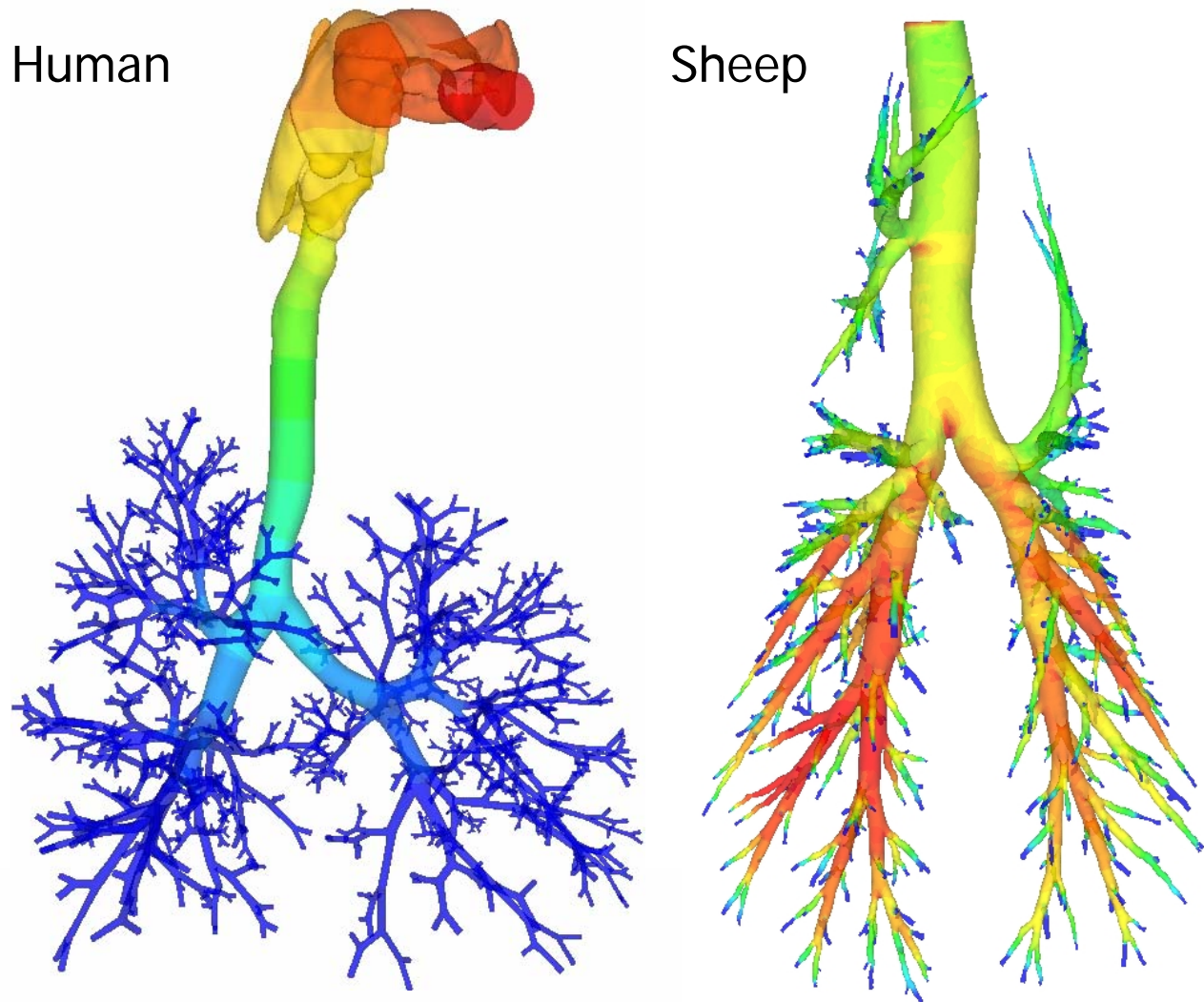


# Multi-scale Simulation of Pulmonary Air Flow



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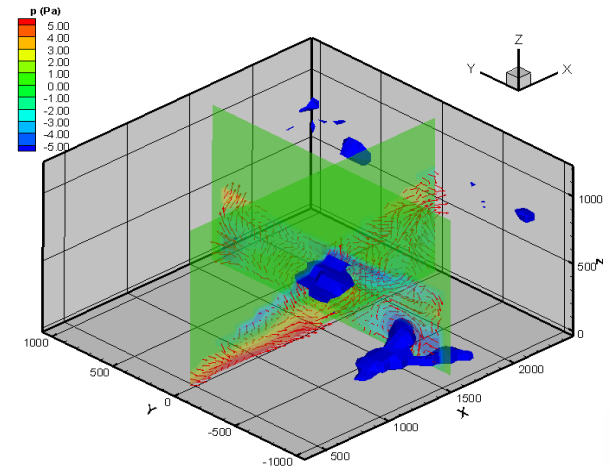
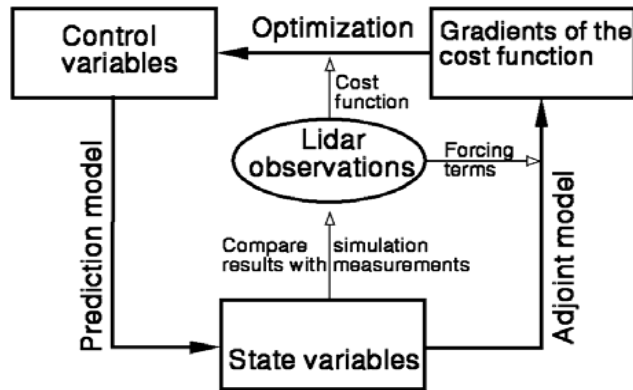
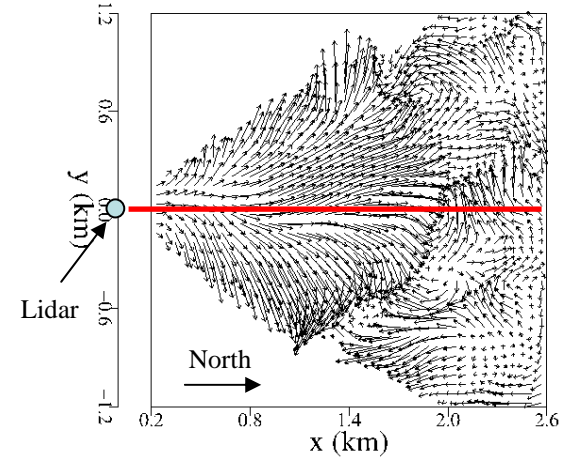
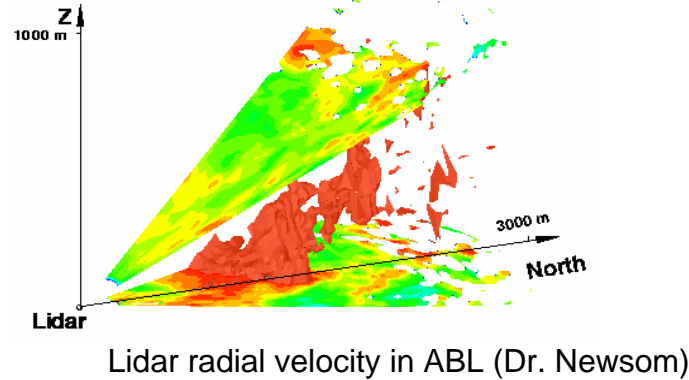
NIH R01 EB005823  
NIH R01 HL064368

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- <http://www.engineering.uiowa.edu/~ching>



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# 4D Variational Data Assimilation



