

AACR/NBTF Fellowship in memory of Bonnie Brooks

**Donghong Zhao, Ph.D.**

*The role of hypoxia in neural stem cell migration to glioma cells*

Beckman Research Institute of the City of Hope, Durate, CA

Abstract:

Glioma are uniquely difficult to treat because of their location. Surgical removal of the tumor risks permanent damage to nervous tissue, and does not eliminate cancer cells that have migrated throughout the brain. We have previously demonstrated that neural stem cells (NSCs) can target primary glioma with great selectivity. This suggests that NSCs could serve as a vehicle for targeted delivery of therapeutic agents to primary glioma and invasive micro-tumor foci. This NSC-mediated cancer treatment should maximize the concentration of therapeutics at tumor sites, and minimize the toxic side effects to normal tissues. Stem cells-based therapy holds the promise of improving gliomas treatment without the limitations of currently available surgical, radio- and chemotherapeutic treatments. Our goal of this proposal is to investigate the role of hypoxia on the directed migration of NSCs to glioma cells, and identify the specific signaling pathways involved.