



The Botanicals Workshop Faculty



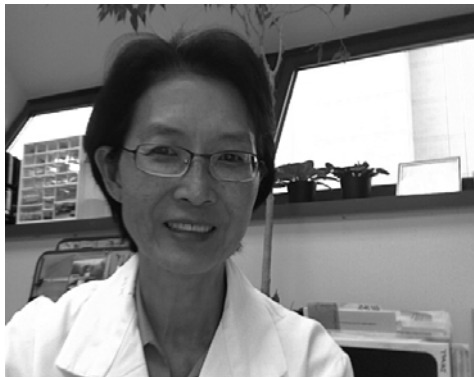
Stephen Barnes, PhD, is a Professor of Pharmacology & Toxicology at the University of Alabama at Birmingham and Co-Director of the Purdue-UAB Botanicals Center for Age-Related Disease. His expertise is in the study of the role of isoflavonoids and other polyphenols in chronic disease. He has been the Director of the UAB Mass Spectrometry Shared Facility since 1993 and uses this technology extensively in the study of botanicals and their protein targets in models of disease. His current project in the Botanicals Center is on the role of grape seed proanthocyanidins and other polyphenols on lens cataracts, in particular the lens crystallins.



Shannon Eliuk is a 4th year graduate student at the University of Alabama at Birmingham in Dr. Helen Kim's lab. She is studying the functional consequences of oxidative post-translational modification of the cytosolic brain isoform of creatine kinase.



Santosh Katiyar, Ph.D., is an Associate Professor of Dermatology at the University of Alabama at Birmingham. His expertise is in the study of causes, mechanisms and chemoprevention of skin diseases including premature aging of the skin and skin cancers, however, he is also extensively working on chemoprevention of prostate and breast cancers. To develop newer and effective chemopreventive agents, he is working on dietary botanicals, such as green tea polyphenols, grape seed proanthocyanidins and silymarin from milk thistle and using *in vitro cell culture as well as in vivo* animal and human model systems. Email: skatiyar@uab.edu



Helen Kim is a native of Seoul, South Korea; she obtained her BS in Chemistry from Mary Washington College of the University of Virginia, a Master of Forest Science from Yale University School of Forestry & Environmental Studies, and a PhD in Biophysics from the University of Virginia. She is currently Associate Professor in the Department of Pharmacology & Toxicology at the University of Alabama at Birmingham, where she also co-directs the UAB Comprehensive Cancer Center Proteomics/ Mass Spectrometry Shared Facility.

Her research applies proteomic approaches in studying the health benefits and actions of polyphenol-enriched dietary supplements such as grape seed extract in animal models of neurodegeneration and other chronic diseases. Dr. Kim also directs/codirects proteomics core support for several other UAB NIH-funded centers, the Polycystic Kidney Disease Research Core (Guay-Woodford, PI), the Skin Disease Research Core (Elmets, PI), and the Center for Nutrient-Gene Interactions in Cancer Prevention (Barnes, PI).



Aimee Landar, Ph.D., is currently an Instructor in the Department of Pathology. Her current research focus is using proteomics approaches to determine the proteins which are modified by oxidative stress. Interests include protein thiol modification by electrophilic lipids and reactive oxygen and nitrogen species. She is developing techniques to overcome the technical challenges of identifying members of the proteome which form adducts with electrophilic lipids, the “electrophile responsive proteome.” This proteome is altered under conditions of oxidative stress and may be important in mediating redox cell signaling.



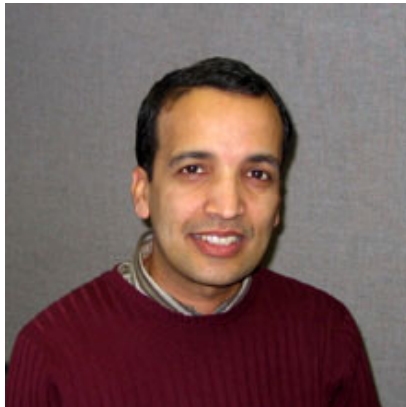
Dr. Sreelatha Meleth is an Associate Professor in the Medical Statistics Section of the Department of Medicine, and is an Associate Scientist and Biostatistician in the NIH-NCI designated UAB Comprehensive Cancer Center. She is responsible for providing statistical consultation for Drs. Grizzle in EDRN (Early Detection Research Network) and Dr. Manne and his colleagues in the Pathology Department. Dr. Meleth is a member of the Cancer Center's G.I. Working Group. Dr. Meleth has developed strong expertise in proteomic data analysis and is currently responsible for supporting several proteomic related projects particularly those associated with the

Center for Gene-Nutrient Interaction in Cancer Prevention.



James Mobley, Ph.D., is an Assistant Professor of Surgery in the Department of Urology at the University of Alabama at Birmingham where he is the Director of Urologic Research, and Co-Director of Mass Spectrometry. His graduate work was completed in the area of Medicinal Chemistry at The Ohio State University with a focus on the role of estrogens in the initiation and progression of breast cancer. Similarly, work at the University of Massachusetts Medical School involved the identification of selective estrogen receptor β modulators for the treatment of prostate cancer, in addition to developing proteomic applications for biomarker discovery applications. This work was expanded upon at Vanderbilt University in area of HTP proteomics for translational research. Current projects

involve “directed” and “non-directed” translational applications for the early detection and treatment of urologic malignancies.