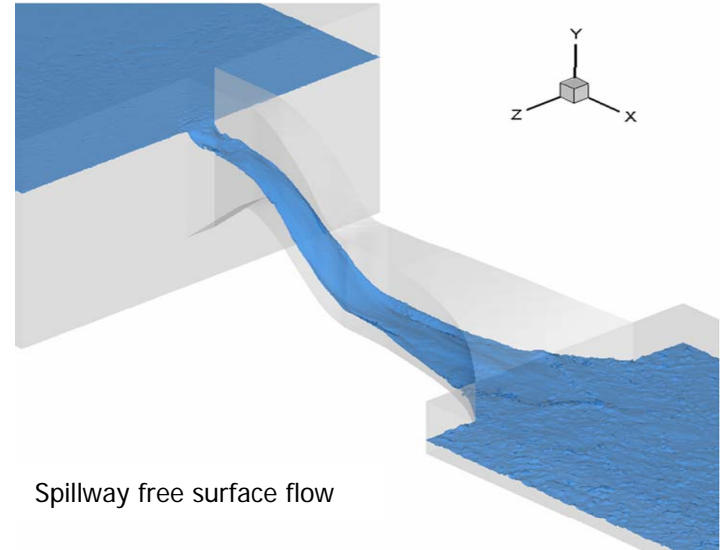
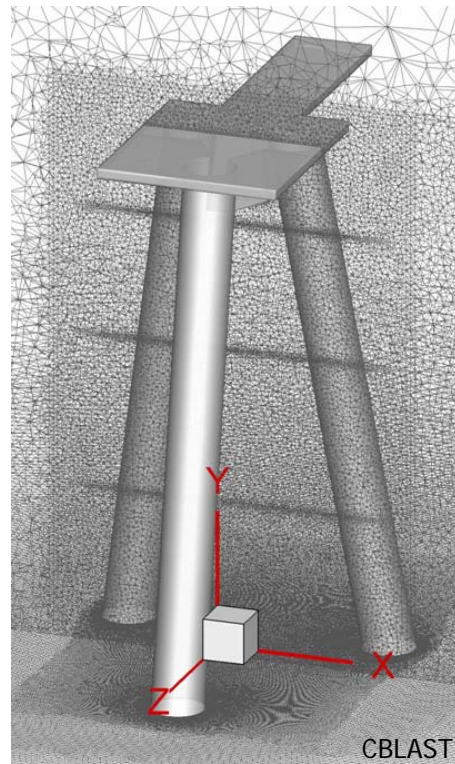
NSF ATM-0352193  
NSF ATM-9874925  
(CAREER)

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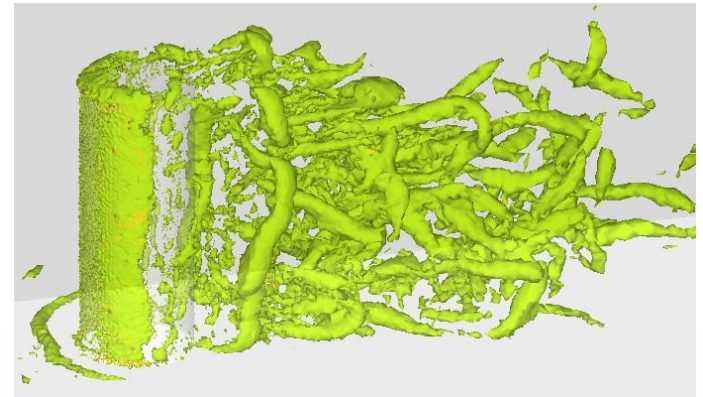
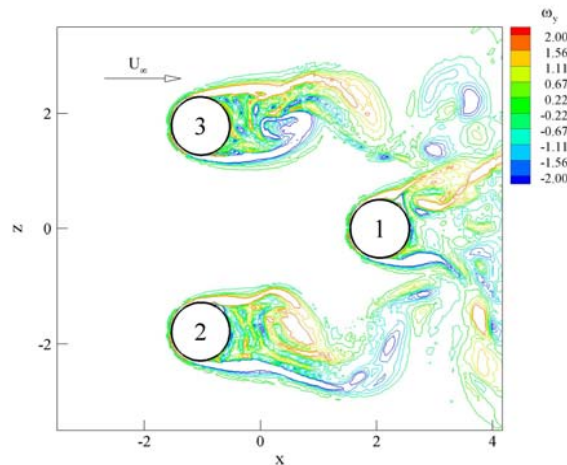
# Large-Eddy Simulation & Two Phase Flow



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Spillway free surface flow



Coherent vortices in flow over a cylinder

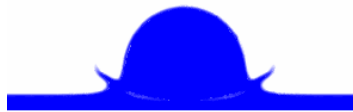
ONR N00014-05-1-0295

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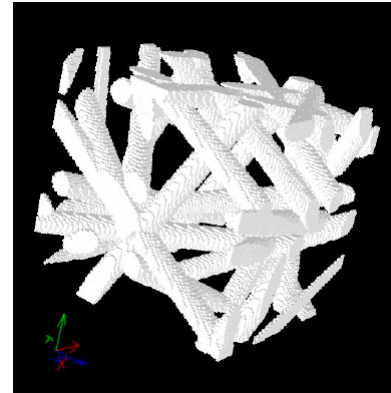
# Mesoscopic Lattice Boltzmann Simulation



