Faculty mentors: Kalanit Grill-Spector

Research supervisor(s):
Alex Rezai, Lab Manager, arezai@stanford.edu

Project topic(s): Development, Vision, Neurobiology, Brain Anatomy, Histology

Brief description of scientific issues:
The developmental mechanisms of human visual cortex are largely unknown for two main reasons. First, there is a paucity of macro- and micro-anatomical data on the human brain outside of primary visual cortex (area V1). Second, prior microstructural research on brain development has been done mostly in animal models, but these models are inadequate for elucidating the development of human visual cortex. To address this glaring gap in knowledge, we will use immunohistochemistry (IHC) methods in postmortem brains to elucidate how cellular populations and microstructures develop.

Skills required:
The ideal candidate for this position will have some prior training in a wet lab environment. Previous coursework in chemistry or biology lab classes is sufficient. Additionally, the ideal candidate will have basic knowledge of the bioscience, as can be attained through biology courses such as the 80-level Bio Foundations courses or the Human Biology core. Familiarity with coding in Python and use of deep neural network libraries like Keras or TensorFlow is desired, but not required.

Skills to be learned:
Cutting human brain tissue; staining tissue slices for cellular and microstructural properties; acquiring fluorescent and brightfield microscope images; analyzing microscopy images for cell and myelin density measurement.

Hours: Full Time

Contact person: Alex Rezai, Lab Manager, arezai@stanford.edu