UC RIVERSIDE

DEPARTMENT OF BIOCHEMISTRY FACULTY RECRUITMENT CANDIDATE SEMINARS:

Assistant Professor in Biochemistry

Pei Su, Postdoctoral Fellow, Northwestern University

Research Seminar:
Tuesday, January 14, 2025 | 12:00 p.m. – 1:00 p.m.

Seminar Title: "Unravelling the Spatial and Single Cell Proteome Using Single Molecule Mass Spectrometry"

Abstract: "Proteoforms" are significantly unexplored molecular channels for biomarker discovery and disease diagnostics. Mass spectrometry (MS) is advantageous for proteoform measurement by accurate determination of molecular masses and connectivity of amino acid sequences and modifications. Proteoform imaging MS (PiMS) using nanospray desorption electrospray ionization (nano-DESI) coupled to Orbitrap-based single molecule MS (I^2MS) enables highly-multiplexed imaging and identification of tissue proteoforms up to 70 kDa. These proteoforms not only discern tumor margins in ovarian cancer tissues at ~20 μm spatial resolution, but also report cellular neighborhood of human kidney, contributing to our knowledge in reference tissue atlases. PiMS has also been augmented for high-throughput single cell profiling at a speed of >1000 cells per day, enabling proteoform-based cell typing in complex cell mixture of rat brain hippocampus including rare resident immune cells.

Biography: Pei Su is an NIH K99/R00 postdoctoral fellow at Northwestern University. He earned a B.S. in Chemistry at Fudan University followed by a Ph.D. in Analytical Chemistry in 2020 from Purdue University with Prof. Julia Laskin. During his postdoc, he joined the Kelleher Lab at Northwestern developing new techniques in spatial and single cell proteoform profiling. He has received a few competitive awards including the American Society for Mass Spectrometry (ASMS) graduate student award and postdoctoral career development award. He has recently received the NIH Pathway to Independence (K99/R00) Award from the National Institute of Allergy and Infectious Diseases.

In-Person Seminar Location: Genomics Auditorium 1102A

ZOOM Link for Seminar: https://ucr.zoom.us/j/93686206205
Meeting ID: 936 8620 6205 | **Passcode:** 924874

Host: Dr. Jikui Song