

## Postdoctoral Scholar- Behavioral and Experimental Neuroscientist for Large Scale Recordings and Manipulations

We are looking for a postdoctoral scholar who will design and perform in vivo large-scale optogenetics and imaging experiments. With these systems and analysis pipelines, we would like to understand how neural circuits generate patterned activity that gives rise to complex behaviors and phenotypes in health and disease states. It is a fully-funded and three-years long postdoctoral position. Its duration can be extended further.

**Who we are:** We are highly-motivated multi-disciplinary research group focuses on cracking brain complexity in the lens of engineering, optics, photonics, behavioral and computational neuroscience for basic and translational neuroscience questions. Please visit our website, and check our lab policy and DEI ([yildirimlab.org](http://yildirimlab.org)).

**Who we are looking for:** We are looking for a curious neuroscientist who is interested in working in a team-oriented environment and interested in making new discoveries in the basic and translational neuroscience. These positions are ideal for someone with a desire to develop skillsets with large scale recordings and manipulations and dissect neural circuits responsible for animal behavior in health and disease states (both in head-fixed and freely moving mice).

**Responsibilities:** It is required to have a doctoral degree in Neuroscience, Engineering, or related disciplines, and to have expertise on one of these following topics: behavioral neuroscience, and experimental neuroscience. It is also required to have basic familiarity with coding (MATLAB, R, or Python), excellent organizational, analytical, and oral and written communication skills, ability to analyze data and present it in a format suitable for publication, self motivation, and ability to function effectively in a team-oriented environment.

**Preferences:** It is preferred to have a doctoral degree in Neuroscience, and to have an expertise in multiphoton imaging, animal behavior and surgery.

Interested candidates should submit CV, and contact information of two references to Dr. Murat Yildirim, [muraty@mit.edu](mailto:muraty@mit.edu) and/or [yildirimmurat1983@gmail.com](mailto:yildirimmurat1983@gmail.com).

### References:

1. Le, N. M., Yildirim, M., Wang, Y., Sugihara, H., Jazayeri, M., & Sur, M. (2022). Mixture of Learning Strategies Underlies Rodent Behavior in Dynamic Foraging. *bioRxiv*.
2. Yildirim, M., Delepine, C., Feldman, D., Pham, V., Chou, S., Ip, J.P.K., Nott, A., Tsai, L.H., Ming, G.L., So, P.T. and Sur, M., 2022. Label-free three-photon imaging of intact human cerebral organoids: tracking early events in brain development and deficits in Rett Syndrome. *bioRxiv*.
3. Rikhye, R. V., Yildirim, M., Hu, M., Breton-Provencher, V., & Sur, M. (2021). Reliable sensory processing in mouse visual cortex through cooperative interactions between somatostatin and parvalbumin interneurons. *Journal of Neuroscience*, *41*(42), 8761-8778.
4. Yildirim, M., Hu, M., Le, N. M., Sugihara, H., So, P. T., & Sur, M. (2020). Quantitative third-harmonic generation imaging of mouse visual cortex areas reveals correlations between functional maps and structural substrates. *Biomedical Optics Express*, *11*(10), 5650-5673.
5. Yildirim, M., Sugihara, H., So, P. T., & Sur, M. (2019). Functional imaging of visual cortical layers and subplate in awake mice with optimized three-photon microscopy. *Nature communications*, *10*(1), 1-12.