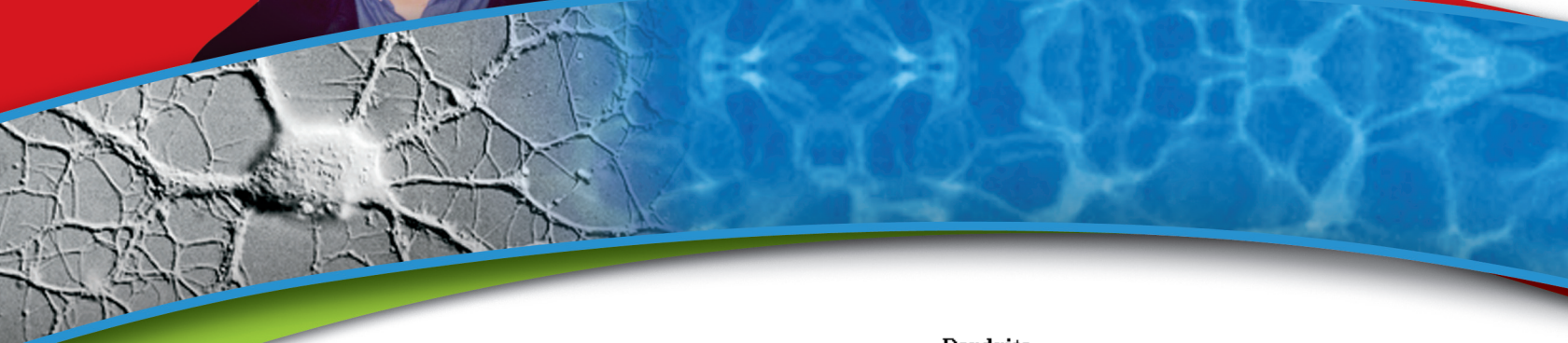




## Matthew Qiu, Ph.D.

Professor

Department of Anatomical Sciences and Neurobiology  
School of Medicine



The long-term goal of our research is to understand the molecular and genetic mechanisms that control the differentiation and regeneration of motor neurons and oligodendrocytes, and develop novel molecular strategies for stimulating the de novo regeneration of motor neurons and oligodendrocytes in the injured spinal cord. Research projects include: (1) Elucidation of the molecular pathways that regulate the early specification and differentiation of glia in the developing CNS. (2) Transcriptional and posttranscriptional regulation of homeodomain factors that control the early development of motor neurons and oligodendrocyte cells. (3) Isolation and characterization of the surface receptors involved in CNS myelination. (4) Lineage-specific differentiation of embryonic stem cells into motor neurons and oligodendrocytes for spinal cord transplantation.

### Grants:

NIH (1R01-NS37717-09)	P. I.	
"Molecular and genetic control of oligodendrocyte development"	35% efforts	
06/01/09 - 05/30/14	Total \$1,626,157	
National Multiple Sclerosis Society (RG3275)	P. I.	15% efforts
Developmental regulation of axonal myelination by Necl molecules		
07/2009-06/2012	Total: \$474,019	
Kentucky Spinal Cord and Head Injury Trust (#3-12)	P.I.	10% effort
Role of protein phosphatase D in axonal myelination.		
01/09 - 01/2012	Total \$299,000	

### Publications:

Lee X, Hu Y, Zhang Y, Yang Z, Shao Z, **Qiu M**, Pepinsky B, Miller RH, Mi S. (2011). Oligodendrocyte differentiation and myelination defects in OMgp null mice. *Mol Cell Neurosci.* 46(4):752-761

Sujata, **Qiu M**, Hetman M and Whittemore S. (2011). Attenuating the ER stress response improves functional recovery after spinal cord injury. *Glia* 59(10):1489-502

Zhu Q, Whittemore S., DeVries W, Zhao X., Kuypers N and **Qiu M** (2011). Dorsally-derived oligodendrocytes in the spinal cord contribute to axonal myelination during development and remyelination following focal demyelination. *Glia* 59(11):1612-21

Zheng K, Li H, Huang H, and **Qiu M**. (2012). microRNAs and glial cell development. *The Neuroscientist* 18(2):114-8

### External Professional Activity:

NIH Study Section MCBG, regular member (2012-)

