The brain is composed of neurons and non-neuronal glial cells. Astrocytes, a major glial cell type, are morphologically complex cells that regulate many important functions within the brain, including regulation of synapse formation and function. Importantly, defects in astrocyte morphology are implicated in numerous neurological disorders. While recent work has identified several important molecules that regulate the initiation of astrocyte morphogenesis, the mechanisms that refine astrocyte morphology later in development are unclear. Enter the microglia. Microglia are the brain's resident immune cells and are known to prune synapses during a period of synaptic refinement. Given this role of microglia, and because of the refinement of astrocyte processes that occurs during brain development, we hypothesized that microglia may play a similar role in refining astrocyte morphology, a novel concept that has not been thoroughly studied. To test this hypothesis, we collected brain tissue from transgenic mice with GFP-labelled astrocytes at different developmental timepoints and used immunohistochemistry to label microglia. Using confocal microscopy, we observed GFP+ astrocyte material within microglia at postnatal day (P) 21, P60, and P180, and quantified this using Imaris analysis software. Ongoing work will examine additional timepoints to determine whether this process is developmentally regulated. Defects in microglia and astrocytes are implicated in many neurological disorders throughout the lifespan including autism spectrum disorder, epilepsy, Multiple Sclerosis, and Alzheimer's Disease. Understanding the mechanisms of cellular crosstalk between these two cells is essential to understanding how defects in glia-glia and glia-neuron interactions may contribute to neurological disorders.