

## CURRICULUM VITAE

**Zemin Wang**

Work: Department of Genetics and Stanley S. Scott Cancer Center  
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### RESEARCH INTERESTS

WNT/ $\beta$ -catenin signaling in GI tumor development

Genetics and functional analysis of DNA damage response in prostate cancer susceptibility

### EDUCATION

2007 Ph.D., Environmental Toxicology, Texas Tech University, Lubbock, TX  
2003 M.S., Oncological Pathology, Soochow University, Suzhou, China  
2000 M.D., Clinical Medicine, Shanxi Medical University, Taiyuan, China

### POSTGRADUATE TRAINING

2010- Postdoctoral fellow, Louisiana State University School of Medicine, New Orleans  
2007-2009 Postdoctoral fellow, Indiana University School of Medicine, Indianapolis, IN  
2001-2002 Intern in pathology, The Second Hospital of Soochow University, Suzhou, China  
1999-2000 Intern in clinical medicine, The First Hospital of Shanxi Medical University, Taiyuan, China

### RESEARCH EXPERIENCE

**Postdoctoral fellow** Department of Genetics and Stanley S. Scott Cancer Center, Louisiana State University School of Medicine in New Orleans, February 2010-

Mentor: Wanguo Liu, Associate Professor of Genetics

- Defects of WNT signaling in GI tumorigenesis
- Functional analysis of DNA repair response defects in prostate cancer susceptibility

**Postdoctoral fellow** Chemical Carcinogenesis and Toxicology, Indiana University School of Medicine, September 2007-January 2010

Mentor: James E Klaunig, Robert B. Forney Professor of Toxicology

- Alterations of mitochondrial DNA and involvement of ROS in cigarette smoking-induced lung cancer.
- Molecular mechanisms of oxidative stress and mitochondria in cancer including liver cancer, acrylonitrile-induced brain tumor, and chemical-induced hemangiosarcomas.
- Genetic polymorphisms of oxidative stress related genes and their relationship with human cancers, interactions with dietary or environmental factors.
- Cancer prevention using chemopreventive agents.
- Role of oxidative stress and mitochondria in chemical toxicity.
- Strain difference of basal levels of oxidative stress, antioxidant capacity, and gene expression.

**Research Assistant** Environmental toxicology, molecular epidemiology, Texas Tech University, August 2003-August 2007

Advisor: Jia-Sheng Wang, Professor of Molecular Toxicology

- Dissertation project “Environmental carcinogen exposure and genetic polymorphisms in the carcinogenesis of esophageal cancer in high risk population”.
- Participated in the study “Short-Term Safety Evaluation of NovaSil in Humans” as one of the four major investigators.
- Participated in the Phase IIa Clinical Trial “NovaSil clay intervention in Ghanaians at high risk for aflatoxicosis”, analyzed serum vitamins A and E for safety evaluation.
- Participated in acute and sub-chronic animal (F344 rat) toxicity study of Fumonisin B1, Microcystin and Aflatoxin B1, dosing animals and collecting body fluid and organ samples.
- Established 2-DIGE method for studying proteomics using human cell lines, human, and animal samples.
- Synthetic drug screening using a number of human cancer cell lines.

**Research Assistant** Oncological pathology, Soochow University, September 2000-July 2003

Advisor: Yi-Zhong Feng, Professor of Pathology

- Thesis project “Expression and significance of survivin, Cox-2 and Bcl-2 gene in endometrial adenocarcinoma”.

## SELECTED SKILLS & TECHNIQUES

- **Cell & molecular biology techniques:** Molecular cloning, RNAi, cell proliferation and toxicity assay, cell based apoptosis, ROS, and mitochondrial membrane potential assays, mitochondria isolation and purification from cell culture, tissue and blood, DNA and RNA isolation and purification, tumor cell invasion assay,  $\rho 0$  cell preparation, primer construction, regular PCR, real-time PCR, DNA gel electrophoresis, PCR-RFLP and Taqman SNP genotyping
- **Protein technology:** Protein isolation and purification, Electrophoresis, Isoelectric focusing, SDS-PAGE, 2-Dimensional gel electrophoresis, Western, ELISA

