

**BIOGRAPHICAL SKETCH**

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NAME Dr. Michael B. Harris		POSITION TITLE Assistant Professor	
EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)			
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
University of British Columbia	B. Sc.	1990	Zoology
University of British Columbia	M. Sc.	1992	Zoology
University of British Columbia	Ph.D.	1997	Zoology
University of Calgary	postdoc	2000	Physiology
Dartmouth Medical School	Res. Assoc.	2003	Physiology

**Academic Appointments and Training:**

04/91 - 06/91 Visiting Researcher, University of California, Santa Cruz, Long Marine Laboratory.  
 07/91 - 08/91 Extra-sessional Instructor, Department of Zoology, University of British Columbia.  
 07/92 - 08/92 Extra-sessional Instructor, Department of Zoology, University of British Columbia.  
 05/92 - 07/92 Visiting Scholar, Stanford University, Department of Biological Sciences.  
 06/95 - 08/95 Visiting Researcher, University of West Indies (Jamaica), Discovery Bay Marine Laboratory.  
 01/98 - 09/00 Postdoctoral Fellow, Department of Physiology, University of Calgary  
 09/00 - 06/03 Research Associate, Department of Physiology, Dartmouth Medical School  
 07/03 - Assistant Professor, Department of Biology and Institute of Arctic Biology, University of Alaska Fairbanks  
 07/04 - Affiliate Assistant Professor, Department of Chemistry, University of Alaska Fairbanks  
 09/05 - Affiliate Assistant Professor of Public Health, Department of Health Sciences, University of Alaska Anchorage

**PUBLICATIONS:**

- Castellini M, Milsom W, Berger R, Costa D, Jones D, Castellini J, Rea L, Bharna S, Harris M (1993) Patterns of respiration and heart rate during wakefulness and sleep in elephant seal pups. *Am. J. Physiol.* 266:R863-R869.
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- Milsom W, Castellini M, Harris M, Castellini J, Jones D, Berger R, Bharna S, Rea L, Costa D (1996) Hypoxia, hypercapnia and cardiorespiratory patterns of sleep-associated apnea in elephant seal pups. *Am. J. Physiol.*, 271(40):R1017-24.
- Kinkead R, Harris M, Milsom W (1997) The role of the Nucleus Isthmi in respiratory pattern formation in bullfrogs. *J. Exp. Biol.* 200:1781-1793.
- Milsom WK, Harris MB, Reid SG (1997) Do descending excitatory and inhibitory inputs interact to produce episodic breathing? *Respir. Physiol.* 110:307-317.
- Carefoot TH, Harris MB, Taylor BE, Donovan D, Karentz D (1998) Mycosporine amino acids: possible UV- protection in eggs of the sea hare, *Aplysia dactylomela*. *Mar. Biol.* 130:389-396.

