

# Diversity and Context in Olfaction

## Dr. Ryan Dalton

Dr. Ryan Dalton received his B.S. in Biology at the University of Oregon (2007) and his Ph.D. in Neuroscience at UCSF (2015). His research aims to understand how animals detect and encode environmental information as well as how modulation of peripheral neurons can impact context on these detection and encoding events. His early postdoctoral work uncovered fundamental mechanisms of olfactory receptor gene regulation. This work has since been generalized to the vomeronasal and somatosensory systems. His current work is aimed at understanding how mice infected with the parasite *Toxoplasma gondii* lose their innate aversion to cat odors, as well as how neuroimmune interactions contribute to chronic itch pathogenesis. In his independent group he plans to research sensory neuronal diversification and mechanisms of peripheral neuronal modulation during disease states ranging from psoriasis to neurodegeneration.



## Abstract

The senses endow animals with the ability to detect and discriminate between mates, nutrition sources, and threats. How a given set of environment stimuli is encoded into a sensory representation is determined both by the diversity of cells making up a sensory tissue, and by the context in which the stimuli are sensed. Towards understanding cell diversity, Dr. Dalton studies how chemoreceptor proteins interact with stress pathways to control the gene expression program of the cell. To understand how context changes sensory representations, Dr. Dalton has developed a novel model of rodent behavioral manipulation by the parasite *Toxoplasma gondii*.

**Date: Thursday  
February 8, 2018**

**4:00PM**

**Location:  
SE1 270K**

**Molecular Cell Biology  
Seminar Series**