STRUCTURAL and COMPUTATIONAL BIOLOGY and BIOPHYSICS

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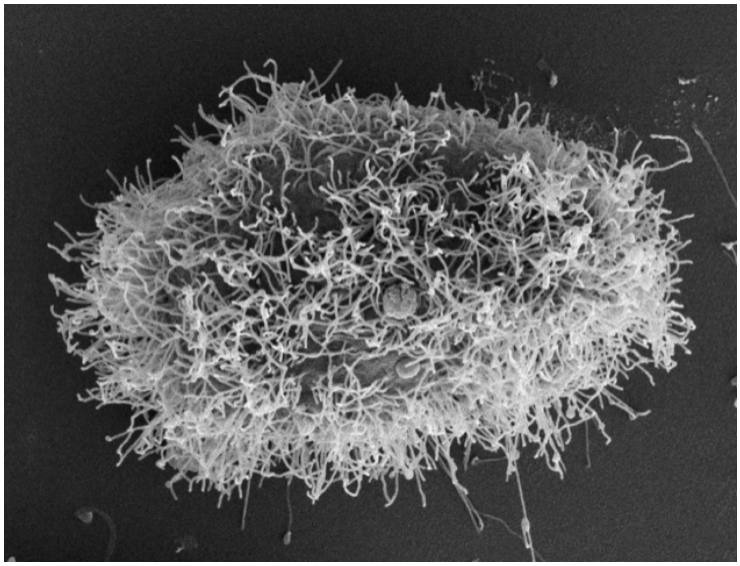

"Filovirus Lipid Gymnastics at the Plasma Membrane Interface"

Abstract

The major systems to be queried in these studies are filoviruses including EBOV and Marburg virus (MARV). Filoviruses are lipid-enveloped and contain a negative-sense RNA genome that encodes seven genes. Of these seven genes, just one, the viral matrix protein VP40 is needed to form virus like particles that resemble authentic virions. VP40 is also known to alter host cell lipid metabolism and can form distinct protein structures in the viral life cycle that have been proposed to have different functions. The complex nature by which one viral protein and its different structural conformations permit efficient replication and multinodal interactions with host proteins and lipids will involve exploration of the following questions. 1) What are the host cell network determinants of VP40's role in altering lipid distribution and packaging the lipid envelope? 2) Does VP40 have structural specific interactions with lipids and host proteins to alter host cell lipid metabolism. 3) Lastly, is alteration of host cell lipid metabolism targetable with therapeutics?

Wednesday, October 31st

1:30PM in MJIS 1001

DEPARTMENT OF BIOLOGICAL SCIENCES