

## **Xiaoting Zhang, PhD**

Assistant Professor

Department of Surgery; Division of Research

**Description of Research:** Dr. Zhang research focuses on the structural and functional analyses of transcriptional coactivators and its roles in nuclear receptor-mediated transcription, organ development and function. Nuclear receptors including PPAR $\gamma$ , PPAR $\delta$  and ERR $\alpha$  play prominent roles in lipid and glucose metabolism and homeostasis, and dysregulation of which is related to obesity, insulin resistance and type II diabetes. Recent studies have implicated a large coactivator complex TRAP/Mediator, through its receptor-interacting subunit MED1/TRAP220, plays a key role in mediating the functions of these receptors. Dr. Wang's current research focuses on investigating the role of MED1/TRAP220 in these processes in vivo by using mouse genetic method. Towards this end, he has generated muscle-specific MED1/TRAP220 conditional knockout mice (due to embryonic lethality of the total knockout) and, have observed very significant increases in both glucose tolerance and insulin sensitivity of these mice. In addition, the fat cell size of these mice was found to be about 50% smaller than that of wild type mice. Interestingly, he has also found a markedly increase of PPAR $\gamma$  and PPAR $\delta$  but not ERR $\alpha$ 's expression in the muscle, while the expression of PPAR $\gamma$  and C/EBP $\beta$ , and their target genes were downregulated in the fat of these mice. Dr. Wang is currently in the process to further investigate the molecular mechanisms underlining these observed phenomena.

### **Collaborations:**

Dr. Wang is a new faculty member in the Department of Surgery. He is developing a line of collaboration with Digestive Health Center members from the Obesity theme.