

CURRICULUM VITAE

Dr. Michael B. Harris

CURRENT POSITION: 06/03-Present

Associate Professor of Biology (Integrative Physiology and Neurobiology)
Institute of Arctic Biology, Department of Biology and Wildlife
Alaska Basic Neuroscience Program, University of Alaska Fairbanks
University of Alaska Fairbanks Department of Veterinary Medicine
Associate Faculty, College of Veterinary Medicine and Biomedical Sciences, Colorado State University
Associated Faculty of Chemistry and Biochemistry, Department of Chemistry and Biochemistry,
University of Alaska Fairbanks.
Associated Faculty of Public Health, Department of Health Sciences, University of Alaska Anchorage.

PERSONAL INFORMATION:

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<u>EDUCATION :</u>	<i>Degree</i>		<i>Institution</i>	<i>Date</i>
Undergraduate:	B.Sc. (Honours)	Zoology	University of British Columbia	1986-1990
Graduate:	M.Sc.	Zoology	University of British Columbia	1990-1992
	Ph.D.	Zoology	University of British Columbia	1992-1997

ACADEMIC APPOINTMENTS AND POSTGRADUATE TRAINING:

05/91 - 07/91 Visiting Researcher, Long Marine Lab, University of California Santa Cruz
05/92 - 07/92 Visiting Researcher, Department of Biology, Stanford University
05/95 - 07/95 Visiting Researcher, Discovery Bay Marine Station (Jamaica), McMaster University
01/98 - 09/00 Postdoctoral Fellow, Department of Physiology and Biophysics, University of Calgary
09/00 - 06/03 Research Associate, Department of Physiology, Dartmouth Medical School
06/03 - 06/08 Assistant Professor, Department of Biology and Wildlife, Institute of Arctic Biology,
University of Alaska Fairbanks
06/04 - 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
06/08 Tenure and promotion to Associate Professor, Department of Biology and Wildlife,
Institute of Arctic Biology, University of Alaska Fairbanks
10/13 - Affiliate Assistant Professor, Department of Veterinary Medicine, University of Alaska
Fairbanks
10/14 - Affiliate Assistant Professor, College of Veterinary Medicine and Biomedical Sciences,
Colorado State University

GRANTS CURRENT:

Brown Adipose Tissue Thermography in Canines
Source of Support: Ralston-Purina (PI Harris)
Total Award Amount: \$ 30,671 Total Award Period Covered: 09/15/2014-07/30/2015

Evaluating a Raphé Chemosensory Amplifier Network with Multi-channel Array recording.
Source of Support: NIH 1SC2GM112570-01 (PI Harris)
Total Award Amount: \$ 450,000 Total Award Period Covered: 04/15/15-04/14/18

GRANTS PENDING:

A new mechanism of oxygen-sensitive chemoreception: a Pilot Project to Enhance Undergraduate Training in Biomedical Research.

Source of Support: UAF Biomedical Learning and Student Training (BLaST) program.
Institutional award; Project Leader: Harris
Total Award Amount: \$ 40,000 Total Award Period Covered: 3/30/2015 to 6/30/2016 (tentative)

Characterizing a Raphé Chemosensory Amplifier.
Source of Support: NIH 1R15HL126105-01 (Impact score, 24; PI Harris; pending FY2015 funding decision)
Total Award Amount: \$ 442,464 Total Award Period Covered: TBD

Spinal Oxygen Sensors in Amphibians and Fish.
NSF IOS 1530341 (Preliminary proposal Submitted Jan 16, 2015; pending invitation for full proposal; PI Harris)
Total Award Amount: \$ TBD Total Award Period Covered: 01/01/16-12/31/20

Virus induced behavior changes through receptor interactions.
NSF IOS 1525069 (Preliminary proposal Submitted Jan 16, 2015; pending invitation for full proposal;
PI Hueffer, Co-I Harris
Total Award Amount: \$ TBD Total Award Period Covered: 01/01/16-12/31/20

GRANTS PAST:

