



[Position for a PhD student in Experimental Biology](#)

Laboratory of :

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Laboratory research theme: Gestational Diabetes and Perinatal Programming of Kidney and Cardiovascular Diseases.

Project description: Gestational diabetes being a serious medical complication affects both mother and baby, even in 21st century. The prevalence of gestational diabetes is 3-14% of pregnancies world-wide. During last several years, we have found that mice with untreated diabetes during pregnancy give birth to underweight babies whose kidneys display serious malformations. As adults, some of these babies will suffer from hypertension and chronic kidney disease. These babies are victims of what is known as perinatal programming, a complex and mysterious condition that affects embryos and adults alike. In our research projects, we aim to elucidate the mechanisms related to this phenomenon of gestational diabetes-induced perinatal programming and to develop prevention strategies in animal model in order to prevent diseases in children whose mothers suffer from gestational diabetes .

References : Some of recent important publications

1. Chen Y.W, et al: Reactive oxygen species and nuclear factor-kappa B pathway mediate high glucose-induced Pax-2 gene expression in mouse embryonic mesenchymal epithelial cells and kidney explants. *Kidney Int*, 70 (9):1607-1615, 2006.
2. Zhang S-L et al.: Reactive oxygen species in the presence of high glucose alter ureteric bud morphogenesis. *J Am Soc Nephrol*. 18(7): 2105-2115. 2007
3. Tran S et al: Maternal Diabetes Modulates Renal Morphogenesis in Offspring. *J Am Soc Nephrol*. 19(5):943-52. 2008.
4. Chen YW et al: Maternal diabetes programs hypertension and kidney injury in offspring. *Pediatric Nephrology* 25:1319-1329, 2010.
5. Chen YW et al: High Glucose Promotes Nascent Nephron Apoptosis Via p53 and NF-KB Pathway. *AJP-Renal Physiology* 2010 in press.

Disciplines/ Qualifications:

Candidates should have a formal training in biomedical sciences field (ex: molecular biology, biochemistry, biostatistics, biophysics, physiology, cell biology, etc.) or a related discipline (Renal or Cardiovascular disease domain), have excellent organizational, interpersonal, and communication skills, and have a strong interest in studying the molecular mechanisms of maternal diabetes induced perinatal programming.

Contact:

Applicants should submit a resume, university records, a short statement of research interests, TOEFL results and two letters of recommendation to Dr. Shao-Ling Zhang by email if possible in one .pdf document.

Collaboration: Collaboration is possible with a former supervisor or another researcher in that field. Please contact me.