Neural circuit dynamics of working memory - BRAIN Initiative @ Princeton

The Princeton Neuroscience Institute seeks talented postdoctoral researchers for an NIH BRAIN Initiative project, starting immediately. This multi-investigator project involves studying the neural circuit dynamics underlying working memory during "accumulation-of-evidence" tasks in rodents. Our goal is to understand working memory at a brain-wide, integrative level. Brain regions to be investigated include frontal and parietal cortex, striatum, and cerebellum, with a view to achieving a whole picture of how these different brain structures work together dynamically to process, store, and transfer information to one another. The project is a collaborative effort between the research groups of David Tank (dwtank@princeton.edu), Carlos Brody (brody@princeton.edu), Sebastian Seung (sseung@princeton.edu), Sam Wang (sswang@princeton.edu), Bill Bialek (wbialek@princeton.edu), and Ilana Witten (iwitten@princeton.edu). Applicants are welcome to contact one of the investigators for more information.

Applicants should be prepared to take a collaborative approach spanning multiple laboratories, and to take advantage of the thriving and growing neuroscience community at Princeton University. Ideal candidates will have a background in neuroscience, quantitative animal behavior, mathematics, physics, statistics, or computer science. Postdoctoral researchers will individually execute projects like the following, and work with other team members to integrate their findings into a comprehensive understanding of the neural circuit dynamics of working memory.

- Two-photon calcium imaging of rodents performing working memory tasks in virtual reality.
- Optogenetic manipulations to establish causal roles of brain regions in working memory, including the neocortex, cerebellum, and basal ganglia.
- Reconstruction of neural circuits using advanced anatomical techniques, such as light microscopy, serial electron microscopy, and genetic labeling.
- Statistical analysis of large datasets from two-photon calcium imaging and serial electron microscopy and/or computational models of neural circuit dynamics.

All activities will be supported by state-of-the-art facilities in the new building of the Princeton Neuroscience Institute, including advanced two-photon imaging and electron microscopy systems

located in the Bezos Center for Neural Circuit Dynamics.

Interested applicants must apply online at http://jobs.princeton.edu (Requisition #1400724) and include a cover letter, curriculum vitae, a brief statement of research interests, and contact information for at least two references. The initial term of employment is for one year with the possibility of reappointment based on satisfactory performance and continued funding. Princeton University is an equal opportunity employer. All qualified applicants will receive consideration for employment without regard to race, color, religion, sex, national origin, disability status, protected veteran status, or any other characteristic protected by law. These positions are subject to the University's background check policy.