Advancing UAF SNRP: Serotonin's Role in Breathing and Apnea Recovery (PI Duffy; Major Project Leader Harris)
Source of Support: NIH 5U54NS041069-06 through 010;
Total Award: \$6,377,074; component devoted to Harris Major Project: approx. \$1,200,000
Total Award Period Covered: 05/01/2006 – 04/30/2013

Advancing UAF SNRP: Administrative Supplement (PI Duffy; Author and sole recipient Harris)
Source of Support: NIH 3U54NS041069-10-S1
Total Award Amount: \$93,750 Total Award Period Covered: 09/15/2011 – 04/30/2013

INBRE Affiliate Faculty Award (institutional award)
Source of Support: NIH P20RR016466
Total Award Amount: \$ 36,275 Total Award Period Covered: 03/01/2013-05/28/2014

INBRE Affiliate Faculty Award (institutional award)
Source of Support: NIH P20RR016466
Total Award Amount: \$ 36,275 Total Award Period Covered: 03/01/2012-02/28/2013

INBRE Affiliate Faculty Award (institutional award)
Source of Support: NIH P20RR016466
Total Award Amount: \$ 72,550 Total Award Period Covered: 03/01/2011-02/28/2012

SOCIETY MEMBERSHIPS:

Society for Neuroscience; American Physiological Society (Respiratory Section Steering Committee and Programming Committee member); American Association for the Advancement of Science (AAAS Arctic Division Leadership)

CERTIFICATIONS:

Certification in Principals and Practice of Clinical Research, National Institutes of Health Clinical Center (2015)
Responsible Conduct of Research (2014)

HONORS:

2000 Natural Science and Engineering Research Council of Canada, Postdoctoral Fellowship
2009 Nominee, College of Natural Science and Math, Teaching Excellence Award
2013 College of Natural Science and Math, Teaching Excellence Award
2014 Nominee, UAF *Emil Usibelli award for distinguished teaching*
2014 College of Natural Science and Math, Merit Bonus for excellence in teaching/research/service
2014 Winner, UAF Sven Ebbesson Award for Excellence in Neuroscience
2015 Nominee, UAF *Emil Usibelli award for distinguished teaching*

INSTITUTIONAL SERVICE:

UAF Institutional Animal Care and Use Committee (2005 - 2014)
UAF Faculty Senate Core Curriculum Committee (2005-11; Co-Chair 2006– 08; Chair 2008-10)
UAF Faculty Senate Administrative Committee (2007 - 2009)
UAF Committee on the Integration of Teaching and Research (2009 - 2010)
UAF Core Curriculum Revitalization and Assessment Group (2011)
UAF Department of Veterinary Medicine (various development committees and groups; 2009-present)
UAF and Colorado State University Department of Veterinary Medicine; Admissions Committee (2014)
UAF Department of Veterinary Medicine; Physiology Curriculum Committee (2014 – present)
Department of Biology & Wildlife Comprehensive Exam Committee (2006 - 2010)
Institute of Arctic Biology Space Committee (2006 - present)
Institute of Arctic Biology Director's Council (2008 - present)

PROFESSIONAL SERVICE:

Manuscript reviewed for: Respiration Physiology and Neurobiology; Cryobiology; Comparative Biochemistry and Physiology; Journal of Experimental Biology; American Journal of Physiology; Journal of Chemical Neuroanatomy.

Member of the American Physiological Society Respiratory Section Steering Committee (2008-present)
Frontiers Physiology, Review Editorial Board member (2010-present)
Incoming Division Representative, Arctic Division, AAAS.

COURSES TAUGHT:

<i>Course:</i>	<i>Term(s):</i>
Biol 310 Animal Physiology	Fall 2009- 2014; Summer 2014
Biol 417 Neurobiology	Spring 2005-2014 (except 2012)
Biol 617 Neurobiology	Spring 2005-2014
Biol 317 Comp. Vert. Anat.	Spring 2012 (team taught)
FYE F100 (Freshman Seminar)	Fall 2011
Biol 111x Human Anat. Physiol.	Fall 2010 (team taught)
Biol 602 Research Design	Fall 2006
Biol/Chem 461 Cell Biology	Spring 2004
Biol/Chem 617 Cell Biology	Spring 2004
Biol 397/497 Independent Study	Multiple

MENTORING; STUDENTS AND FELLOWS:

Completed, Postdoctoral / Graduate / Honors Undergraduate:

One minority Postdoctoral Fellow (Toppin; 2 years), now Assistant Professor, University of the Bahamas.