- **Cell culture:** Abundant experience on a number of human, mouse and rat cell lines
- **Laboratory animals:** Significant experience in handling small laboratory animals (mouse and rats) including dosing through various routes, surgery, and blood and tissue collection. Isolation and culture of mouse and rat primary hepatocytes and Kupffer cells
- **Other techniques:** Comet assay, Histopathology, Immunohistochemistry, RIA, Microscopy (light, fluorescence), Flow cytometry, High Performance Liquid Chromatography (HPLC), CoulArray HPLC, LC/MS, Gas Chromatography (GC), GC/MS
- **Computer skills:** Windows, Microsoft office (word, Power point, Excel), SigmaPlot, SigmaStat, SPSS software
- **Languages:** Fluent in English and Chinese

## TEACHING EXPERIENCE

- **Teaching Assistant-** Department of Environmental Toxicology, the Institute of Environmental and Human Health, Texas Tech University, TX, USA. Spring, 2005  
Course: Principle of Toxicology II
- **Teaching Assistant-** Department of Pathology, Medical School of Soochow University, Jiangsu, China. Spring, 2002  
Course: General Pathology, lecture and lab

## HONORS & AWARDS

- Postdoctoral representative for Food Safety Section of Society of Toxicology 2009-2010
- Best poster award, 2008 Indiana University Simon Cancer Center Annual Cancer Research Day
- SOT graduate student travel award, 2007 SOT annual meeting, Charlotte, NC
- GC SOT graduate student travel award, 2007 SOT annual meeting, Charlotte, NC
- AACR-Aflac, Incorporated Scholar-in-Training Award, 2007 AACR annual meeting, Los Angeles, CA

## PEER REVIEWED JOURNAL ARTICLES

1. Klaunig JE, Pu X, **Wang Z**, and Zhou S. Oxidative stress and damage in carcinogenesis. Toxicology & Applied Pharmacology (Accepted)
2. **Wang Z**, Pu X, Klaunig JE, Kamendulis LM. Mechanisms for polyhexamethylene biguanide (PHMB) carcinogenicity. Toxicological Sciences (Submitted)
3. Pu X, **Wang Z**, Hocevar BA, Kamendulis LM, and Klaunig JE. Protective of antioxidants on Acrylonitrile induced oxidative DNA damage and modulation on gene expression profile in rat brain. Carcinogenesis (Submitted)

4. Tang L, Xu L, Afriyie-Gyawu E, Liu W, Wang P, Tang Y, **Wang Z**, Huebner HJ, Ankrah N-A, Ofori-Adjei D, Williams JH, Wang J-S, and Phillips TD. Aflatoxin-Albumin Adducts Correlates with Decreased Serum Levels of Vitamins A and E in an Adult Ghanaian Population. *Food Addit Contam Part A Chem Anal Control Expo Risk Assess.* 2009 Jan;26(1):108-18.
5. Afriyie-Gyawu E\*, **Wang Z**\*, Ankrah N-A., Xu L., Johnson NM, Tang L, Guan H, Huebner HJ, Jolly PE, Ellis WO, Taylor R, Brattin B, Ofori-Adjei D, Williams JH, Wang J-S, and Phillips TD. NovaSil clay does not affect bioavailability and utilization of vitamins A and E and nutrient minerals in Ghanaians at high risk for aflatoxicosis. *Food Addit Contam Part A Chem Anal Control Expo Risk Assess.* 2008 Jul;25(7):872-84. (\* *equal contribution*)
6. **Wang Z**, Tang L, Sun G, Tang Y, Xie Y, Wang S, Hu X, Gao WM, Cox SB, Wang JS. Etiological study of esophageal squamous cell carcinoma in an endemic region: a population-based case control study in Huaian, China. *BMC Cancer.* 2006 Dec;6(1):287
7. McKean C, Tang L, Tang M, Billam M, **Wang Z**, Theodorakis CW, Kendall RJ, Wang JS. Comparative acute and combinative toxicity of aflatoxin B1 and fumonisin B1 in animals and human cells. *Food Chem Toxicol.* 2006 Jun;44(6):868-76.
8. Billam M, Tang L, Cai Q, Mukhi S, Guan H, Wang P, **Wang Z**, Theodorakis CW, Kendall RJ, Wang JS. Seasonal variations in the concentration of microcystin-LR in two lakes in western Texas, USA. *Environ Toxicol Chem.* 2006 Feb;25(2):349-55.
9. Xie Y, Sun G, Hu X, Wang S, Kai H, Cui Y, Hu, Y, Zhang H, Cai Q, **Wang Z**, Tang L, Tang Y, Wang JS. A Case-control Study on the Dietary and Behavioral Factors of Esophageal Cancer in Chuzhou area Huaian city. *Wei Sheng Yan Jiu.* 2005 Jul;34(4): 479-80. Chinese.
10. Wang JS, Luo H, Billam M, **Wang Z**, Guan H, Tang L, Goldston T, Afriyie-Gyawu E, Lovett C, Griswold J, Brattin B, Taylor RJ, Huebner HJ, Phillips TD. Short-term safety evaluation of processed calcium montmorillonite clay (NovaSil) in humans. *Food Addit Contam.* 2005 Mar;22(3):270-9.
11. **Wang Z**, Feng Y, Chai Y, Gu Y. Study on the Expression and Clinical Significance of Survivin in Endometrial Adenocarcinoma of Uterus. *Suzhou University Journal of Medical Science.* 2003 Apr;23(2): 166-8. Chinese.

