

## Summer Research Program 2025 – Projects

### Project #6

**Title:** Generation of brain microglia-neuronal co-culture from induced pluripotent stem cells

**Description:** Microglia are the brain's resident immune cells; they maintain immune homeostasis and provide a supportive environment for neurons. Microglial dysfunction has been implicated in numerous neurological disorders. Previous human *in vitro* studies primarily relied on neuronal cultures derived from induced pluripotent stem cells (iPSCs) to model neurological disorders. However, recent advances in the field have made it possible to generate microglia from iPSCs and co-culture them with neurons, creating a more accurate model of the *in vivo* brain environment. This microglia-neuronal co-culture system provides an excellent model for studying neuro-immune interactions in neurological disorders.

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