Two MS Biology (Fieldman; graduated 2007), now Technician Washington State Department of Fish and Game; Johansen (graduated 2014), now Research Assistant National Institutes of Health, currently attending Stanford Medical School.

Three PhD Biology (physiology); Corcoran (graduated 2009), now Postdoctoral Fellow, Dartmouth Medical School; Iceman (graduated 2013), now Postdoctoral Fellow, University of South Florida; Mosher (Graduated 2014), Postdoctoral Fellow, National Institutes of Health, currently attending University of Washington School of Medicine.

Two honors undergraduates; Tallan (graduated 2013), overall first place winner, Western Region Honors Conference 2012 and 2013, currently attending SUNY Albany School of Medicine; Schmidt (graduated 2014), currently attending University of Washington School of Medicine.

Current, Graduate:

One current MS Biology; Tackett, expected graduation 2015/16.

Current, Undergraduate:

Two current undergraduate researchers

Past Undergraduate:

Mentored/co-mentored 16 undergraduate students (14 Biology, 2 Engineering) during summer and academic term research experiences lasting between 6 and 18 months, with positions funded through internal UAF awards.

Undergraduates include

- 5 Alaska Native (BS), now in Graduate programs or working in healthcare delivery in Fairbanks Alaska,
- 5 BS Biology students, now enrolled in Medical school.
- 4 BS Biology Students, now enrolled in Graduate degree programs

Other:

Mentored 4 high school A/P Biology students, conducting projects for Alaska State High School Science Symposium.

Current Undergraduate Advisees:

24 current undergraduate advisees pursuing Bachelors Degrees at UAF (Pre-Med Focus)

Professional, Creative Activities:

- Thermal Portraits: a collaborative Arts & Sciences project.* Jennifer Moss, Kriya Dunlap and Michael B. Harris. A reflection of body form from representations of body heat distribution. University of Alaska Fairbanks, Sponsored by the UAF Collaborative Arts Council. February 2015.
- UAF Research Showcase: Podlutzky AJ, Ferrante A and Harris MB. *The Biology of Vampires*. UAF Office of Undergraduate Research and Scholarly Activity. October 29, 2014.
- Invited Presentation. *Zombies: Physiology of the Un-Dead*. Keynote Address, 10th Annual Undergraduate Research & Discovery Symposium, University of Alaska Anchorage Honors College. April 17, 2014.
- UAF Research Showcase: Podlutzky AJ and Harris MB. *Zombies, Cancer and DNA: Genes of the Living Dead*. UAF Office of Undergraduate Research and Scholarly Activity. October 30, 2013. <https://uaf-echosystem.uaf.edu:8443/ess/echo/presentation/95e2da73-9016-4098-bf67-1ce05b4658cd/media.m4v?downloadOnly=true>
- UAF Research Showcase: Harris MB, *The Physiology of Zombies*. UAF Office of Undergraduate Research and Scholarly Activity. October 31, 2012.
- Phys.Org. *Scientists identify likely origins of vertebrate air breathing*. October 16, 2012. <http://phys.org/news/2012-10-scientists-vertebrate-air.html>.
- Science Daily. *Scientists identify likely origins of vertebrate air breathing*. October 16, 2012. <http://www.sciencedaily.com/releases/2012/10/121016141701.htm>.
- IAB News Release. *Scientists identify likely origins of vertebrate air breathing*. October 15, 2012. http://www.iab.uaf.edu/news/news_release_by_id.php?release_id=104.
- Profile, *Zombie Physiology – for real?* UAF Cornerstone. <http://uafcornerstone.net/around-campus-4/>.
- Profile, *UAF Professor uses Zombies as a teaching tool*. Suzanna Caldwell, Fairbanks Daily News-Miner October 25, 26, 2012. http://www.newsminer.com/news/local_news/uaf-professor-uses-zombies-as-a-teaching-tool/article_97c9c382-134e-5c7d-87c4-8e95fdbbbb82.html.
- Blog Post, *Zombie Hibernation*. Zombie Research Society ZRS Blog (Archive), February 21, 2011. <http://zombieresearchsociety.com/archives/7264>.
- Profile, *The thrill of apocalyptic education*. Kelsey Gobroski, UAF Sun Star October 25, 2010. <http://www.uafsunstar.com/sounds-and-science-of-the-undead-the-thrill-of-apocalyptic-education/>.
- Serialized Radio Play; *Dead Air*. Production content and character portrayal “Dr. Ricci”. KSUA Radio, Marcus Moore and Matt Schantzen Productions (2010 season).
- Radio interview; *Dead Air: Zombie Physiology*. KSUA Radio, Marcus Moore, October 29, 2009.
- Radio interview; *Getting Ready for Winter*. CBC North Midday Cafe, Russ Knutson. September 24, 2009.
- Radio interview KTOO 104.3 FM Radio (NPR), Juneau, AK. April 2, 2009.
- Public Seminar, *Sudden Infant Death Syndrome: Tragedy, Mystery and Optimism*. Science for Alaska (Public Seminar), Juneau, AK. April 2, 2009.
- Public Seminar, *Sudden Infant Death Syndrome: Tragedy, Mystery and Optimism*. Science for Alaska (Public seminar), Anchorage, AK. March 23, 2009.
- Television interview; Fairbanks Focus Alaska View (KTVF CH11). Charles Fedullo, March 19, 2009.
- Radio interview; Charlie O’Toole, AM 970, Clear Channel syndicated, February 11, 2009.
- Radio interview; KIAK FM 102.5, Fairbanks AK. February 11, 2009.
- Profile, *UAF Scientist works to defeat silent killer of infants*. Christi Hang, Fairbanks Daily News-Miner January 26, 2009.

