

**Dr. Hyun Kyoung Lee**

Associate Professor

Departments of Pediatrics and Neuroscience at Baylor College of Medicine

Duncan Neurological Research Institute at Texas Children’s Hospital

Email: hyunkyol@bcm.edu
Lab website: <https://www.hkleelab.org>

**A. Research Focus and established techniques:** *Developmental gliogenesis and associated disorders; white matter injuries (PVL, HIE, MS), brain cancer (GBM), stroke, vascular dementia, neuropsychiatric diseases.*

* ***Myelin development and regeneration (white matter injury).*** Our research focuses on the mechanisms associated with Wnt signaling in myelin development and regeneration, and pinpoint potential targetable pathways for white matter disorder (Tools can be found at: PMID: 25754822, 32792353, 35101966, 37084732, 37607236)
* ***Astrocyte development and reactivity (ischemic stroke).*** Our research focuses on key mechanistic pathways by which astrocytes govern blood-brain barrier recovery after ischemic stroke. We hope our research can lead to discovery of novel glia-specific therapeutic approaches, such as astrocytic metabolism-cytokine coupling, to stimulate brain repair after stroke injury (Tools can be found at: PMID: 34633730, 31498149, bioRxiv 2023.04.03.535167)
* ***Brain cancer, glioblastoma.*** Our research is dedicated to exploring the mechanisms at play between glioma and the tumor microenvironment, with a goal to identify novel, actionable pathways for therapeutic intervention. (Tools can be found at: PMID: 29053101, 28166219, 28892058)

**B. Techniques of interest**: In vivo 2P/3P neuroimaging, Human MRI, pH sensors, physiological measurements