Joshua Ari Bomser

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Education/Training

Post-Doctoral	1998-2000	**University of California-Berkeley** Environmental Chemistry and Toxicology
Ph.D.	1993-1998	**University of Illinois at Urbana-Champaign** Nutritional Science
B.S.	1989-1993	**University of Maryland at College Park** Human Nutrition and Foods

Professional Experience

2004-Present	**Assistant Professor,** Department of Human Nutrition, The Ohio State University. Molecular Nutrition
2000-2004	**Assistant Professor**, Department of Food Science and Technology, The Ohio State University. Functional Foods in Disease Prevention
1998-2000	**Post-Doctoral Fellow**, Department of Environmental Chemistry and Toxicology, University of California-Berkeley. Studied the toxic effects of pesticides on mammalian signal transduction pathways. Primary Investigator: Dr. John Casida
1993-1998	**Graduate Research Assistant**, Division of Nutritional Sciences, University of Illinois at Urbana-Champaign. Conducted Ph.D. thesis research examining the anti-cancer activity of natural products. Thesis advisor : Dr. Keith W. Singletary
1992-1993	**Research Assistant**, United States Department of Agriculture (USDA), Weed Science Lab Beltsville, Maryland. Bioassayed plant products for herbicidal activity. Advisor: Dr. John Lydon

1991-1992	**Laboratory Assistant**, Biospherics, Inc. Beltsville, Maryland. Performed animal feeding studies evaluating the use of D-tagatose as a potential alternative sweetener.

Honors and Awards

2003	**Pomerene Teaching Award**. ACES The Ohio State University
1997-1998	**Environmental Toxicology Scholar**, University of Illinois.
1996	**Outstanding Student Presentation**, Society for In Vitro Biology Meeting, San Francisco, CA.
1995	**Ruth A. Wardall Fellowship**, School of Human Resources and Family Studies, University of Illinois.

Committees

2002-2004	Chair, **Food Agricultural and Environmental Sciences Library Committee,** The Ohio State University

Peer-Reviewed Manuscripts

Chureeporn Chitchumroonchokchai , **Joshua A. Bomser** Jayme E. Glamm and Mark L. Failla (in press) Xanthophylls and α-tocopherol decrease UVB-induced lipid peroxidation and stress signaling in human lens epithelial cells. *Journal of Nutrition.*

Colitz, CMH., Long, AC. And **Bomser, JA** (in press) Apoptotic and necrotic mechanisms of stress-induced human lens epithelial cell death. *Experimental Biology and Medicine.*

Erik R. Olson, Jennifer E. Naugle, Xiaojin Zhang, J. Gary Meszaros, and **Joshua Bomser** (in review) Resveratrol inhibits proliferation of cardiac fibroblasts via inhibition of the ERK 1/2 signaling cascade. *American Journal of Physiology-Heart and Lung*.

Lado, B., **Bomser, J**., Dunne, P., and Yousef, A. (2004) Pulsed Electric Field Alters Molecular Chaperone Expression and Sensitizes Listeria monocytogenes to Heat. *Applied and Environmental Microbiology*, 70(5):2289-2295.

Kent K, **Bomser J.** (2003) Bovine pituitary extract provides remarkable protection against oxidative stress in human prostate epithelial cells.
In Vitro Cell Dev Biol Anim. 39(8):388-394.

Zhang YC, Albrecht D, **Bomser J,** Schwartz SJ, Vodovotz Y. (2003) Isoflavone profile and biological activity of soy bread. *J Agric Food Chem*. 17; 51(26): 7611-6.

Boileau, T., Bray, TM. and **Bomser JA**. (2003) UVA radiation modulates nuclear factor kappa B (NFkB) activity in human lens epithelial cells. *J. Biochem Mol. Toxicol.* 17(2): 108-113.

Kent, K., Harper, WJ. and **Bomser, JA**. (2003) Effect of whey protein isolate on glutathione concentrations and oxidative damage in human prostate epithelial cells. *Toxicology In Vitro* 17, 27-33.

Bomser, J.A. (2002) Ultraviolet radiation selectively induces mitogen-activated protein kinase cascades in Human lens epithelial cells. *J. Biochem Mol. Toxicol.* 16(1), 33-39.

Bomser, J.A., Quistad, G.B. and Casida, J.E. (2002) Chlorpyrifos oxon potentiates diacylglycerol-induced extracellular signal-regulated kinase (ERK 44/42) activation via diacylglycerol lipase inhibition. *Toxicology and Applied Pharmacology* 178, 29-36.

