

2016 Winner: Dr. Eduardao Zattara

Onthophagus sagittarius

Central nervous system

Late pupa
dorsal view

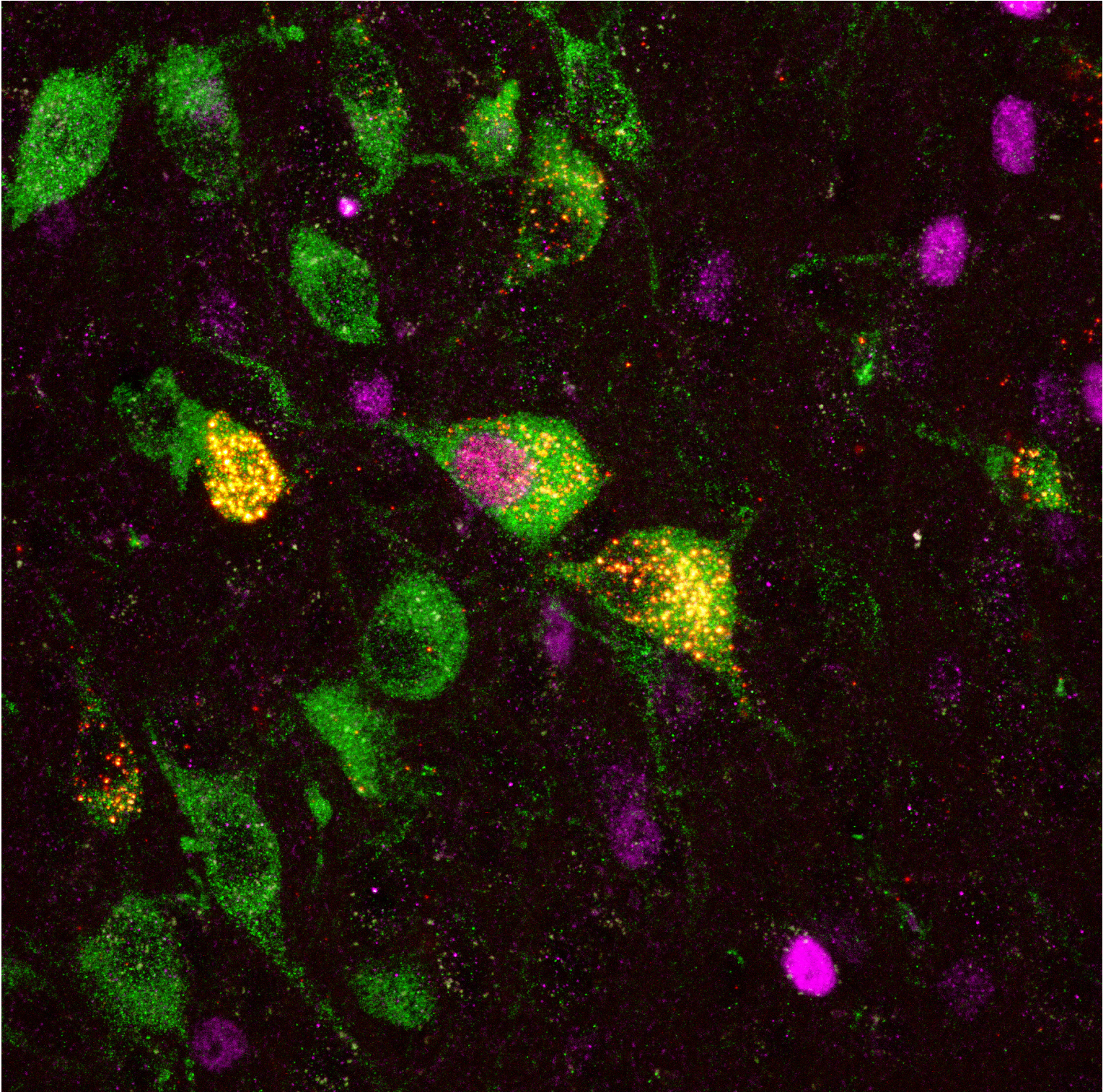


“Ready to see the light”

Technique: Dissected nervous system/eyes immunolabeled against acetylated tubulin (red channel) and serotonin (green channel), and counterstained with a DNA label (blue channel). Imaged as a whole-mount with a Zeiss LSM 880 laser scanning confocal microscope at the Light Microscopy Imaging Center core, Department of Biology, Indiana University Bloomington.

