

BIOGRAPHICAL SKETCH

Alan J. Nighorn
Professor and Dept Head

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A. Preparation

University of Wisconsin-Madison	BS	1986	Biochemistry
Baylor College of Medicine, Houston, TX	Ph.D.	1993	Cell Biology

B. Appointments

1987-91 Research Assistant, Dept. of Cell Biology, Baylor College of Medicine, Houston, TX
1991-93 Research Assistant, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY
1993-94 Research Associate, ARLDN, University of Arizona
1994-1997 NIH Postdoctoral Fellow with Dr. John Hildebrand and Dr. David Morton . ARLDN,
University of Arizona, Tucson, AZ
1997-1999 Research Associate with Dr. John Hildebrand and Dr. David Morton. ARLDN, University
of Arizona. Tucson, AZ
1999 - 2005 Assistant Professor, ARL Division of Neurobiology, University of Arizona, Tucson, AZ
2000 - 2005 Assistant Professor, Molecular and Cellular Biology Dept., Univ. of Arizona, Tucson, AZ
2005 - 2011 Associate Professor, ARL Division of Neurobiology, University of Arizona, Tucson, AZ
2005 - 2011 Associate Professor, Molecular and Cellular Biology Dept., Univ. of Arizona, Tucson, AZ
2011 – present Professor and Associate Head, Dept of Neuroscience, Univ. of Arizona, Tucson, AZ
2011 – present Professor, Molecular and Cellular Biology Dept., Univ. of Arizona, Tucson, AZ
2014- present Professor and Department Head, Dept of Neuroscience, Univ of Arizona, Tucson AZ

C. Selected Peer-Reviewed Publications. (17 out of 36 total)

Kaneko, M and **Nighorn A.** (2003) Inter-axonal Eph-ephrin signaling may mediate sorting of olfactory sensory axons in *Manduca Sexta*. *J. Neuroscience*. **23**:11523-38

Collmann, C., Carlsson, M., Hansson, B. and **Nighorn, A.** (2004) Odorant-evoked nitric oxide signals in the antennal lobe of *Manduca sexta*. *J. Neuroscience* 24: 6070-6077.

Dacks, A.M., Dacks, J.B., Christensen, T.C., and **Nighorn, A.J.** (2006) The cloning of one putative octopamine receptor and two putative serotonin receptors from the tobacco hawkmoth, *Manduca sexta*. *Insect Biochem Mol Biol*. 2006 Sep;36(9):741-7.

Vidovic, M., **Nighorn, A.**, Koblar, S., and Maleszka, R. (2007) Eph receptor and ephrin signaling in developing and adult brain of the honeybee (*Apis mellifera*). *J Neurobiol*. February 67(2) : 233-251

Coate, T.M., Swanson, T.L., Proctor, T.M., **Nighorn, A.J.**, and Copenhaver P.F. (2007) Eph receptor expression defines midline boundaries for ephrin-positive migratory neurons in the enteric nervous system of *Manduca sexta*. *J. Comp. Neurol.* 502(2):175-91

Settembrini, B., Coronel, M., Nowicki, S., **Nighorn, A.**, and Villar, M. (2007) Distribution and characterization of nitric oxide synthase in the nervous system of *Tritoma infestans* (Insecta: Heteroptera). *Cell Tis. Res.* 328(2):421-30

Wilson, C., Christensen, T.A., and **Nighorn, A.** (2007) Inhibition of nitric oxide and soluble guanylyl cyclase signaling affects olfactory neuron activity in the moth, *Manduca sexta*. *J Comp Physiol A* 193(7):715-28.

Hu X, Murata LB, Weichsel A, Brailey JL, Roberts SA, **Nighorn A**, Montfort WR. (2008) Allosteric in recombinant soluble guanylyl cyclase from *Manduca sexta*. *J Biol Chem.* 283(30):20968-77

Dacks AM, Green DS, Root CM, **Nighorn AJ**, Wang JW. (2009). Serotonin modulates olfactory processing in the antennal lobe of *Drosophila*. *The Journal of Neurogenetics.* 23(4):366-77.

Dacks, A., Reisenman, C., Paulk, A. and **Nighorn, A.** (2010) Histamine-immunoreactive local neurons in the antennal lobes of the Hymenoptera. *J. Comp. Neurol.* 518(15):2917-33.

Dacks, A. and **Nighorn, A.** (2011) The Organization of the Antennal Lobe Correlates Not Only with Phylogenetic Relationship, But Also Life History: A Basal Hymenopteran as Exemplar. *Chemical Senses.* Jan;36(2):209-20

Higgins, M., Miller, M., and Nighorn, A. (2012). Nitric oxide has differential effects on currents in different subsets of *Manduca sexta* antennal lobe neurons *PLOS One.* 2012;7(8):e42556. doi: 10.1371/journal.pone.0042556

Dacks A.M., Riffell J.A., Martin J.P., Gage S.L., and **Nighorn A.J.** (2012) Olfactory modulation by dopamine in the context of aversive learning. *J Neurophysiol.* 108(2):539-50

Gage SL, Daly KC, **Nighorn A** (2013) Nitric oxide affects short-term olfactory memory in the antennal lobe of *Manduca sexta*. *J Exp Biol.* 2013 Sep 1;216(Pt 17):3294-300. doi: 10.1242/jeb.086694.

Dacks AM, Reale V, Pi Y, Zhang W, Dacks JB, **Nighorn AJ**, Evans PD. (2013) A characterization of the *Manduca sexta* serotonin receptors in the context of olfactory neuromodulation. *PLoS One.* 2013 Jul 29;8(7):e69422. doi: 10.1371/journal.pone.0069422.

Gage SL, Daly KC, **Nighorn A** (2013) Nitric oxide affects short-term olfactory memory in the antennal lobe of *Manduca sexta*. *J Exp Biol.* 2013 Sep 1;216(Pt 17):3294-300. doi: 10.1242/jeb.086694.

Gage SL and **Nighorn A.** (2014) The role of nitric oxide in memory is modulated by diurnal time. *Front Syst Neurosci* Apr;8:59

D. Research Support

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=Xybh]Z]UWh]cb'UbX'7\ufUWhYf]nUh]cb'cZ' ; iUbm'm'7mW'UgY' =gcZcf agÁ

Role: Principal Investigator: Alan Nighorn, Ph.D.

Agency: NSF/IBN Grant # 9604536 Period: 3/1/97 – 2/29/00

The major goal of this project was to clone soluble guanylyl cyclase and nitric oxide synthase from *Tæ}á ~ & æ Á • ^ ç æ* and examine their expression patterns in the adult and developing olfactory system using in-situ hybridization.

Aminergic Modulation Underlying Olfactory Plasticity

Role: Principal Investigator

Agency: National Institutes of Health: National Institute on Deafness and other Communication Disorders

Type: Individual R01 (DC005652-05)

Period : 4/1/03 – 2/29/08

The main goal of this project is understanding olfactory function and learning.

Neural Development: Intercellular and Humoral Control

Role: CO-principal Investigator

Agency: National Institutes of Health: National Institute on Neurological Disorders and Stroke

Type: Program project grant (2P01 NS28495)

Period: 7/1/01 – 6/30/06

I am a co-PI on project 5 (Development of Sexually Dimorphic Olfactory Glomeruli), one goal of which is the molecular characterization of the development of the MGC, a male specific glomerulus in the antennal lobe of *Manduca sexta*.