SOCIAL MEDIA: Facebook Journal of Physiology and Neuroscience.

Co-Founder, Editor, Moderator (est. 04/23/2012). <https://www.facebook.com/WikiScienceJoPysiolNeurosci>.

RESEARCHGATE: https://www.researchgate.net/profile/Michael_Harris17.

Publications: 57; Downloads: 727; Views: 3,523, Citations: 908; Impact 130.87

LINKEDIN: www.linkedin.com/in/MBHarrisatUAF

TRELLIS: (pending) <https://www.trellis-science.com/#/site-home>

GOOGLE SCHOLAR CITATION METRICS: (see: <http://scholar.google.com/citations?user=-tvC8ZgAAAAJ&hl=en>)

Citations: 1330 (all); 594 (since 2010) **H-index:** 21 (13 since 2010) **I10-index:** 33 (16 since 2010)

ISI CITATION SCORES: (See: <http://www.researcherid.com/rid/A-3809-2010>)

Sum of Citations: 913 Citations per item: 15.22 **H-Index:** 17

PEER-REVIEWED PUBLICATIONS:

<http://www.ncbi.nlm.nih.gov/sites/myncbi/collections/public/1N9CDcheChWpckgoNGTYf3J5O/?sort=date&direction=ascending>

47. Corcoran, AE, Richerson, GB, Harris, MB. (2015). Functional link between the hypocretin and serotonin systems in the neural control of breathing and central chemosensitivity. *J. Neurophysiol.* In Press.
46. Massey CA, Iceman KE, Johansen SL, Wu Y, Harris MB, Richerson GB (2015). Isoflurane abolishes spontaneous firing of serotonin neurons and masks their pH/CO₂ chemosensitivity. *J. Neurophysiol* Feb 18;jn.01073.2014. doi: 10.1152/jn.01073.2014
45. Iceman KE, Corcoran AE, Taylor BE, Harris MB. (2014). CO₂-inhibited neurons in the medullary raphe are GABAergic. *Respir. Physiol. Neurobiol.* 2014 Nov 1;203C:28-34 doi: 10.1016/j.resp.2014.07.016.
44. Mosher BP, Taylor BE, Harris MB. (2014). Intermittent hypercapnia enhances ventilatory CO₂/pH chemosensitivity to overcome serotonergic dysfunction. *Respir Physiol Neurobiol.* 2014 Aug 15;200:33-9. doi: 10.1016/j.resp.2014.05.005. Epub 2014 May 27.
43. Christian SL, Roe T, Rasley BT, Moore J, Harris MB, Drew KL (2014). Habituation of Arctic ground squirrels (*Urocitellus paryii*) to handling and movement during torpor to prevent artificial arousal. *Front. Physiol.* doi: 10.3389/fphys.2014.00174
42. Corcoran, AE, Commons, KG, Smith JC, Harris, MB, Richerson, GB. (2014). Dual effects of 5-HT_{1a} receptor activation on breathing in neonatal mice. *J Neurosci.* 34(1):51-9.
41. Iceman KE, Harris MB. (2013). A group of non-serotonergic cells is CO₂-stimulated in the medullary raphe. *Neuroscience.* Feb 14;259:203-13. PMID: 24333211
40. Iceman KE, Richerson GB, Harris MB. (2013). Medullary serotonin neurons are CO₂-sensitive in situ. *J Neurophysiol.* 110(11): 2536-44.
39. Corcoran AE, Richerson GB, Harris MB. (2013). Serotonergic mechanisms are necessary for central respiratory chemoresponsiveness in situ. *Respir Physiol Neurobiol.* 186(2):214-20.
38. Harris MB. (2012) Rat homologues to the human post-neonatal period: models for vulnerability to the sudden infant death syndrome. *Pediatr Pulmonol.* 47(7):729-30.
37. Corcoran, AE, Richerson, GB, and Harris, MB. (2010). Modulation of respiratory activity by hypocretin-1 (orexin A) *in situ* and *in vitro*. *Adv Exp Med Biol* 669: 109-13.
