

BIOGRAPHICAL SKETCH

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NAME Zhenhua Liu		POSITION TITLE Assistant Professor of Nutrition	
eRA COMMONS USER NAME ZLIU01			
EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, include postdoctoral training.)			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
Hunan Agricultural University , Hunan, PRC	B.S.	1989-1993	Animal Science & Veterinary Medicine
China Agricultural University , Beijing, PRC	M.S.	1993-1996	Animal Science
Auburn University , Auburn, AL, US	M.S.	2001-2003	Statistics-Life Science
Auburn University , Auburn, AL, US	Ph.D.	2000-2003	Nutritional Biochemistry
New England Medical Center , Tufts University, Boston, MA	Post-Doc	2004	Cancer Biology
Jean Mayer USDA Human Nutrition Research Center on Aging , Tufts University, Boston, MA	Post-Doc	2004-2007	Nutrition & Cancer Prevention

A. PERSONAL STATEMENT

Diet and lifestyle are modifiable factors which play prominent roles in public health. My laboratory investigates how those factors and their metabolically-related gene variants interact to mediate the development of chronic diseases. Particularly, my research centralizes on the nutritional modulation of the *Wnt*-signaling pathway as it tightly relates to many chronic diseases including cancer and obesity-associated medical complications. Currently, my laboratory focuses on Nutritional Epigenetics and Obesity-associated Inflammation in terms of the regulation of *Wnt* pathway and the prevention of cancer. We utilize cell culture and animals, biochemical & molecular techniques, as well as functional genomics and systems biology approaches to understand the etiology of human chronic diseases. The ultimate goal of my laboratory is to integrate our biological findings with dietary and lifestyle strategies to diminish the burden of chronic diseases in our society.

B. POSTIONS AND HONORS

Positions and Employment

2012-Current **Assistant Professor**, School of Public Health and Health Sciences, University of Massachusetts, Amherst, MA

2012-Current **Adjunct Scientist**, Jean Mayer USDA Human Nutrition Research Center on Aging, Tufts University, Boston, MA

2011-2012 **Scientist II** (Primary) & **Assistant Professor** (Secondary), Jean Mayer USDA Human Nutrition Research Center on Aging & Friedman School of Nutrition Science and Policy, Tufts University, Boston, MA

2009-2012 **Investigator** (Associate Member), Nutrition and Cancer Program, Tufts Medical Center-Cancer Center, Boston, MA

2007-2010 **Scientist III** (Primary) & **Instructor** (Secondary), Jean Mayer USDA Human Nutrition Research Center on Aging & Friedman School of Nutrition Science and Policy, Tufts University, Boston, MA

2004-2007 **Postdoctoral Associate**, Jean Mayer United States Department of Agriculture Human Nutrition Research Center on Aging, Tufts University, Boston, MA

2004 **Postdoctoral Associate**, Molecular Oncology Research Institute, Tufts-New England Medical Center, Boston, MA

Honors

2012 **Bio-Serv Award** for Young Investigators. American Society for Nutrition, San Diego, CA

2007 **Hamish N. Munro Award** for Excellence in Postdoctoral Research, Jean Mayer USDA Human Nutrition Research Center on Aging, Tufts University, Boston, MA

2002, 2003 **Presidential Research Fellowship**, Auburn University, AL, USA

Other Experience and Professional Memberships

2013 Reviewer, Israel Science Foundation,
2011 Reviewer, NIH Special Emphasis Panel for RFA-ES-10-002: Epigenomics of Human Health and Disease (R01)
2010 Certificate of SAS® Advance Programming
2008 Certificate of SAS® Base Programming
Spring, 2005 Bioinformatics and Genomics in Biomedical Research. *Course Audit*. Sackler School of Biomedical Sciences, Tufts University
Spring, 2005 Cancer Genetics. *Course Audit*. Sackler School of Biomedical Sciences, Tufts University
2012-Current Member, American Society for Nutrition
2010-2012 Member, American Association for Cancer Research
2010 Member, American Gastroenterology Association
2007-Current Member, The European Nutrigenomics Association (NuGO)
2006-2009 Associate Member, American Association for Cancer Research

C. SELECTED PEER-REVIEWED PUBLICATIONS (Selected from 31 peer-reviewed publications; * denotes as a corresponding author ; In reverse chronological order)

