Postdoctoral Positions

In-vivo Optical Imaging and Microscopy of the Living Brain
Columbia University in the City of New York, New York, United States

This post-doctoral position is available for immediate start in the laboratory of Dr Elizabeth Hillman at Columbia University, New York. Our lab focuses on the development and application of advanced in-vivo optical neuroimaging and microscopy technologies to gain insight into the function and physiology of the living brain.

We are particularly interested in exploring the interrelation between blood flow and neuronal activity (neurovascular coupling) in the living intact rodent brain. Neurovascular coupling is important both because it is the basis of the fMRI BOLD signal, and also because disruption of neurovascular coupling is suspected to underlie a range of pathologies including age-related neurodegeneration and Alzheimer’s. We are exploring neurovascular coupling and metabolism in normal, diseased and developing brain. Our experiments combine multispectral in-vivo two-photon microscopy with high-speed camera imaging, volumetric microscopy and optogenetics in exposed cortex rodent models to animate the neurovascular coupling process via calcium sensitive dyes, transgenic fluorescent proteins and hemoglobin absorption dynamics.

We are seeking a post-doctoral fellow to conduct a range of experiments utilizing these imaging tools to investigate the living brain. Candidates will ideally have a neuroscience or biological background and experience / interest in advanced imaging and microscopy. Matlab programming skills and data analysis expertise would be a significant advantage, as would experience with electrophysiology and immunochemistry. fMRI experience would be valuable but is not required.

Candidates for this position should be highly motivated and skilled at working in amicable, energetic, interdisciplinary teams. Positions will be based at Columbia’s Morningside Campus in upper Manhattan, New York. Women and minority candidates are encouraged to apply, as are international scholars. Applicants should provide a copy of their CV and a brief statement of their research interests.

For more information on our lab and project please visit: www.bme.columbia.edu/~hillman or contact Elizabeth Hillman directly at: eh2245@columbia.edu