

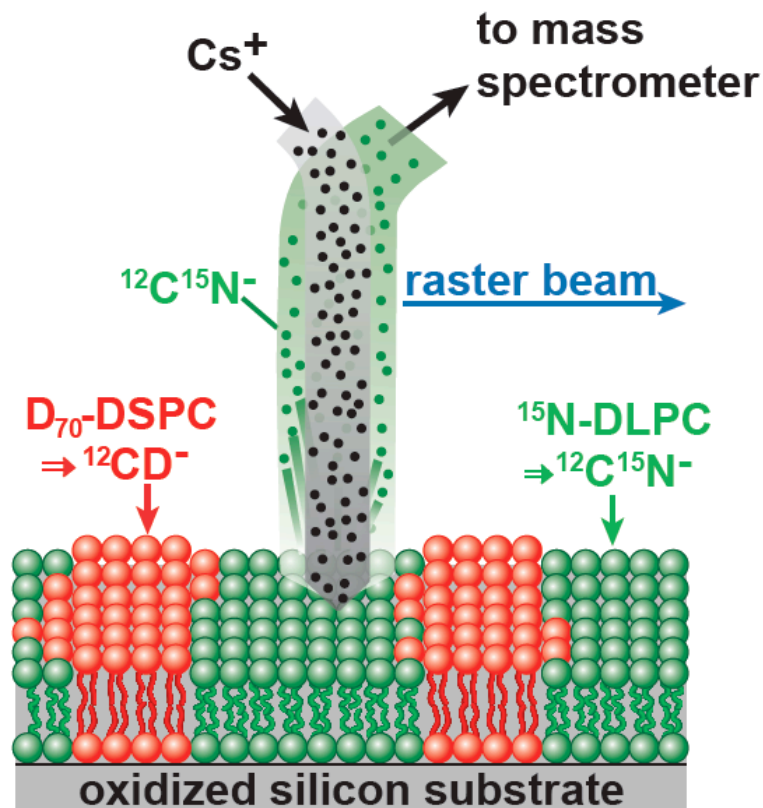
# NANO HOUR

Wednesday, October 21, 2009 3:00 pm  
Beckman Institute - Room 3269

## Nanometer-scale secondary ion mass spectrometry imaging of model and cellular membranes

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The eukaryotic cell membrane is believed to have a heterogeneous organization, containing microdomains enriched in cholesterol and certain types of lipids that play a role in many cellular functions such as signaling, transport, and adhesion. Elucidating the distribution of membrane components may contribute to understanding these processes but is hindered by a lack of amenable analytical techniques. Over the past decade, secondary ion mass spectrometry (SIMS) has become a valuable tool for interrogating biological samples. Here, a specialized type of SIMS, nanometer-scale SIMS (nanoSIMS), is used to reveal the elemental and isotopic composition of supported lipid bilayers (cell membrane models) and real cell membranes with a lateral resolution  $<100$  nm. NanoSIMS is employed to visualize the effect cholesterol has on lipid mixing within ternary mixture phase-separated supported lipid bilayers. Furthermore, it is used to visualize lipid components within the membrane of preserved murine fibroblast cells.



Coffee and Cookies will be served  
<http://nanohour.beckman.uiuc.edu>