Abstract
Existing in different forms, arsenic has been used in traditional medicines for various diseases since ancient times, yet arsenic can be highly toxic. Historical cases and results from recent studies are evident that co-exposure to arsenic and alcohol causes severe damage to the cardiovascular system. We aim at understanding the molecular mechanism of the combined impact of arsenite and alcohol on the blood vessels. Our latest studies demonstrated that reactive oxygen species and cytochrome P450 2E1 are involved in the combined toxicity. The findings provide new insight into understanding arsenic toxicity and reducing arsenic toxicity in Traditional Chinese Medicine (TCM).

About the speaker
Dr Honglian Shi works as an Associate Professor of Pharmacology and Toxicology at School of Pharmacy, University of Kansas, Lawrence, Kansas. He serves as Director of the Pharmacology and Toxicology Graduate Program. His research focuses on the mechanisms of redox regulation in ischemic stroke and chronic arsenic exposure. His team has established how the transcription factor HIF-1 is regulated in ischemic brains and discovered new pathways to prevent its degradation. In addition, he is interested in discovering new drugs from natural products and Traditional Chinese Medicine. He has published over 70 peer-reviewed original research articles, review articles, and book chapters in his research fields. As principal investigator and co-investigator, Dr. Shi has been awarded grants in the fields of ischemic stroke, diabetes, and arsenic toxicity by NIH NINDS, NIDDK, NCRR, NIEHS, American Heart Association, and National Science Foundation of China (NSFC). He has been reviewing grant applications for many agencies including NSF, NSFC, Swiss NSF, Italian Ministry of Health, GIF, the National Science Center of Poland, etc.