BIOCHEMISTRY SEMINAR SERIES

“Opening Windows into the Cell: Bringing Structure to Cell Biology Using Cryo-electron Tomography”

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To perform their function, biological systems need to operate across multiple scales. Current techniques in structural and cellular biology lack either the resolution or the context to observe the structure of individual biomolecules in their natural environment, and are often hindered by artifacts. Our goal is to build tools that can reveal molecular structures in their native cellular environment. Using the power of cryo-electron tomography to image biomolecules at molecular resolution in situ, we are building tools to make compatible with, and directly comparable to, biophysical and cell biology experiments, capturing the structural behavior of macromolecules in action under controlled conditions. I will show how we used these techniques to reveal the structure of LRRK2, the greatest known genetic contributor to Parkinson’s disease, and to unveil the molecular architecture of processes in bacterial cell biology.

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via Zoom

3:30 pm

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