- 8 Milsom WK, Zimmer MB, Harris MB (1999) Regulation of cardiac rhythm in hibernation. *Comp. Biochem. Physiol. A.* 124: 383-391.
- 9 Harris MB, Milsom WK (2000) Is hibernation facilitated by an inhibition of arousal? In: Heldmaier G., Klaus, S., and Klingenspor, M. (eds) *Life in the Cold*. Springer, New York. Pp.241-250.
- 10 Zimmer MB, Harris MB, Milsom WK (2000) Control of cardiac and ventilation frequencies during hibernation in ground squirrels. In: Heldmaier G., Klaus, S., and Klingenspor, M. (eds) *Life in the Cold*. Springer, New York. Pp.159-167.
- 11 Wilson RJA, Harris MB, Remmers JE, Perry SF (2000) Evolution of air-breathing and central CO<sub>2</sub>/H<sup>+</sup> sensitivity: New insights from an old fish. *J. Exp. Biol.* 203(22):3505-3512.
- 12 Harris MB, Milsom WK (2001) The influence of NMDA receptor-mediated processes on breathing pattern in ground squirrels. *Respir. Physiol.* 125:181-197.
- 13 Harris MB, Milsom WK (2001) Vagal feedback is essential for breathing in ground squirrels. *Respir. Physiol.* 125:199-212.
- 14 Remmers JE, Torgerson C, Harris M, Perry SF, Vasilakos K, Wilson RJ (2001) Evolution of central respiratory chemoreception: a new twist on an old story. *Respir Physiol.* 129(1-2):211-7.
- 15 Perry SF, Wilson RJ, Straus C, Harris MB, Remmers JE (2001) Which came first, the lung or the breath? *Comp Biochem Physiol A Mol Integr Physiol.*129(1):37-47.
- 16 Milsom WK, Zimmer MB, Harris MB (2001)Vagal control of cardiorespiratory function in hibernation. *Exp Physiol.* 86(6):791-6.
- 17 Wilson RJ, Vasilakos K, Harris MB, Straus C, Remmers JE (2002) Evidence that ventilatory rhythmogenesis in the frog involves two distinct neuronal oscillators. *J Physiol. (Lond)* 540(Pt 2):557-70.
- 18 Harris MB, Wilson RJ, Vasilakos K, Taylor BE, Remmers JE (2002) Central respiratory activity of the tadpole in vitro brain stem is modulated diversely by nitric oxide. *Am J Physiol Regul Integr Comp Physiol.* 283(2):R417-28.
- 19 Taylor BE, Harris MB, Burk M, Smyth K, Lukowiak K, Remmers JE (2003) Nitric oxide mediates metabolism as well as respiratory and cardiac responses to hypoxia in the snail *lymnaea stagnalis*. *J Exp Zool Part A Comp Exp Biol.* 295(1):37-46.
- 20 Taylor BE, Harris MB, Coates EL, Gdovin MJ, Leiter JC (2003) Central CO<sub>2</sub> chemoreception in developing bullfrogs: anomalous response to acetazolamide. *J Appl Physiol.* 94(3):1204-12.
- 21 Harris MB, St -John WM (2003) Tonic pulmonary stretch receptor feedback modulates both eupnea and gasping in an in situ rat preparation. *Am J Physiol Regul Integr Comp Physiol.* 285(1):R215-21.
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- 23 Taylor BE, Harris MB, Leiter JC, Gdovin MJ (2003) Ontogeny of central CO<sub>2</sub> chemoreception: chemosensitivity in the ventral medulla of developing bullfrogs. *Am J Physiol Regul Integr Comp Physiol.* 285(6):R1461-72.
- 24 Drew KL, Harris MB, LaManna JC, Smith MA, ZHU XW, Ma YL (2004) Hypoxia tolerance in mammalian heterotherms. *J Exp Biol.*207(Pt 18):3155-62.
- 25 Harris MB, Olson LE, Milsom WK (2004) The origin of mammalian heterothermy: a case for perpetual youth. In: *Life in the Cold: Evolution, Mechanisms, Adaptation, and Application. Twelfth International Hibernation Symposium*. BM Barnes and HV Carey (Eds.). Biological Papers of Alaska, number 27. Institute of Arctic Biology, University of Alaska Fairbanks, Alaska, USA. Pp 41-50.
- 26 St.-John WM, Rudkin AH, Harris MB, Leiter JC, Paton JFR (2005) Maintenance of eupnea and gasping following alterations in potassium concentration of perfusates of in situ rat preparation. *J. Neurosci. Meth.* 142(1):125-9.
- 27 Harris MB, St -John WM (2005) Phasic pulmonary stretch receptor feedback modulates both eupnea and gasping in an in situ rat preparation. *Am J Physiol Regul Integr Comp Physiol Am J Physiol Regul Integr Comp Physiol.* 289(2):R450-R455

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- 29 Rodman JR, Harris MB, St.-John WM, Leiter JC (2006) Gap junction blockade does not alter eupnea or gasping in the juvenile rat. *Respir Physiol Neurobiol.* 152(1):51-60.