36. Davies BL, Brundage CM, Harris MB, Taylor BE. (2009). Lung respiratory rhythm and pattern generation in the bullfrog: role of neurokinin-1 and mu-opioid receptors. *J Comp Physiol B* 79:579-92.

35. Wilson RJ, Taylor BE, Harris MB. (2009) Evolution of vertebrate respiratory neural control. In: *Encyclopedia of Neuroscience (4th Ed.)*, Adelman G and Smith BH (Eds). Elsevier Ltd., Pp 67-75.
34. Hodges MR, Tattersall GJ, Harris MB, McEvoy SD, Richerson DN, Deneris ES, Johnson RL, Chen ZF, Richerson GB (2008). Defects in breathing and thermoregulation in mice with near-complete absence of central serotonin neurons. *J Neurosci* 28:2495-505.
33. Duffy L, Bult-Ito A, Castillo M, Drew K, Harris M, Kuhn T, Ma Y, Schulte M, Taylor B, van Muelken M. (2007) Arctic Peoples and Beyond: research opportunities in neuroscience and behaviour. *Int J Circumpolar Health* 66:264-75.
32. Toppin VL, Harris MB, Kober AM, Leiter JC, St.-John WM. (2007) Persistence of Eupnea and Gasping Following Blockade of Both Serotonin Type 1 and 2 Receptors in the *In Situ* Juvenile Rat Preparation. *J Appl Physiol* 103:220-7.
31. Hoffman JM, Brown JW, Sirlin EA, Benoit AM, Gill WG, Harris MB, Darnall RA. (2007). Activation of 5-HT_{1A} receptors in the paraventricular nucleus decreases shivering but not peripheral vasoconstriction during cooling in the conscious piglet. *Am J Physiol Regul Integr Comp Physiol* 293:R518-27.
30. Drew KL, Buck CL, Barnes BM, Christian SL, Rasley BT, Harris MB. (2007) Central nervous system regulation of mammalian hibernation: implications for metabolic suppression and ischemia tolerance. *J Neurochem* 102:1713-26.
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* 152:51-60.
28. Darnall RA, Harris MB, Gill WH, Hoffman JM, Brown JW, Niblock MM (2005) Inhibition of serotonergic neurons in the nucleus paraventricularis lateralis fragments sleep and decreases REM in the piglet: Implications for the Sudden Infant Death Syndrome. *J Neurosci* 25:8322-32.
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* 289:R450-R455.
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* 142:125-9.
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*. Barnes BM and Carey HV (Eds.). Biological Papers of Alaska, number 27. Institute of Arctic Biology, UAF, Alaska, USA. Pp 41-50.
24. Drew KL, Harris MB, LaManna JC, Smith MA, Zhu XW, Ma YL (2004) Hypoxia tolerance in mammalian heterotherms. *J Exp Biol* 207:3155-62.
23. Taylor BE, Harris MB, Leiter JC, Gdovin MJ (2003) Ontogeny of central CO₂ chemoreception: chemosensitivity in the ventral medulla of developing bullfrogs. *Am J Physiol Regul Integr Comp Physiol* 285:R1461-72.
22. Harris MB, Milsom WK (2003) Apneusis follows disruption of NMDA-type glutamate receptors in vagotomized ground squirrels. *Respir Physiol Neurobiol* 134: 191-207.
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:R215-21.
20. Taylor BE, Harris MB, Coates EL, Gdovin MJ, Leiter JC (2003) Central CO₂ chemoreception in developing bullfrogs: anomalous response to acetazolamide. *J Appl Physiol* 94:1204-12.
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* 295:37-46.
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:R417-28.
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)* 540:557-70.

