1109-92-281 **M. Gregory Forest*** (forest@unc.edu), Department of Mathematics, CB 3250, Chapel Hill, NC 27599-3250. *Mathematics of Living Fluids.*

This talk will highlight several collaborations in biology where experimental advances, including microscopy, provide unprecedented insight into living fluids and other fluids fundamental to life. Yeast and mammalian cells are two living fluid examples, and mucus is a fluid fundamental to life that coats every organ in the human body not covered by skin. The mathematical challenges include analysis of the data but also the development of mechanistic models that could be of predictive value beyond experiments. The experiments, data, relevant biology, and our mathematical progress will be presented. My numerous collaborators will be recognized throughout the lecture. (Received February 03, 2015)