherniak / Lahiri Memorial Lecture (2016) (Exp Biol)
2004	Honour Award for Scientific Contributions, American Coll. Sports Med.
2005-2011	Editor-in-Chief, Journal of Applied Physiology

2008 -	Professor Emeritus UW - Madison
2011 - 2016	CrossTalk Editor, Journal of Physiology, UK
2013	Miegunyah Distinguished Visiting Fellow, University of Melbourne, Australia
2013	Bodil M. Schmidt-Nielsen Distinguished Mentor & Scientist Award, American Physiological Society
2015	Honor Award for Scientific Contributions, EEP section of American Physiologic Soc.
2015	Elected member of inaugural class of Fellows of the American Physiologic Soc.

C. Selected Peer-reviewed Publications (Selected from 354 peer-reviewed publications)

Smith CA, Blain GM, Henderson KS, Dempsey JA. Peripheral chemoreceptors determine the respiratory sensitivity of central chemoreceptors to CO2 : role of carotid body CO2. J Physiol. 2015 Sep;593(18):4225-43. PMID: 26171601;

Dempsey JA, Morgan BJ. Humans In Hypoxia: A Conspiracy Of Maladaptation?! Physiology (Bethesda). 2015 Jul;30(4):304-16. doi: 10.1152/physiol.00007.2015. Review. PubMed PMID: 26136544.

Morgan BJ, Adrian R, Bates ML, Dopp JM, Dempsey JA. Quantifying Hypoxia-Induced Chemoreceptor Sensitivity in the Awake Rodent. J Appl Physiol. 117(7):816-24, 2014.

Dempsey JA. Career perspective: Jerome A. Dempsey. Extrem Physiol Med. 3:13, 2014

Dempsey JA, Smith CA. Pathophysiology of human ventilatory control. Eur Respir J. 44(2):495-512, 2014.

Dempsey JA, Powell FL, Bisgard GE, Blain GM, Poulin MJ, Smith CA. Role of chemoreception in cardio-respiratory acclimatization to and deacclimatization from hypoxia. J Appl Physiol. 116(7):858-66, 2014.

Dempsey JA, Xie A, Patz DS, Wang D. Physiology in Medicine: Obstructive sleep apnea pathogenesis and treatment--considerations beyond airway anatomy. J Appl Physiol, 116(1):3-12, 2014.

Dempsey JA, Blain GM, Amann M. Are Type III – IV Muscle Afferents Required for a Normal Steady State Exercise Hyperpnea In Humans? J Physiol, Feb 1;592(Pt 3):463-74, 2014.

Dempsey JA. Mentoring through teamwork: lessons learned. Physiologist. Jul;56(4):89, 91-3, 2013.

Dempsey JA Limits to Ventilation (For Sure!) and Exercise (Maybe?) in Mild COPD. Editorial Am J Respir Crit Care Med Jun 15;187(12):1282-3. 2013.

Limberg JK, Morgan BJ, Schrage WG, Dempsey, JA. Respiratory influences on muscle sympathetic nerve activity and vascular conductance in the steady state. Am J Physiol Heart Circ Physiol Jun;304(12):H1615-23, 2013.

Dempsey JA, Jacques AJ. Respiratory system response to exercise in health. In Fishman's Pulmonary Diseases and Disorders, Fifth edition. Grippi M, Fishman J, Pack A, et al. (eds) 2015.

Xie A, Teodorescu M, Pegelow DF, Teodorescu MC, Gong Y, Fedie JE, Dempsey JA. Effects of stabilizing or increasing respiratory motor outputs on obstructive sleep apnea. J Appl Physiol Jul;115(1):22-33, 2013.

Javaheri S, Dempsey, JA. Central sleep apnea. Compr Physiol 3:141-163, 2013.

Dempsey JA. Bayliss-Starling prize memorial lecture - New perspectives concerning feedback influences on cardiorespiratory control during rhythmic exercise and on exercise performance. J Physiol Sep 1;590(Pt 17):4129-44, 2012.