Bomser, J.A and Casida, J.E. (2001) Diethylphosphorylation of rat cardiac M2 muscarinic receptor by chlorpyrifos oxon. *Toxicology Letters* 119, 21-26.

Bomser, J.A. and Casida, J.E. (2000) Activation of extracellular-regulated kinase (ERK 44/42) cascade by chlorpyrifos oxon in Chinese hamster ovary cells. *J. Biochem Mol Toxicol.*. 14(6), 346-353.

Bomser, J.A., Singletary, K.W. and Meline, B (2000) Inhibition of mouse ornithine decarboxylase by polyphenolics from grapes *Chemico-Biological Interactions.* 127(1), 45-59.

Bomser, JA., Singletary, K.W., Wallig, M. and Smith, M.A.L. (1999) Inhibition of TPA-induced tumor promotion in CD-1 mouse epidermis by a polyphenolic fraction from grape seeds. *Cancer Letters* 135(2), 151-157

Madhavi, D.L., **Bomser, J**., Smith, M.A.L., and Singletary, K. (1998) Isolation of bioactive constituents from *Vaccinium myrtillus* (bilberry) fruits and cell cultures. *Plant Science* 131, 95-103.

Bomser, J.A., Madhavi, D.L., Singletary, K.W. and Smith, M.A.L. (1996) In vitro anticancer activity of fruit extracts from *Vaccinium* species. *Planta Medica* 62, 193-198.

Recent Published Abstracts

Olson ER, Zhang XJ, Marsh L, and Bomser J (2003) Direct effects of resveratrol on cardiac fibroblasts: inhibition of calcium signaling, MAPK activation, and cellular growth FASEB Journal 17 (4): A237-A237

King R, Bomser JA (2003) Resveratrol inhibits proliferation of retinal pigment epithelial cells via modulation of MAPK signaling and intracellular oxidant formation
FASEB J 17 (4): A377-A377
Glamm JE, Chitchumroonchokchai C, Bomser JA, et al. (2003) Use of cyclodextrin as a vehicle for loading human lens epithelial and human ciliary body cells with xanthophylls and alpha-tocopherol
FASEB J 17 (5): A758-A758

Kent KD, Bomser JA, Harper WJ (2003) Bovine pituitary, extract protects human prostate epithelial cells against hydrogen peroxide-induced cell damage
FASEB J 17 (5): A1258-A1258

Kent, K.D., Bomser, J.A. and Harper, W.J. (2002) Whey protein isolate increases glutathione levels in human prostate epithelial cells. IFT Annual Meeting Technical Program Abstracts 73-1, 166.

Zhang, Y.C., Albrecht, D., Bomser, J.A., Schwartz, S.J. and Vodovotz, Y. (2002) Isoflavone content and anti-cancer activity of soy bread and its components. IFT Annual Meeting Technical Program Abstracts 84-3, 200.

Boileau, T.W.-M., Bray, T.M. and Bomser, J.A. (2002) UVA radiation modulates nuclear factor kappa B (NF kappa B) activation in human lens epithelial cells. *FASEB Journal* 16: (5), A1161.

Wang, X.Y. and Bomser J.A. (2002) Effects of genistein on epidermal growth factor (EGF)-induced signal transduction and cellular proliferation in human prostate epithelial cells. *FASEB Journal* 16: (5), A1007.

Grants

OARDC seed grant (PI) Effect of lycopene on MAPK signaling in prostate epithelial cells $20,000, 2000-2002

University Seed Grant (PI) Effects of Lutein and Zeaxanthin on Ultraviolet and Near-Ultraviolet Light-Induced Oxidative Stress in Retinal Pigment Epithelial Cells $18,000
2000-2002

OARDC Interdisciplinary Grant (PI) Carotenoids and Age-Related Cataracts $100,000 2001-current

USDA Initiative for Future Agriculture and Food Systems Program (Co-PI)
Model System for Functional Foods: Tomato Products Containing Soy $1,275,000, 2002-Current

CAAPS, National Science Foundation (co-PI) Mechanisms of Microbial Inactivation

by PEF $44,896 2002-2004

Ohio State University Honors and Scholars Program (PI) Food: Fact and Fiction? $4,000, 2003-current

IAMS Company (co-PI) Determination of Carotenoid Levels in Canine Lens Epithelial Cells and Retinal Pigment Epithelial Cells $24,890, 2003-2004

IAMS Company (co-PI) Role of ocular anti-oxidants in cataract prevention in an in vitro lens organ culture model $84,700, 2004-2005