Jeevan Prasain, PhD, is an Assistant Professor of Pharmacology & Toxicology at the University of Alabama at Birmingham and a member of the Purdue-UAB Botanicals Center for Age-Related Disease. His expertise is in the use of mass spectrometry in the study of metabolism, pharmacokinetics and bioavailability of isoflavonoids and other polyphenols in vitro and in vivo studies. His current research focus is on the anti-diabetic effects of puerarin (daidzein-8-C-glucoside) in animals.



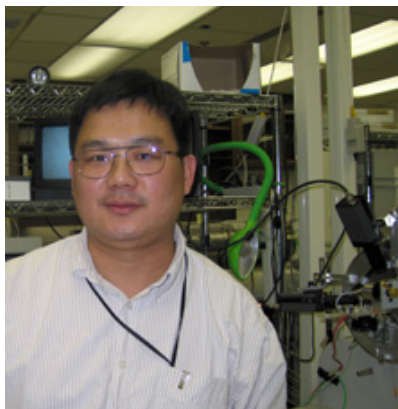
Matthew Renfrow, PhD, is an Assistant Professor of Biochemistry and Molecular Genetics at the University of Alabama at Birmingham. His expertise is in the use of high resolution mass spectrometry to study post translational modifications and transcription complexes. He is also the Director of the recently commissioned (August 2005) UAB Biomedical FT-ICR MS Laboratory. His current projects are on the study of aberrant *O*-glycosylation of IgA1 found in IgA nephropathy patients and the study of a variety of transcription related complexes involved in histone modification, stem cell differentiation, and rxr nuclear receptors.



Erin Shonsey is a 5th year graduate student at the University of Alabama at Birmingham in Dr. Stephen Barnes lab. She is studying the effect of amino acid mutations and post-translational modifications on the function of human bile acid CoA:amino acid N-acyltransferase (hBAT).



Om Srivastava, Ph.D., is a professor in Department of Vision Sciences at the University of Alabama at Birmingham. His major research interest is on age-related eye-diseases in the lens (cataract) and in the cornea (keratoconus). He is a co-investigator with Dr. Stephen Barnes in the Project 3 of the Botanical Center NIH grant on the role of grape seeds proanthocyanidins and other polyphenols in prevention of oxidative damage to lens crystallins during aging and cataract development. He is also the principal investigator on a NIH-funded grant entitled “Proteinase Inhibitors & Crystallin Fragments in Cataract”.



Chao-Cheng (Sam) Wang, Ph.D, is an Assistant Professor in Department of Dermatology at the University of Alabama at Birmingham. His research interest is focused on the development of *in-vivo* biological sampling and microscale analytical methods. Currently, he is closely involved in the In-vivo Bioavailability Core and the Project studying beneficial effects of botanical supplements on age-related ocular diseases in the Purdue-UAB Botanicals Center. He is also developing techniques for dynamic proteomics analysis of extracellular microenvironment during progress of skin diseases.



Dr. David J. Waters received his BS (1980) and DVM (1984) degrees from Cornell University and his PhD degree from the University of Minnesota (1992). He is currently Professor of Comparative Oncology in the School of Veterinary Medicine and Associate Director of the Center on Aging and The Life Course at Purdue University. Since 2000, Dr. Waters has served as Executive Director of the Gerald P. Murphy Cancer Foundation, a not-for-profit organization located in the Purdue Research Park that is committed to defeating cancer and other age-related diseases through basic, comparative, and clinical research. He is nationally recognized for his work on utilizing pet dogs as models of human aging, and is an expert on the

comparative aspects of prostate cancer in men and dogs, the only two species susceptible to naturally-occurring prostate cancer. As a teacher, Dr. Waters has contributed significantly to Purdue's Dual Title PhD Program in Gerontology, serving as professor of record of several graduate courses including "The Biology of Aging". His course "Lifestyle and Age-related Diseases in the News" has been instrumental in identifying some of the problems plaguing the process of communicating health-related news to the public. In 1999, he was the recipient of a prestigious Brookdale National Fellowship in recognition of his potential as a leader in the field of gerontology. His research has been funded by the National Institutes of Health, Department of Defense Prostate Cancer Research Program, American Cancer Society, and industrial sources. Dr. Waters' research findings have been published in a variety of high impact scientific journals, including *Journal of the National Cancer Institute*, *Journal of Gerontology*, *Carcinogenesis*, *Prostate*, *Cancer Epidemiology Biomarkers and Prevention*, and *Cancer*. In collaboration with Purdue's Center on Aging, The Murphy Foundation's Center for Exceptional Longevity Studies has established the first database tracking exceptionally long-lived pet dogs to study the genetic and non-genetic factors that regulate exceptional longevity. This effort directly complements ongoing research by Perls and colleagues on human centenarians.



J. Michael Wyss, PhD is a professor in Department of Cell Biology at the University of Alabama at Birmingham.

The Role of the Central Nervous System in the Pathogenesis of Hypertension - These studies tests the mechanisms by which a decrease in norepinephrine release in the anterior hypothalamic nucleus leads to salt-sensitive hypertension. We also demonstrated learning and memory mechanisms that are disturbed in association with hypertension. These studies have also demonstrated that both endogenous and plant-derived estrogens decrease hypertension and increase learning and memory, and that other polyphenols from plants have similar

effects, despite lacking significant estrogenic activity. These studies employ whole animal integrated physiology, monitoring in awake, freely moving rats and mice, transgenic mouse models, microdialysis in awake rats and mice, neuronal recordings, molecular detection of neuronal activity, NMR, tests of cognition and motor/sensory function, Immunochemistry, in vitro methods, etc..