



DANIEL YAEGER

Oregon Health & Science University, Department of Physiology & Pharmacology

Degrees:

BA in Exercise Science, Willamette University, Salem, OR

Scholar Donors:

OHSU Basic Science Chairs.

About the Scholar:

Dan is investigating the microcircuitry of the brain, focusing on the cochlear nucleus, a part of the brain involved in hearing. He has identified a novel inhibitory feedback circuit that controls the transmission of a specific kind of information in this brain region. The feedback inhibitory circuit shuts off synaptic transmission after synapses in the cochlear nucleus have fired a few times at high frequency, thus limiting the amount of information that can be transmitted by these synapses. He has also identified neuromodulators that regulate the timing and magnitude of feedback inhibition. Dan enjoys running and Tae Kwon Do.

Benefits to Society:

Dan's research may have implications for the treatment of tinnitus, a phantom ringing sensation that typically occurs after hearing loss. Tinnitus is associated with hyperactivity of the cochlear nucleus, and Dan's research may suggest ways to down-regulate activity in this region. More broadly speaking, feedback inhibition is a general operating principle in brain circuits, and disruption in feedback inhibition is associated with brain dysfunction. Dan's research will provide a very detailed description of the basic principles of feedback inhibition circuitry, and therefore add to our understanding of how brain circuits function in health and disease.

Awards and Honors:

NIH F31 Predoctoral Fellowship
Vertex Pharmaceuticals Award
NIH T32 PMCB Training Grant

Publications and Posters:

Yaeger D, & Trussell, LO. Physiology of Golgi cell-granule cell synapses in the cochlear nucleus. Poster presentation at the 36th Association for Research in Otolaryngology Midwinter Meeting, February 2013, in Baltimore, MD.

Yaeger D, & Trussell, LO. Dual cholinergic actions on transmission in auditory granule cells. Poster presentation at Neuroscience 2012, October 2012, in New Orleans, LO.

Williams C, Wenyan C, Lee CH, Yaeger D, Vyleta NP, & Smith SM. 2012. Coactivation of multiple tightly coupled calcium channels triggers spontaneous release of GABA. *Nat Neurosci* 15(9): 1195 – 7.

Yanping Y, Yaeger D, Owen LJ, Escobedo JO, Wang J, Singer JD, Strongin RM, & Abramson JJ. 2012. Designing calcium release channel inhibitors with enhanced electron donor properties: stabilizing the closed state of RyR1. *Mol Pharm* 81(1): 53 – 62.

McFarland TP, Sleiman NH, Yaeger D, & Cala SE. 2011. The cytosolic protein kinase CK2 phosphorylates cardiac calsequestrin in intact cells. *Mol Cell Biochem* 353(1-2): 81 – 91.