Dempsey JA Amann M, Harms CA, Wetter TJ. Respiratory system limitations to performance in the healthy athlete: some answers, more questions! Dtsch Z Sportmed 63(6):157-162, 2012.

Forster HV, Haouzi P, Dempsey JA. Control of Breathing During Exercise. Compr Physiol 2:743-777, 2012.

Dempsey JA, Smith CA, Blain GM, Xie A, Gong Y, Teodorescu M. Role of central / peripheral chemoreceptors and their interdependence in the pathophysiology of sleep apnea. Adv Exp Med Biol. 2012;758:343-9. 2012.

Amann M, Blain GM, Proctor LT, Sebranek JJ, Pegelow DF, Dempsey JA. Implications of group III and IV muscle afferents for high-intensity endurance exercise performance in humans. J Physiol. 2011 Nov 1;589(Pt 21):5299-309. PMID: 21878520

Xie A, Bedekar A, Skatrud J B, Teodorescu M, Gong Y, and Dempsey J A. The heterogeneity of obstructive sleep apnea (predominant obstructive vs pure obstructive apnea). Sleep 34: 745-750, 2011.

Dempsey JA. Cardiorespiratory responses to exercise in CHF: a conspiracy of maladaptation. J Physiol. 2010 Aug 1; 588(Pt 15):2683. PubMed PMID: 20675813.

Amann M, Blain GM, Proctor LT, Sebranek JJ, Pegelow DF, Dempsey JA. Group III and IV muscle afferents contribute to ventilatory and cardiovascular response to rhythmic exercise in humans. J Appl Physiol. 2010 Oct;109(4):966-76. PMID: 20634355

Amann M, Regan MS, Kobitary M, Eldridge MW, Boutellier U, Pegelow DF, Dempsey JA. Impact of pulmonary system limitations on locomotor muscle fatigue inpatients with COPD. Am J Physiol Regul Integr Comp Physiol. 2010 Jul;299(1):R314-24. PMID: 20445160

Blain GM, Smith CA, Henderson KS, Dempsey JA. Peripheral chemoreceptors determine the respiratory sensitivity of central chemoreceptors to CO_2. J Physiol. 2010 Jul 1;588(Pt 13):2455-71. PMID: 20421288

Smith CA, Forster HV, Blain GM, Dempsey JA. An interdependent model of central/peripheral chemoreception: Evidence and implications for ventilatory control. Respir Physiol Neurobiol. 2010 Oct 31;173(3):288-97. PMID: 20206717

Dempsey JA, Veasey SC, Morgan BJ, O'Donnell CP. Pathophysiology of Sleep Apnea. Physiol Rev. 2010, Jan 90: 47–112. PMID: 20086074

Stickland MK, Smith CA, Soriano BJ, Dempsey JA. Sympathetic restraint of muscle blood flow during hypoxic exercise. Am J Physiol Regul Integr Comp Physiol. 2009 May;296(5):R1538-46. PMID: 19297541

Blain GM, Smith CA, Henderson KS, Dempsey JA. Contribution of the carotid body chemoreceptors to eupneic ventilation in the intact, unanesthetized dog. J Appl Physiol. 2009 May;106(5):1564-73. PMID: 19246650

Xie A, Skatrud JB, Barczi SR, Reichmuth K, Morgan BJ, Mont S, Dempsey JA. Influence of cerebral blood flow on breathing stability. J Appl Physiol. 2009 Mar;106(3):850-6. PMID: 19118158

Amann M, Proctor LT, Sebranek JJ, Pegelow DF, and Dempsey JA. Opioid-mediated muscle afferents inhibit central motor drive and limit peripheral muscle fatigue development in humans. J Physiol. 2009 Jan 15;587(Pt 1):271-83. PMID: 19015193

Stickland MK, Amann M, Katayama K and Dempsey JA. Pulmonary responses to exercise and limitations to human performance. Physiological bases of human performance during work and exercise. Nigel Taylor, Herbert Groeller (Eds) Churchill Livingstone (Publisher) 2008 29-48

