

# Sensing Light for Sight and Physiological Regulation

**October 17**

**Tuesday, 12:30 pm**

**Billings Building—Rosedale Room  
and Zoom**

**SPEAKER:**



**Michael Tri Hoang Do, Ph.D.**

Associate Professor of Neurology  
Harvard Medical School  
Boston Children's Hospital  
Boston, MA

**Host: Glen Prusky, Ph.D.**

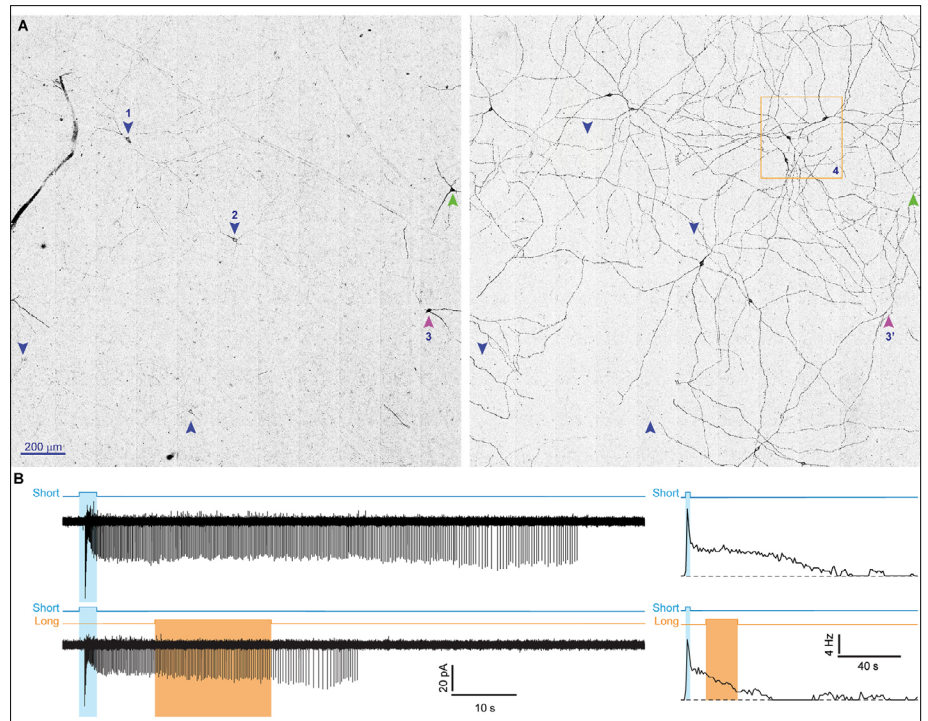
For more information contact

**Darlene White**

daw9085@med.cornell.edu

## Abstract

Mammals sense light for sight as well as for “non-image” visual functions that include the regulation of circadian rhythms, sleep, and mood. Non-image vision relies on neurons of the retina that express melanopsin, a light-activated G protein coupled receptor. These intrinsically photosensitive retinal ganglion cells send visual information directly to more than thirty brain regions. This seminar concerns how melanopsin and the intrinsically photosensitive retinal ganglion cells are tailored to non-image vision, examining specializations at several scales of biological organization in the nocturnal rodent and diurnal primate.



## Publications

1. Milner ES and Do MTH. A population representation of absolute light intensity in the mammalian retina. *Cell*. 2017, 171:865-876. PMC6647834. Article.
2. Do MTH (2019) Melanopsin and the intrinsically photosensitive retinal ganglion cells: biophysics to behavior. *Neuron* 104: 205-226. PMC6944442. (Review)
3. Liu A†, Milner ES†, Peng Y-R, Blume HA, Brown MC, Bryman GS, Emanuel AJ, Morquette P, Viet N-M, Sanes JR, Gamlin PD, Do MTH. Encoding of environmental illumination by primate melanopsin neurons. *Science*. 2023, 379:376-381. Research Article. PMC ID: PMC10445534