# SEMINAR IN PHYSICS

FRIDAY, April 15, 2016

3:30-4:25 · Ross 0220

~ Refreshments! ~

## Developing a Model: Re-entry into the Earth's Atmosphere

Taylor McMillan, UNC Physics Student

We have developed an atmospheric re-entry model that will be used to inform the design of a re-entry probe. From this model, we are able to approximate the forces and heat generation this probe will experience during the flight. This project is funded by NASA through the Colorado Space Grant Consortium.

## Production of Uniformly Sized Microbubbles

Shelby Burns, UNC Physics Student

Uniformly-sized preparations with average microbubble (MB) diameters from 1 μm to 3 μm were produced reliably by sonicating decafluorobutane-saturated solutions of serum albumin and dextrose. Detailed protocols for producing and size-separating the MBs are presented, along with the effects that changing each production parameter (serum albumin concentration, sonication power, sonication time, etc.) had on MB size distribution and acoustic stability. Methods for improving existing protocols and biomedical applications of MBs will also be discussed.