1. **Liu, Z.***, Brooks, R. S., Ciappio, E. D., Bennett, G., Crott, J. W., Mason, J. B. 2012. TNF- α induced alterations in the Wnt signaling cascade: a potential mechanism for obesity-associated colorectal tumorigenesis. *Journal of Nutritional Biochemistry*. 23: 1207-13.
2. Ciappio,E.D, **Liu,Z.**, Brooks,R.S., Mason,J.B. Bronson,R.T. and Crott,J.W. 2011. Maternal B-vitamin supplementation from preconception through weaning suppresses intestinal tumorigenesis in Apc+/1638N mouse offspring. *Gut*. 60: 1695-1702. PMID:21659408.
3. **Liu, Z.***, Ciappio, E. D., Crott, J. W., Brook, R. S., Mason, J. B. 2011. Mild inadequacy in multiple one-carbon vitamins elevates *Wnt*-signaling and promotes intestinal tumorigenesis in the BAT-LacZx^{Apc}1638N mouse model. *FASEB Journal*, 25:3136-3145. PMCID: PMC3157689.
4. Flood, A., Mason, J. B., **Liu, Z.**, Cash, B. D., Schatzkin, A., Schoenfeld, P. S., Cross, A. J. 2011. Concentration of folate in colorectal tissue biopsies predicts prevalence of adenomatous polyps. *Gut*. 60:66-72. PMID: 21068136.
5. Protiva, P., Mason, J. B., **Liu, Z.**, Hopkins, M. E., Nelson, C., Marshall, J. R., Lambrecht, R. W., Pendyala, S., Kopelovich, L., Kim, M., Kleinstein, S. H., Laird, P. W., Lipkin, M., Holt, P. R. 2011. Altered Folate Availability Modifies the Molecular Environment of the Human Colorectum: Implications for Colorectal Carcinogenesis. *Cancer Prevention Research*. 4:530-43. PMID: 21321062.
6. Sauer, J., Jang, H., Zimmerly, E. M., Kim, K. C., **Liu, Z.**, Chanson, A., Smith, D. E., Mason, J. B., Friso, S., Choi, S. W. 2010. Ageing, chronic alcohol consumption and folate are determinants of genomic DNA methylation, p16 promoter methylation and the expression of p16 in the mouse colon. *British Journal of Nutrition*. 104: 24-30. PMID: 20205967.
7. Chanson, A., Parnell, L. D., Ciappio, E. D., **Liu, Z.**, Crott, J. W., Tucker, K. L., Mason, J. B. 2009. Polymorphisms in uracil-processing genes, but not one-carbon nutrients, are associated with altered DNA uracil concentrations in an urban Puerto Rican population. *The American Journal of Clinical Nutrition*. 89:1927-36. PMCID: PMC2683003.
8. **Liu, Z.***, Choi, S. W., Crott, J. W., Mason, J. B. 2008. Multiple B-vitamin inadequacy amplifies alterations induced by folate depletion in p53 expression and its downstream effector MDM2. *International Journal of Cancer*. 123: 519-525. PMCID: PMC2764718.
9. Mason, J. B., Choi, S. W., **Liu, Z.** 2008. One-carbon micronutrients and age modulate the effects of folate on colorectal carcinogenesis. *Nutrition Reviews*. 66: S15–S17. PMID: 18673480.
10. DeVos L, Chanson, A., **Liu, Z.**, Ciappio, E. D., Parnell, L. D., Mason, J. B., Tucker, K. L., Crott, J. W. 2008. Associations between single nucleotide polymorphisms in folate uptake and metabolizing genes with blood folate, homocysteine, and DNA uracil concentrations. *The American Journal of Clinical Nutrition*. 88:1149-1158. PMCID: PMC2728423.

11. Crott, J. W., **Liu, Z.**, Keyes, M. K., Choi, S. W., Jang, H., Moyer, M. P., Mason, J. B. 2008. Moderate folate depletion modulates the expression of selected genes involved in cell cycle, intracellular signaling, and folate uptake in human colonic epithelial cell lines. *Journal of Nutritional Biochemistry*. 19: 328-335. PMID: PMC2759072.
12. **Liu, Z.**, Choi, S. W., Crott, J. W., Keyes, M. K., Jang, H., Smith, D. E., Kim, M. Laird, P. W., Bronson, R., Mason, J. B. 2007. Mild depletion of dietary folate combined with other B-vitamins alters multiple components of the *Wnt* pathway in the mouse colon. *Journal of Nutrition*. 137: 2701-2708.
13. Keys, M. K, Jang, H., Mason, J. B., **Liu, Z.**, Crott, J. W., Smith, D. E., Friso, S., Choi, S. W. 2007. Elder age and dietary folate are interactive determinants of genomic and p16-specific DNA methylation in the mouse colon. *Journal of Nutrition*. 137:1713-1717.
14. Crott, J. W., **Liu, Z.**, Choi, S. W., Mason, J. B. 2007. Folate depletion in human lymphocytes up-regulates p53 expression despite marked induction of strand breaks in exons 5–8 of the gene. *Mutation Research*, 626:171-179.
15. Gabriel, H. E., **Liu, Z.**, Crott, J. W., Choi, S. W., Song, B. C., Mason, J. B., Johnson, E. J. 2006. Carotenoid, retinoid and tocopherol concentrations in serum and buccal mucosa of smokers is altered in a manner unrelated to diet. *Cancer Epidemiology Biomarkers & Prevention*, 15:993-999.