

**Texas Tech University
Department of Chemical Engineering
Seminar Schedule**



Ten Puzzles of the Airway Surface Layer

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Abstract

The classical view of the airway surface layer (ASL) of lungs is that it consists of two layers – the mucus and periciliary layer (PCL). Mucus layer is propelled by cilia and rides on the top of PCL, which is assumed to be a low viscosity dilute liquid. This model of ASL does not explain what stabilizes the mucus layer and prevents it from penetrating the PCL. I propose a different model of ASL in which PCL consists of a dense brush of mucins attached to cilia. This brush stabilizes the mucus layer and prevents its penetration into PCL while providing lubrication and elastic coupling between beating cilia. Both physical and biological implications of the new model and the remaining puzzles will be discussed.

Fri April, 26

3:00 pm

Livermore 101