

Quantitative Exposome Core
Cutting-Edge Analysis in enhancing teaching, research, and corporate relations

Lead contacts:

School of Public Health

Name: **Thomas J. McDonald, Ph.D. and Virender K. Sharma, Ph.D.**
Department: Environmental and Occupational Health
Email address: tmcdonald@sph.tamhsc.edu, vsharma@sph.tamhsc.edu
Phone number: 979-436-9425, 979-436-9323

AgriLife

Name: **Stephen Talcott, Ph.D.**
Department: Nutrition and Food Science
Email address, Phone Number: stalcott@tamu.edu, 979-862-4056

College of Engineering

Name: **Robin L. Autenrieth, Ph.D., P.E.**
Department: Civil Engineering
Email address, Phone Number: r-autenrieth@tamu.edu, 979-862-1967

Key Participating units:

School of Public Health: Environmental and Occupational Health and Public Health Practice
AgriLife: Nutrition and Food Science, Soil and Crop Sciences
College of Veterinary Medicine, VIBS and GI Diagnostic Laboratory
College of Engineering, Department of Civil Engineering

Key Team members or co-investigators:

Name	College
Drs. Leslie Cizmas, Natalie Johnson, Jennifer Ross	Public Health
Drs. Joseph Awika, Rod Dashwood, Susanne Talcott, and Suresh Pillai	COALS and CoM
Dr. Bella Chu	CoE
Dr. Jan Suchodolski and Dr. Ivan Rusyn	CVM

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Abstract. With the advent of modern sequencing technology, the “omics” field has flourished. However, a fundamental challenge remaining is the ability to quantify comprehensive environmental exposures, including dietary, that significantly impact human and ecological health. This concept, termed the “exposome”, complements genomic data to better understand the long-term implications of complex environmental exposures that to chronic diseases. Our request is for state-of-the-art analytical chromatographic instruments (GC, IC, GC/MS-MS, and LC/MS-MS) to significantly enhance the instruments currently available in our laboratories and to create a shared service for TAMU researchers working with emerging environmental contaminants. These shared analytical capabilities will greatly enhance the ability of multiple interdisciplinary research teams to obtain funding from NIH, NIEHS, NSF, USDA, NIB, and private corporations that all require advanced chemical profiling of compounds and their metabolic fates. Another primary benefit is to expose undergraduate and graduate students to cutting-edge analytical techniques, applied in a wide variety of disciplines, to better understand the environmental and human health implications of an extensive range of complex mixtures. With this cutting-edge core, TAMU researchers will have the tools to become leaders in exposure biology and chemistry and can confront the outstanding challenge of quantifying environmental exposures.