

Neural Circuits of Vocal Communication in the Singing Mice

October 11

Tuesday, 12:30pm

Hybrid: Rosedale Room and Zoom

For Researchers



Speaker:

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Abstract

The ability to act upon sensory information to generate a desired motor output is a fundamental component of animal behavior. During conversation, for instance, we listen to the words of another person, interpret them and modify our speech appropriately. We know little about the neural mechanisms that underlie vocal communication, especially in mammals. We have recently begun to investigate neural mechanisms of vocal communication in Alston's singing mouse (*Scotinomys teguina*) - a highly vocal neotropical rodent native to the cloud forests of Central America. *S. teguina* produce a stereotyped series of vocalizations (in the human audible range) that are often performed in concert with the songs of other individuals of the same species. This vocal coordination has similarities to 'turn taking' in human speech as well as vocal behaviors observed in nonhuman primates. In this talk, I will describe the singing behavior of these rodents and discuss a series of experiments that were performed to localize a motor cortical area that controls vocal behavior in this species. I will end by discussing our ongoing efforts to identify neural circuit differences between lab mice and singing mice using high-throughput connectomics.



1. Banerjee A#, Vallentin D#. **Convergent behavioral strategies and neural computations during vocal turn-taking across diverse species.** *Curr Opin Neurobiol.* 2022 Mar 31;73:102529. # Co-corresponding author.
2. Banerjee, A, Steven M. Phelps and Michael A. Long. 2019. **Singing Mice.** *Current Biology*, 29:6.
3. Okobi DE Jr*, Banerjee A*, Matheson AMM, Phelps SM, Long MA. **Motor cortical control of vocal interactions in neotropical singing mice.** *Science.* 2019, 263 (6430): 983-988.