Dear Faculty, Postdocs, Students, and Friends:

You are cordially invited to attend a special seminar presented by the Institute for Integrative Genome Biology

UC RIVERSIDE | UNIVERSITY OF CALIFORNIA Institute for Integrative Genome Biology

Dr. Dorothee Staiger

RNA Biology and Molecular Physiology

Bielefeld University

TITLE: "Ribonomics to decipher RNA-based regulation in Arabidopsis thaliana"

DATE: Friday, February 25, 2022
TIME: 12:00 pm PST

MEETING ID: 924 2795 4599 PASSCODE: 777538

Host: Dr. Xuemei Chen

Abstract: RNA-based regulation emerges as a key factor shaping the transcriptome. We are studying the function of the circadian clock-regulated Arabidopsis thaliana glycine-rich RNA-binding protein7 (AtGRP7) involved in circadian timekeeping, flowering time control, and pathogen defence. To determine the in vivo target transcripts and binding sites genome-wide we have for the first time adapted Individual nucleotide resolution crosslinking and immunoprecipitation (iCLIP) to plants. Transgenic plants expressing AtGRP7-GFP were subjected to UV crosslinking to preserve RNA-protein interactions. Upon immunoprecipitation of AtGRP7-GFP from plant lysates with GFP Trap beads®, bound RNAs were identified by Next generation sequencing and binding sites were determined at nucleotide resolution. I will discuss

insights into mechanisms how AtGRP7 affects its targets, Furthermore, I will report on a role of AtGRP7 in regulating the biogenesis of selected microRNAs. Finally, I will present experiments aimed at assembling a compendium of binding sites for a suite of regulatory RNA-binding proteins. Overall, our data provide insights into posttranscriptional regulation in Arabidopsis.