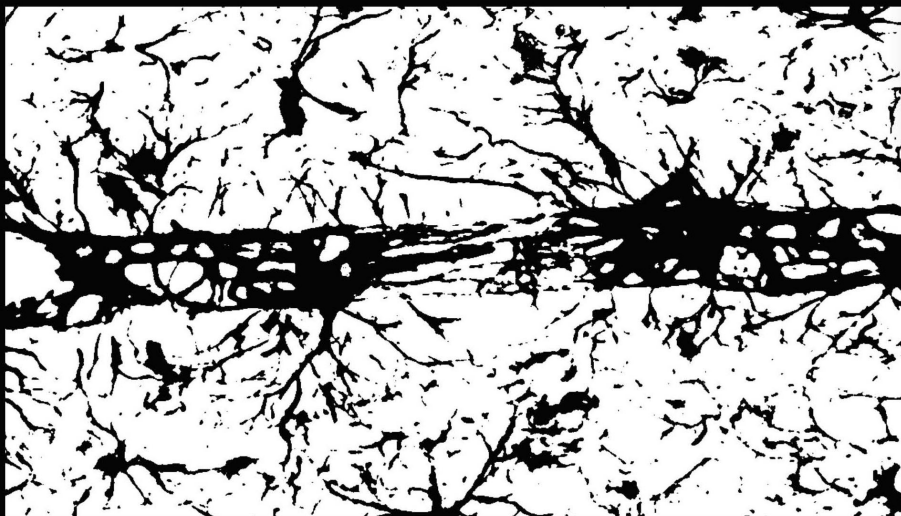
Description: Central nervous system and eye complex of the late pupa of the dung beetle *Onthophagus sagittarius*. As other species of tunneling dung beetles, females of this species lay eggs inside a custom-built dung brood-ball underground; from the egg hatches a larva which will remain inside the brood-ball and feed from it until it molts into a pupa in order to undergo metamorphosis into the adult form. During this process, a prominent optic lobes grow and extend into the forming compound eyes so that upon adult emergence, the beetle is fully ready to dig itself out of the ground and into an open world of light and color.

2018 Winner: Chris Peterson



Description: The goal of this study was to provide the anatomical substrate of serotonin release into the auditory midbrain. This photomicrograph depicts context-dependent activation (magenta) of serotonin neurons (green) that project to the inferior colliculus (red beads).

2018 Runner-up: Justn Bollinger



Description: This image depicts a blood vessel within medial prefrontal cortex (mPFC), ensheathed by astrocytes and astroglial processes (top; visualized using GFAP immunohistochemistry). Astrocytes play a critical role in maintaining blood-brain barrier integrity, regulate neuronal transmission, and have been implicated in numerous behavioral processes. Perturbations in mPFC can induce shifts in astroglial structure and function. To characterize changes in astrocyte morphology, I measure the amount of astroglial material (middle), astroglial branching, and the length of astroglial processes (bottom) present in images captured from mPFC.

2018 Runner-up: Stephanie Campos



“The Contender: A Bouquet Thornier Than Roses.”

Description: It took me six years and nearly a PhD to capture this photo, a rare site to behold. This photo shows secretions being exuded from three pores on a lizard's thigh, but secretions are usually rubbed off as lizards move around their territories. While Sceloporus lizards are perhaps best known for the vibrant technicolor belly patches they flash and vibrate to intimidate competitors, the genus is actually named for these scent-emitting pores (from the Greek “skelos” and “poros” translating to “leg pore”). My doctoral thesis investigates the evolution of chemical signal design and content in Sceloporus femoral pore secretions, demonstrates their impact on lizard space use and chemosensory behavior, and links composition to phenotypic traits of individuals.

