Division of Biology and Biological Engineering

Moore Seminar

Friday, November 19 2024
12 pm
Reception at 11:30 am
Chen 100

Ron Diskin

Professor/Moore/Merkin Institute Co-Sponsored Fellow

Department of Chemical & Structural Biology

Weizmann Institute of Science

"The intricate cell entry mechanisms of arenaviruses"

Arenaviruses are a large group of viruses that circulate in animal reservoirs, several of which can infect humans through zoonotic transmission, leading to severe and often fatal hemorrhagic fevers. In our lab, we focus on one of the most clinically significant arenaviruses: the Lassa virus, an endemic threat in West Africa that causes Lassa fever. Our research centers on understanding the viral glycoprotein spikes—key proteins that mediate transmission by enabling the virus to enter host cells. These spikes exhibit a unique membrane organization that includes their signal peptide, crucial for cell entry.
Employing structural biology, we investigate how arenaviruses identify, engage with, and gain entry into host cells, with a particular focus on the role of the transmembrane region in this process. In my talk, I will share both our foundational insights and our latest efforts to reveal the dynamic conformational shifts these spikes undergo during cell entry—a complex choreography essential for infection. Our findings provide promising directions for developing therapeutic interventions against arenaviral diseases.

Faculty Host: Pamela Bjorkman