#### MANUSCRIPT IN PREPARATION

1. **Wang Z**, Zhou S, Pu X, Klaunig JE. Acrylonitrile Induced Alterations in Mitochondrial Biogenesis and Bioenergetics in Cultured Astrocytes.
2. **Wang Z**, Klaunig JE, Zhou S. Oxidative DNA damage and mitochondria in smoking-induced lung cancer.
3. Klaunig JE, **Wang Z**, Meng J, Jiao Z, Xu Y, Kamendulis LM. Protective effects of black tea on oxidative damage in humans.

## PUBLISHED ABSTRACTS

1. Xu L, **Wang Z**, Tang L, Wang S, Hu X, Sun G and Wang JS. (2010). Association of esophageal cancer risk with genetic polymorphisms of xenobiotic metabolizing genes, DNA repair genes, and inflammation-regulating genes in Huaian, China. *Proc AACR.*, 51: 1860.
2. Xu L, Tang L, Wang X, **Wang Z**, Sun G, Wang S, Hu X and Wang JS. (2010). Oxidative DNA damage and human esophageal cancer risk in huaian, china. *Toxicologist.* 114: 142.
3. Pu X, **Wang Z**, Hocevar BA, Kamendulis and Klaunig JE. (2010). Effects of antioxidants on acrylonitrile-induced oxidative stress in female f344 rats. *Toxicologist.* 114: 526.
4. **Wang Z**, Zhou S and Klaunig JE. (2009). Association of decreased mitochondrial DNA content with response of liver cancer cells to chemotherapeutic agents, *Proc AACR.*, 50: 2372
5. **Wang Z**, Wang Z-Y, Klaunig JE. and Zhou S. (2009). Modulation of antioxidants on sensitivity of lung cancer cells to chemotherapeutic agents, *Proc AACR.*, 50: 3761.
6. **Wang Z**, Zhou S and Klaunig JE. (2009) Involvement of reactive oxygen species and macrophages in troglitazone (TGZ)-induced hemangiosarcomas. *Toxicologist.* 108: 901.
7. Kamendulis LM, Pu X, Barbee SJ and **Wang Z**. (2009) Mechanisms for polyhexamethylene biguanide (PHMB) carcinogenicity. *Toxicologist.* 108: 1640.
8. Zhou S, **Wang Z**, Pu X And Klaunig JE. (2009) Modulation of acrylonitrile on mitochondrial gene expression and membrane potential. *Toxicologist.* 108: 1644.
9. **Wang Z**, Tang L, Wang J-S. (2008). Role of Environmental carcinogen exposure and genetic polymorphisms in human esophageal carcinogenesis, *Proc AACR.*, 49: 3916
10. Tang Y, Tang L, **Wang Z**, Shao C, Yu J, Huang T, Gao W, Wang J-S. (2008). Interaction between phenotypic oxidative DNA damage biomarker and polymorphic DNA repair genes in high-risk population for liver cancer, *Proc AACR.*, 49: 1893
11. **Wang Z**, Meng J, Jiao Z, XuY, Kamendulis LM and Klaunig JE. (2008). Protective effects of black tea on oxidative damage in humans. *Toxicologist.* 102: 124.
12. Afriyie-Gyawu E, **Wang Z**, Johnson N, Xu L, Ankrah NA, Tang L, Huebner HJ, Jolly PE, Williams JH, Wang J-S, Phillips TD. (2008). NovaSil clay does not affect bioavailability and utilization of vitamins A and E and nutrient minerals in Ghanaians at high risk for Aflatoxicosis. *Toxicologist.* 102: 507.
13. Tang L, Xu L, Afriyie-Gyawu E, Wang P, Tang Y, **Wang Z**, Huebner HJ, Ankrah NA, Ofori-Adjei D, Ellis WO, Jolly PE, Williams JH, Wang J-S and Phillips TD. (2008). Aflatoxin exposure decreases serum levels of vitamins A and E in Ghanaians at high risk of Aflatoxicosis. *Toxicologist.* 102: 2238.
14. **Wang Z**, Tang Y, Cai Q, Xu L, Sun G, Hu X, Tang L, Gao W, Cox BS Wang J-S. (2007). Antioxidant vitamins and green tea polyphenols and risk of esophageal squamous cell carcinoma in Huaian, China, *Proc AACR*, 48: 862.
15. **Wang Z**, Li X, Guan H, He X, Tang L, Afriyie-Gyawu E, Huebner HJ, Ankrah N-A, Ofori-Adjei D, Williams JH, Wang J-S and Phillips TD. (2007). Three-Month Clinical

