
BIOGRAPHICAL SKETCH

NAME: Jerome A. Dempsey

POSITION TITLE: Professor Emeritus, University of Wisconsin, Madison, United States of America

EDUCATION/TRAINING

INSTITUTION AND LOCATION	DEGREE (if applicable)	Completion Date MM/YYYY	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 faculty 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 90-100 undergraduates. Research at the Rankin laboratory (J Dempsey, PI) was funded continuously from 1970 through 2020 via grants from the NHLBI as well as from the AHA, DOD, UW -Madison and private foundations. NIH also funded a Specialized Center for Research in Sleep Apnea at UW (1988-1998) which was one of three centers nationally and included the founding of the Wisconsin Sleep Cohort. NHLBI also provided long term funding for training scientists in the Rankin lab via a Graduate Training Grant (1988-2011).

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, Biomedical Eng 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); Montoye/Nagle (UW) (2008); Meakins- Christie, McGill University 2009; Christie (Can. Thor. Society) (2010); Ludwig Engel (Sydney) (2010); Bayliss-

- Starling Prize Lecture (2012) (UK Physiologic Society); Ellsworth Buskirk (2013) (ACSM); Cherniack / Lahiri Memorial Lecture (2016) (Exp Biol). Minnequah Professor, Melbourne, 2017.
- 1985-2016 ATS Activities- Inaugural chair of RNS assembly, member program committee, published /reviewed for AJRCCM, several invited symposia lectures plus my mentees presentations at ATS annual meetings.
- 2004 Honour Award for Scientific Contributions, American Coll. Sports Med.
- 2005-2011 Editor-in-Chief, Journal of Applied Physiology; Consulting Ed 2012-.- ;
- 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, Amer Physiol 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 Society
- 2019 Honorary Doctor of Science degree, University of Western Ontario
- 2024 Charles M. Tipton Memorial lecture, ACSM, Boston.

C. Contribution to Science

1964-2023 (total peer-reviewed publications: 419, total citations 42,000): see Publications:

<http://www.ncbi.nlm.nih.gov/sites/myncbi/1IET-HYdC9gAo/49719995/public/?sort=date&direction=ascending>

Representative Publications:

1. Uncovered the key mechanisms mediating ventilatory acclimatization to chronic hypoxia
 - a. Dempsey JA, Forster HV. Mediation of Ventilatory Adaptations. *Physiol Rev.* 1982 Jan;62(1):262-346. Review. PubMed PMID: 6798585.
 - b. 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. PubMed PMID: 24371017; PubMed Central PMCID: PMC4116395.
2. Determined the limits of the Respiratory System During Exercise in health, COPD and CHF.
 - a. Dempsey JA, Hanson PG, Henderson KS. Exercise-induced arterial hypoxaemia in healthy human subjects at sea level. *J Physiol.* 1984 Oct;355:161-75. PubMed PMID: 6436475; PubMed Central PMCID: PMC1193484.
 - b. Dempsey JA, Wagner PD. Exercise-induced arterial hypoxemia. *J Appl Physiol.* 1999 Dec;87(6):1997-2006. Review. PubMed PMID: 10601141.
 - c. Dempsey JA, Reddan WG, Birnbaum ML, Forster HV, Thoden JS, Grover RF, Rankin J. Effects of acute through life-long hypoxic exposure on exercise pulmonary gas exchange. *Respir Physiol.* 1971 Oct;13(1):62-89. PubMed PMID: 5112830.
 - d. Dempsey JA. Respiratory Determinants of of Exercise Limitation: Focus on Phrenic Afferents and the Lung Vasculature. *Clinics in Chest Medicine* 40;No2, 331-342. 2019.
 - e. Dempsey JA, Hull J, LeGerche A. Is the Healthy Respiratory System Overbuilt, Underbuilt or Just Right to meet the Demands Imposed by Exercise? *J Appl Physiol*, 2020.
3. Demonstrated the existence and importance of the diaphragm metaboreceptor and its importance to blood flow distribution and locomotor muscle fatigue during exercise.
4. Defined the critical role of locomotor muscle afferent feedback in the regulation of the cardiorespiratory and locomotor response to exercise and to exercise performance in healthy humans.
 - a. Dempsey JA, Blain GM, Amann M. Are type III-IV muscle afferents required for a normal steady-state exercise hyperpnoea in humans? *J Physiol.* 2014 592(3):463-74. Epub 2013 Sep 2. Review. PubMed PMID: 24000177.
5. Demonstrated and quantified the Interdependence of Peripheral and Central Chemoreceptor Function and its Role in the Control of Breathing and Sleep Apnea Pathogenesis.
 - a. J.A. Dempsey, C.A. Smith, Update on Chemoreception: Influence on Cardiorespiratory Regulation and Pathophysiology, *Clinics in Chest Medicine* 40:No 2, 269-284. 2019.