#### Abstracts

- 1 Harris MB, Milsom WK (1994) Vagal feedback and ventilation during urethane "sleep" and hibernation. *Physiologist*, 37-5:A-51.
- 2 Harris MB, Milsom WK (1994) Vagal feedback and respiratory control during urethane "sleep" in ground squirrels. *Can. Soc. Zoologists Bull.* 25(2):61.
- 3 Harris MB, Milsom WK (1994) The role of the vagus nerve in cardio-respiratory control during hibernation. *FASEB J.* 8-4 I: A1.
- 4 Harris MB, Milsom WK (1995) Effects of NMDA blockade and vagotomy on breathing in anesthetized ground squirrels. *Physiol. Zool.* 68-4:64.
- 5 Harris MB, Milsom WK (1995) The role of glutamate in ventilatory responses to moderate hypoxia. In: *Hypoxia and the Brain*, Sutton, Houston and Coates (Eds.), Queen City, Burlington, Vermont. 323:46.
- 6 Harris MB, Milsom WK (1996) Effects of NMDA blockade and vagal interruption on breathing in ground squirrels. *Physiologist*, 39(3) 180 5.45.
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- 10 Harris MB, Remmers JE (1999) Nitric oxide modulates respiratory activity in the isolated tadpole brainstem. *Can. Soc. Zoologists Bull.* 30(2):69.
- 11 Vasilakos K, Harris MB, Wilson RJA, Remmers JE (1999) Ontogenetic changes in the hypoxic response of the isolated, *in vitro* brainstem of *Rana catesbeiana*. *Comp. Biochem. Physiol.* 124A:S112.
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- 21 Harris MB, Filiano JJ, Miller CA, Darnall RA (2001) MUSCIMOL IN THE ROSTRAL VENTRAL MEDULLA ALTERS THE VENTILATORY RESPONSE TO INTERMITTENT HYPOXIA IN PIGLETS Soc. Neuroscience abstracts Program No 573.7.
- 22 Harris MB, Richerson GB, St.John WM (2002) SEROTONERGIC MODULATION OF VENTILATORY PATTERN IN THE PERFUSED RAT BRAINSTEM. Soc. Neuroscience abstracts Program No. 221.4
- 23 Darnall RA, Harris M, Filiano JJ, Gill W (2002) DIALYSIS OF 8OH - DPAT INTO THE JUXTA - FACIAL PARAGIGANTOCELLULARIS LATERALIS ( PGCL ) DISRUPTS SLEEP ARCHITECTURE IN PIGLETS. Soc. Neuroscience abstracts Program No. 577.12.
- 24 Taylor BE, Harris MB, Rudkin AH, Gdovin MJ, Leiter JC (2003) Single-unit analysis has identified respiratory entrainment pattern generator neurons and chemosensitive neurons in the ventral medulla of bullfrogs. Soc. Neuroscience abstracts Program No 826.17, 2003
- 25 Darnall RA, Harris MB, Gill WG, Niblock MM (2003) Destruction of serotonergic neurons in the paragigantocellularis (PGCL), a component of the rostral ventral medulla, (RVM), disrupts sleep architecture in piglets. Soc. Neuroscience abstracts Program No 609.16
- 26 Rodman, JR, Harris MB, St.-John WM, Bartlett D., Erlichman, Leiter JC (2003) Systemic gap junction blockade does not affect gasping in the in situ rat. Soc. Neuroscience abstracts Program No 503.16.
- 27 Harris MB, Richerson GB, Plante J, St.-John WM (2003) Serotonergic modulation of hypercapnic ventilatory responses in the perfused rat brainstem. Soc. Neuroscience abstracts Program No 826.9.
- 28 Hoffman JM, Harris MB, Gill WH, Niblock MM, Darnall RA (2004). Inhibition of serotonergic neurons in the caudal medulla of conscious, awake and sleeping piglets alters the respiratory response to hypoxia. Soc. Neuroscience abstracts Program No. 889.9.
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- 32 Harris MB. Drew, KL Rasley BT, and Green TK (2005). Ultra small microdialysis microelectrode combination. American Chemical Society 60th Northwest Regional Meeting.