

# The Keck Seminar

presents:

## Cryo-EM – a tool to investigate membrane architecture at the nanoscale

This talk will emphasize our recent efforts to characterize the structural features of synthetic and biological membranes using cryo-electron microscopy (cryoEM). Data will be presented that first addresses what the resolving capacity is for cryoEM in discriminating the thickness of synthetic membranes reconstituted into small (50-150 nm) unilamellar vesicles, calibrated by comparisons to x-ray and neutron scattering data. From there, results from vesicles prepared from more complex mixtures of phospholipids, known to form laterally organized ordered and disordered domains, will be presented. Results from the analysis of vesicles prepared from plasma membranes of mammalian cells, whose lipid and protein content captures the complexity of biomembranes, were analyzed for evidence of ordered/disordered domains. Briefly, the results showed that cryoEM can resolve differences in membrane thickness of a few angstroms and that ordered and disordered domains can be resolved and quantified in both synthetic and complex and biologically derived plasma membranes. Time permitting, preliminary efforts to extend the analysis to “native” membranes in cryo-preserved organelles and cells will be discussed. [Click here](#) to learn more.



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**Friday, February 19, 2021**

**4:00 -5:00 pm CST**

**Gulf Coast Consortia**  
QUANTITATIVE BIOMEDICAL SCIENCES

[gulfcoastconsortia.org](http://gulfcoastconsortia.org)

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**LINK to join:**

<https://riceuniversity.zoom.us/j/99900150060?pwd=OGpKVjFjazhSZ1BYU1N2ekJxLOVWZz09> (Meeting ID: 999 0015 0060; Passcode: 464240)

OR [CLICK HERE](#) to REGISTER and add a calendar invite