Green D, Naylor L, George K, Dempsey JA, Stickland MK and Katayama K. Cardiovascular and pulmonary adaptations to endurance training. Physiological bases of human performance during work and exercise Nigel Taylor, Herbert Groeller (Eds) Churchill Livingstone (Publisher) 2008 49-70

Amann M, Proctor LT, Sebranek JJ, Eldridge MW, Pegelow DF, Dempsey JA..Somatosensory feedback from the limbs exerts inhibitory influences on central neural drive during whole body endurance exercise. J Appl Physiol. 2008 Dec;105(6):1714-24. PMID: 18787091

Dempsey JA, McKenzie DC, Haverkamp HC, Eldridge MW. Update in the understanding of respiratory limitations to exercise performance in fit, active adults. Chest. 2008 Sep;134(3):613-22. Review. PMID: 18779196

Dempsey JA, Amann M, Romer LM, Miller JD. Respiratory system determinants of peripheral fatigue and endurance performance. Med Sci Sports Exerc. 2008 Mar;40(3):457-61. PMID: 18379207.

Amann M, Dempsey JA. The concept of peripheral locomotor muscle fatigue as a regulated variable. J Physiol. 2008 Feb 14. [Epub ahead of print] PubMed PMID:18276726.

Dempsey JA, Miller JD, Romer L, Amann M, Smith CA. Exercise-induced respiratory muscle work: effects on blood flow, fatigue and performance. Adv Exp Med Biol. 2008;605:209-12. PMID: 18085273.

Amann M, Dempsey JA. Locomotor muscle fatigue modifies central motor drive in healthy humans and imposes a limitation to exercise performance. J Physiol. 2008 Jan 1;586(1):161-73. PMID: 17962334.

Katayama K, Smith CA, Henderson KS, Dempsey JA. Chronic intermittent hypoxia increases the CO2 reserve in sleeping dogs. J Appl Physiol. 2007Dec;103(6):1942-9. Epub 2007 Oct 11. PubMed PMID: 17932301.

Amann M, Pegelow DF, Jacques AJ, Dempsey JA. Inspiratory muscle work in acute hypoxia influences locomotor muscle fatigue and exercise performance of healthy humans. Am J Physiol Regul Integr Comp Physiol. 2007 Nov;293(5):R2036-45. PMID: 17715180.

Smith CA, Chenuel BJ, Henderson KS, Dempsey JA. The apneic threshold during non-REM sleep in dogs: sensitivity of carotid body vs. central chemoreceptors. J Appl Physiol. 2007 Aug;103(2):578-86. PMID: 17495123.

Funded Research Projects Ongoing or Completed During the Last 3 Years:

Peripheral and Central Interactions in Ventilatory Control

Principal Investigator: Curtis A. Smith, Ph.D (Jerome A. Dempsey, Ph.D. Co-Investigator)
Agency: National Heart, Lung, and Blood Institute
Type: R01 (HL50531, Years 13-16)
Period: Period: April 1, 2010 to March 31, 2014.

Goal: The major goal of this project is to determine the role of carotid and medullary chemoreceptors and of increased pulmonary vascular pressures on the control of breathing stability in the unanesthetized, awake and sleeping animal. This study in the unanesthetized canine addresses the fundamental basic science of chemoreception.

Targeted Therapies for Selected Phenotypes of Obstructive Sleep Apnea

Jerome A. Dempsey, Ph.D. (PI)
Agency: National Heart, Lung, and Blood Institute
Type: RC1HL099724
Period: September 30, 2009 to August 31, 2011

Goal: This project aims to determine the relative effectiveness of new treatments of obstructive sleep apnea in humans based on the specific patients phenotype for airway collapsibility and respiratory control system gain. The findings for this study provided the basis for the CO_2-based therapies for OSA proposed in the current grant submission.

Cardiovascular Sequellae of Respiratory Muscle Work

Jerome A. Dempsey, Ph.D. (PI)
Agency: National Heart, Lung, and Blood Institute
Type: R01 (HL15469, Years 38-43)
Period: March 1, 2007 to February 28, 2012

Goal: The major goal of this project is to determine the influence of respiration on cardiac output and blood flow distribution and exercise performance in humans and dogs in health and in heart failure.