16. Milsom WK, Zimmer MB, Harris MB (2001) Vagal control of cardiorespiratory function in hibernation. *Exp Physiol* 86(6):791-6.
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* 129:37-47.
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.
13. Harris MB, Milsom WK (2001) Vagal feedback is essential for breathing in ground squirrels. *Respir Physiol* 125:199-212.
12. Harris MB, Milsom WK (2001) The influence of NMDA receptor-mediated processes on breathing pattern in ground squirrels. *Respir Physiol* 125:181-197.
11. Wilson RJA, Harris MB, Remmers JE, Perry SF (2000) Evolution of air-breathing and central CO₂/H⁺ sensitivity: New insights from an old fish. *J Exp Biol* 203:3505-3512.
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.
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.
8. Milsom WK, Zimmer MB, Harris MB (1999) Regulation of cardiac rhythm in hibernation. *Comp Biochem Physiol A Mol Integr Physiol* 124: 383-391.
7. 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.
6. Milsom WK, Harris MB, Reid SG (1997) Do descending excitatory and inhibitory inputs interact to produce episodic breathing? *Respir Physiol* 110:307-317.
5. 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.
4. 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 Reg Integr Comp Physiol* 271:R1017-24.
3. Harris MB, Milsom WK (1995) Parasympathetic influence on heart rate in euthermic and hibernating ground squirrels. *J Exp Biol* 198:931-937.
2. Harris MB, Milsom WK (1994) The ventilatory response to hypercapnia in hibernating golden-mantled ground squirrels. *Physiol Zool* 67:739-755.
1. 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.

MANUSCRIPTS IN REVIEW:

Johansen SL, Iceman KE, Iceman CR, Taylor BE, and Harris MB. Isoflurane concentration-dependently inhibits medullary raphé 5-HT neurons in situ.

Hueffer K., Khatri, S, Rideout S., Harris M.B., Schulte M. Rabies virus derived peptides specifically inhibit central neuroreceptors and alter animal behaviour.

Hoffman M, Taylor BE, Harris MB. Turn (on) your head and “cough”: the evolution of lung breathing from lungless vertebrates.

ABSTRACTS:

