ACS Local Section
New York
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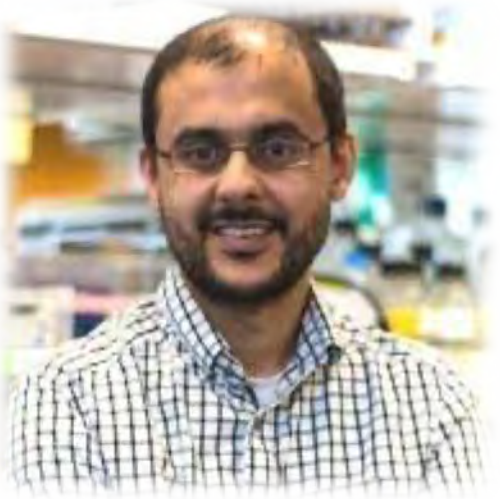
Mechanisms of protein internalization and degradation at the lysosomes through the ESCRT pathway



Speaker: **Dr. Sudeep Banjade**
Weill Institute for Cell and Molecular Biology
Cornell University

Date: **Thursday, October 21, 2021**
RSVP by October 14, 2021

Time: 5:30 PM via Zoom

Abstract
Cells constantly remodel and recycle their components to maintain homeostasis. Among the various mechanisms of this kind of cellular quality control, the multivesicular pathway (MVB) is one of them. Cells use the MVB pathway to transport membrane proteins to the lysosome for degradation and recycling. The ESCRT (endosomal sorting complexes required for transport) machinery is a family of proteins involved in the formation of multivesicular bodies (MVBs). In addition, the ESCRT proteins are also involved in several other biological pathways beside the formation of MVBs, which include cytokinesis, virus budding, membrane repair and so on. Therefore, the ESCRT complexes work at several locations in the cell to maintain cellular homeostasis. In this talk I will discuss my recent work on understanding some of the physicochemical principles behind the assembly of the ESCRT machinery at membranes. I will also explain how multivalent interactions between one of the ESCRT components (ESCRT-0) and its substrate induces liquid-liquid phase separation (biomolecular condensation) of the components, and how this property may define the initiation of the formation of ESCRT assembly at membranes. The talk will also discuss how multivalent interactions in this system helps efficient ESCRT function in yeast organelles.

Biography
Dr. Banjade is a Postdoctoral Fellow at the Weill Institute for Cell and Molecular Biology, Cornell University, Ithaca, NY. His research interests include cellular quality control and cellular compartmentalization. He obtained his bachelor's degree at Fairleigh Dickinson University, where he was a Fairleigh S. Dickinson Scholar and an Honors student. He obtained his PhD in Molecular Biophysics at UT Southwestern Medical Center at the Department of Biophysics. His graduate work earned him the Kaluza Award from American Society of Cell Biology (ASCB). His postdoctoral work is supported by Damon Runyon Cancer Research Foundation.

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