

**Aihua Dai, MS, M.D.**

## **Research Summary**

My training and research activities are involved in clinical and basic sciences that include cancer research, bone pathology, pediatric neonatology, developmental biology and neurosciences.

My interest in cancer research was developed during my graduate studies and was further strengthened during my Postdoctoral Training at the University of California Medical School in San Francisco. Here, I worked with DNA constructs of plasminogen activator inhibitor that were transfected to cancer cell lines and then introduced into the mouse animal model to test the inhibition of the tumor invasion and metastasis (International Journal of Cancer, 60:597-603). Under Dr. Henry Lin's supervision at the UCLA Harbor Research and Education Institute, I studied a clinic correlation of prostaglandin H synthase 2 variant (Val511Ala) in African Americans and the risk for colorectal neoplasm (Cancer Epidemiol Biomarkers Prev 11:1305-15). My research on bone pathology was supervised by Dr. Brenda F. Boyce, a physician-scientist, during my second Postdoctoral training at the University of Texas Health Science Center in San Antonio. My project was about the induction of osteoclast apoptosis by sex steroids, especially estrogen through the TGF- $\beta$  signaling pathway-an important molecular mechanism of osteoporosis (Nature, Medicine, 2:1132-1136). I also worked in Dr. Robin Ohls' lab at the University of New Mexico in the department of Neonatology, where my research focused on the effect of Aranesp, a potent form of erythropoietin, on the growth and differentiation of erythroid progenitors at fetal and neonatal stages (Clinics in Perinatology, Hematopoietic Growth Factors in Neonatal Medicine, 31:77-89, Elsevier Saunders, 2004). I was also fortunate enough to work with Dr. Arthur D. Riggs, a member of the National Academy of Sciences, to study DNA methylation on X-linked PGK1 gene on human oogenic cells in developmental biology (Proc. Natl. Acad. Sci. 89:1413-1417). Since 2005, I have worked with Dr. David Schulz's lab for neurosciences research at the University of Missouri-Columbia where my project involved cell-specific patterns of transcript alternative splicing of voltage-gated ion channels in the single identified STG neurons (Neuroscience, 168(1):118-29, 2010).