

BIOGRAPHICAL SKETCH

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NAME Zhao, Haiqing	POSITION TITLE Associate Professor		
eRA COMMONS USER NAME hzhao5			
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
Peking University, China	BS	1985	Physiology
Peking University, China	MS	1988	Physiology
Yale university	Ph.D	1998	Neuroscience

A. Personal Statement

Not required for a Ruth L. Kirschstein National Research Service Award (NRSA) application

B. Positions and Honors.**Professional Experience**

1988 – 1990 Scientist, Tianjin Leeco Biotechnological, Inc., Tianjin, China
 1998 – 2002 Postdoctoral Fellow, Howard Hughes Medical Institute, Johns Hopkins Medical School, Baltimore, MD
 2002 – 2008 Assistant Professor, Department of Biology, Johns Hopkins University, Baltimore, MD
 2008 – present Associate Professor Department of Biology, Johns Hopkins University, Baltimore, MD

Honors

1991 Award for Advancement of Science and Technology, by the State Education Commission, The people's republic of China. The second rank.
 1991 – 1995 Yale University Fellowship
 1994 The Don Tucker Memorial Award, by Association for Chemoreception Sciences.

C. Selected Peer-Reviewed Publications (selected from 17 peer reviewed publications)**Most relevant to the current application (Authors in Bold are CMDB students)**

1. Yijun Song, **Katherine D. Cygnar**, Botir Sagdullaev, Matthew Valley, **Sarah Hirsh**, **Aaron Stephan**, Johannes Reiser, and Haiqing Zhao. Olfactory CNG channel desensitization by Ca^{2+} /CaM via the B1b subunit affects response termination but not sensitivity to recurring stimulation. *Neuron* 2008. 58(3):374-86. PMC2587172.
2. **Tiara Booker-Dwyer**, **Sarah Hirsh**, and Haiqing Zhao. A unique cell population in the mouse olfactory bulb displays nuclear β -catenin signaling during development and olfactory sensory neuron regeneration. *Developmental Neurobiology* 2008. 68(7):859-69.
3. Ali Güler, **Jennifer Ecker**, Gurprit Lall, Shafiqul Haq, **Cara Altimus**, Hsi-Wen Liao, Alun Barnard, Hugh Cahill, Tudor Badea, Haiqing Zhao, Mark Hankins, David Berson, Robert Lucas, King-Wai Yau, and Samer Hattar. Melanopsin cells provide the principal conduit for rod/cone contribution to non-image forming vision. *Nature* 2008. 453(7191):102-5. NIHMS194680
4. **Katherine D. Cygnar** and Haiqing Zhao. Phosphodiesterase 1C is dispensable for rapid response termination of olfactory sensory neurons. *Nature Neuroscience* 2009. 12(4):454-62. PMC2712288.

5. **Aaron B. Stephan**, Eleen Y. Shum, **Sarah Hirsh**, **Katherine D. Cygnar**, Johannes Reisert, and Haiqing Zhao. ANO2 is the ciliary calcium-activated chloride channel that may mediate olfactory amplification. Proc Natl Acad Sci USA 2009. 106(28):11776-81. PMC2702256.

Additional publications of importance to the field (olfactory sense)

6. Haiqing Zhao, Stuart Firestein, and Charles A. Greer. NADPH-diaphorase localization in the olfactory system. NeuroReport 1994. 6:149-52.
7. Haiqing Zhao, Joji M. Otaki, and Stuart Firestein. Adenovirus-mediated gene transfer in olfactory neurons in vivo. Journal of Neurobiology 1996. 30(4):521-30.
8. Haiqing Zhao, Lidija Ivic, Joji M. Otaki, Mitsuhiro Hashimoto, Katsuhiko Mikoshoba, and Stuart Firestein. Functional expression of a mammalian odorant receptor. Science 1998. 279:237-42.
9. Haiqing Zhao and Randall Reed. X inactivation of the OCNC1 channel gene reveals a role for activity-dependent competition in the olfactory system. Cell 2001. 104:651-60.
10. Katherine D. Cygnar, **Aaron B. Stephan** and Haiqing Zhao Analyzing responses of mouse olfactory sensory neurons using the air-phase electroolfactogram recording. J Vis Exp. 2010 (37). pii: 1850. doi: 10.3791/1850.

D. Research Support.

Ongoing

1R01DC009946-01 Dougherty (Michigan State University, PI) 08/2008 – 07/2010
NIH/NIDCD
CRCNS: Signal Transduction in Mouse Olfactory Receptor Neurons
This project will develop a mathematical model of olfactory transduction and test it using a number of genetically modified mice.
Role: Co-PI

1R01DC007395-01A2 Zhao (PI) 02/2008 – 01/2013
NIH/NIDCD
Regulation of olfactory signal transduction
The major goal of this project is to determine the role of transduction components using genetic and physiological techniques.
Role: PI

Completed

Grant Reference Number: 2006-08-46 Zhao (PI) 09/2006 – 08/2009
Whitehall Foundation
Olfactory adaptation through regulation of CNG ion channels
The major goal of the project is to examine the physiological significance of Ca²⁺/calmodulin-mediated CNG channel inhibition to olfactory adaptation.
Role: PI

1 R03 DC006178-01A1 Zhao (PI) 01/2004 – 12/2006
NIH/NIDCD
Functional Role of Odorant Receptor Phosphorylation
The major goal of the project is to understand how olfactory signal transduction is regulated at the level of the odorant receptor.
Role: PI