Intervention Trial with NoviSil Clay in Ghanaians: No Influence on Utilization of Vitamins A and E. *Toxicologist*. 96: 1455.

16. Xu L, Tang L, Afriyie-Gyawu E, Wang P, Tang Y, **Wang Z**, Huebner HJ, Arkrah N-A, Ofori-Adjei D, Ellis WO, Jolly PE, Williams JH, Wang J-S, Phillips TD. (2007). Aflatoxin exposure decreases serum levels of vitamins A & E in Ghanaians at high risk for aflatoxicosis. Annual Meeting of the Gulf Coast Regional Chapter of the Society of Toxicology. College Station, Texas. October 18-19, 2007. Abstract: 41.
17. **Wang Z**, Tang Y, Sun G, Xie Y, Wang S, Hu X, Tang L, Wang J-S. (2006). Genetic polymorphisms of DNA repair enzyme XRCC1 and alcohol metabolizing enzymes ALDH2, ADH2, and ADH3 on susceptibility to esophageal cancer in Huaian, China, *Proc AACR*, 47: 2053
18. **Wang Z**, Tang Y, Luo H, Sun G, Xie Y, Wang S, Hu X, Tang L, Wang J-S. (2006). Role of Oxidative DNA Damage in Human Esophageal Carcinogenesis, *Toxicologist*, 90: 957.
19. Billam M, Cai Q, Tang L, Wang P, Mukhi S, **Wang Z**, Luo H, Guan H and Wang J-S. (2005). Temporal Patterns of Microcystin-LR Contamination in Lakes of West Texas. *Toxicologist*, 84:1595.
20. Cai Q, Guan H, Tang L, Luo H, Billam M, **Wang Z**, Tang Y and Wang J-S. (2005). Validation of Fumonisin Biomarkers in F344 rats. *Toxicologist*, 84:1308.
21. Wang J-S, Goldston T, Luo H, Billam B, **Wang Z**, Guan H, Tang L, Afriyie-Gyawu E, Lovett C, Griswold J, Brattin B, Huebner HJ and Phillips TD. (2005). Short-term safety evaluation of NovaSil in humans. *Toxicologist*, 84:1309.
22. Tang L, Cai Q, **Wang Z**, Luo H, Wang S, Xie Y, Yu J, Wang K, Hu X, Huang T, Su J, Sun G, Wang J-S. (2005). Validation of Fumonisin Biomarkers for Studying Human Cancer Risks. *Proc AACR*. 46: 4061.
23. **Wang Z**, Tang Y, Sun G, Xie Y, Wang S, Hu X, Tang L and Wang J-S. (2005) Genetic Polymorphisms of *CYP2E1* and *GSTM1* and *T1* on Susceptibility to Esophageal Cancer in Huaian, China. *Proc AACR*, 46:4923.

## PROFESSIONAL MEMBERSHIPS

- American Association for Cancer Research (AACR)
- Society of Toxicology (SOT)