EHS & The Molecular Toxicology IDP Present:
Multi-Tissue, Multi-Omics Systems Biology to Understand and Predict Toxicity

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12 p.m. in 43-105 CHS

About the lecture: Environmental contaminants and drug molecules modify disease burden and health outcomes through complex interactions with host tissues, cells, and molecules. Systems biology approaches that investigate the multi-tissue multi-dimensional molecular actions of toxins and drug entities in an unbiased, data-driven manner are powerful to capture the full realm of molecular perturbations in individual tissues and across tissues to inform on key biological targets and pathways. This lecture will focus on recent multi-tissue, multi-omics systems biology study of prenatal BPA exposure, which has offered unique insight into the molecular connections between BPA exposure and cardiometabolic diseases. It will also describe a new bioinformatics platform, PharmOmics, which utilizes species- and tissue-specific omics data to understand the molecular activities of existing drugs and to predict a broad range of adverse drug reactions.

About the speaker: Dr. Xia Yang was trained in multi-disciplinary fields, including pharmacy during undergraduate education, molecular genetics and bioinformatics during Ph.D. studies, and integrative genomics during postdoc training. She worked as Senior Research Scientist at Merck & Co. and Group Leader and Principal Scientist of Systems Biology at Sage Bionetworks before joining the Department of Integrative Biology and Physiology at UCLA as a faculty member. Her research focuses on connecting environmentally-driven disease pathobiology with genetically-driven disease mechanisms using systems biology approaches.