How do microglia shape normal and pathological circuit function?

Microglia are dynamic, macrophage-like cells within the CNS. They remove cellular debris and pathogens from surrounding tissue and exert powerful neuroprotective and/or neurotoxic effects during disease and injury. They can also modulate neuronal membrane properties and synapses, positioning these cells as key contributors to both physiological and pathological circuit function. Microglia are not equivalent throughout the brain and exhibit specialized phenotypes in different nuclei of the basal ganglia (BG), circuits involved in reward and motivation. We exploit these regionally specialized phenotypes to study how microglial variation shapes:

- Synaptic function of BG neurons
- Resilience and viability of BG neurons

We also exploit this regional specialization of microglia to:

- Identify cues that regulate basal microglial phenotypes to discover novel strategies for manipulating microglial properties

Join the team! We are hiring research technicians and postdocs and will be accepting graduate students from UCLA’s Graduate Programs in Biosciences. Contact lindsaydebiase@ucla.edu or ldebiase@mednet.ucla.edu.