86. Hueffer K, Rideout S, Harris M, Schulte M (2014). Rabies derived peptides interact with neuronal nicotinic receptors and alter behavior in mice. 25th Rabies in the Americas Conference.
85. Reed M, Iceman K, Harris M, and Taylor B, (2014). Potential bullfrog homologue to the chemosensitive mammalian retrotrapezoid nucleus. FASEB J April 1, 2014 28:1092.4
84. Harris MB, Mosher B., Guarnieri L., Taylor BE, Fuller D, Baekey D (2013). Inspiratory intercostal recruitment in rats in situ. 656.13. Neuroscience Meeting Planner. San Diego CA: Society for Neuroscience, 2013. Online.
83. Johansen SL, Iceman KE, Richerson GB, Harris MB (2013). The response of CO₂-inhibited neurons to isoflurane: Evidence for a heterogeneous population of medullary raphe GABA neurons. 656.12. Neuroscience Meeting Planner. San Diego CA: Society for Neuroscience, 2013. Online.
82. Mosher B, Taylor B, Harris MB (2013). Intermittent hypercapnia enhances ventilatory CO₂/pH chemosensitivity, and overcomes serotonergic dysfunction at various developmental periods. 656.11. 2013. Neuroscience Meeting Planner. San Diego CA: Society for Neuroscience, 2013. Online.
81. Ellison A, Hoffman M, Taylor B, Harris MB (2013). Neuroscience in the North: Rural outreach and distance education in Alaska using the Backyard Brains platform. 23.12SA. 2013. Neuroscience Meeting Planner. San Diego CA: Society for Neuroscience, 2013. Online.
80. Mosher BP, Taylor BE, Harris MB (2013). Intermittent hypercapnia-induced GABAergic plasticity sufficiently enhances ventilatory CO₂/pH chemosensitivity to overcome serotonergic dysfunction. FASEB J April 9, 2013 27:1137.21
79. Iceman KE, Harris MB (2013). Medullary "raphe chemosensory amplifier" (RCA) interneurons are mediated by serotonin/substance P and GABA-synthesizing neurons in situ. FASEB J April 9, 2013 27:1137.22
78. St. Laurent JL, Iceman KE, Harris MB (2013). Consequences of a Maternal Vitamin B6 Deficiency on Hypercapnic Response in Rat Pups. FASEB J April 9, 2013 27:1137.19
77. Hoffman M, Taylor BE, Harris MB (2013). The origin of air breathing in vertebrates: turn (on) your head and cough FASEB J April 9, 2013 27:1137.20
76. Johansen SL, Iceman KE, Richerson GB, Harris MB (2013) Isoflurane stimulates firing frequency and masks chemosensitivity of CO₂-inhibited GABAergic neurons in situ. FASEB J April 9, 2013 27:1137.10
75. Hoffman M, Taylor BE and Harris MB (2012). Lung control from lungless vertebrates. Program No. 796.04. 2012 Neuroscience Meeting Planner. New Orleans, LA: Society for Neuroscience, 2012. Online.
74. Mosher B, Harris MB (2012). Intermittent hypercapnia enhances ventilatory CO₂/PH chemosensitivity to overcome serotonergic dysfunction. Program No. 897.06. 2012 Neuroscience Meeting Planner. New Orleans, LA: Society for Neuroscience, 2012. Online.
73. Harris MB, Iceman KE, Dick TE and Baekey DM. (2012) Probing a local chemosensory network in the medullary raphe. Program No. 897.07. 2012 Neuroscience Meeting Planner. New Orleans, LA: Society for Neuroscience, 2012. Online.
72. Johansen SL, Iceman KE, Richerson GB and Harris MB (2012). Influence of isoflurane on CO₂ sensitive and insensitive raphe neurons. Program No. 897.08. 2012 Neuroscience Meeting Planner. New Orleans, LA: Society for Neuroscience, 2012. Online.
71. Rideout SA, Harris MB, Hueffer K, Schulte MK (2012) Interaction of rabies virus glycoprotein fragments with the acetylcholine binding protein. Program No. 328.17. 2012 Neuroscience Meeting Planner. New Orleans, LA: Society for Neuroscience, 2012. Online.
70. Iceman KE, Richerson GB, and Harris MB (2012). GABAergic neurons in the medullary raphe possess network independent chemosensitivity in situ. FASEB J March 29, 2012 26:894.13
69. Mosher BP, Iceman KE, and Harris MB, (2012) Post natal impact of maternal tryptophan deficiency on central CO₂/PH chemosensitivity. FASEB J March 29, 2012 26:1b827
68. Harris MB. (2012). Nontraditional case-based instruction in physiology: Deconstructing the cryptophysiology of

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