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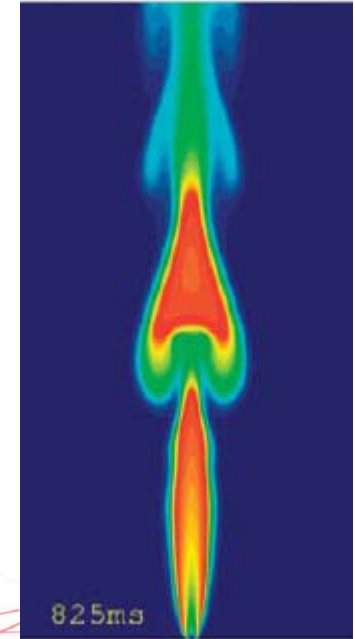
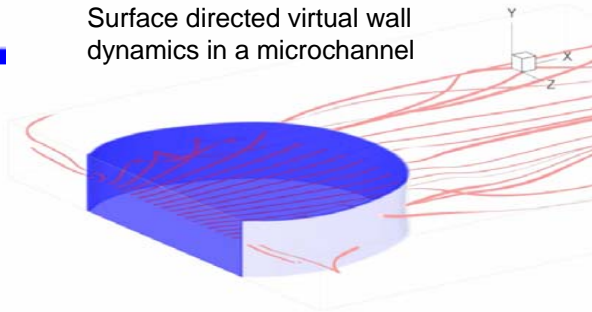


Impact of a liquid droplet on a thin liquid film



Micro flow through a fibrous porous media at various Knudsen number

Surface directed virtual wall dynamics in a microchannel



Laminar jet diffusion flame

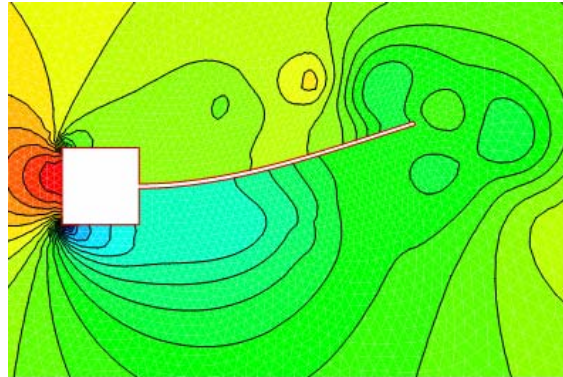
UI CARVER

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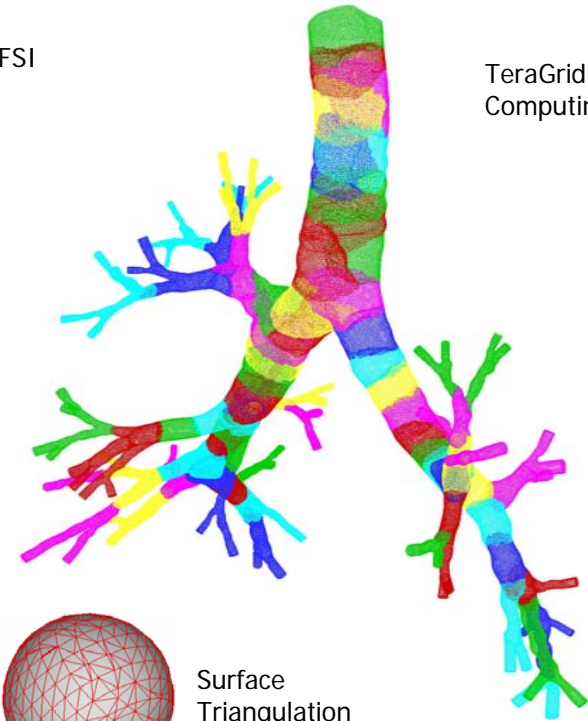


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# Fluid-Structure Interaction, Particulate Flow, Parallel Computing & Geometric Modeling

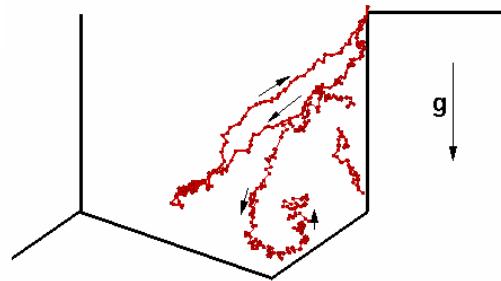


2D FSI

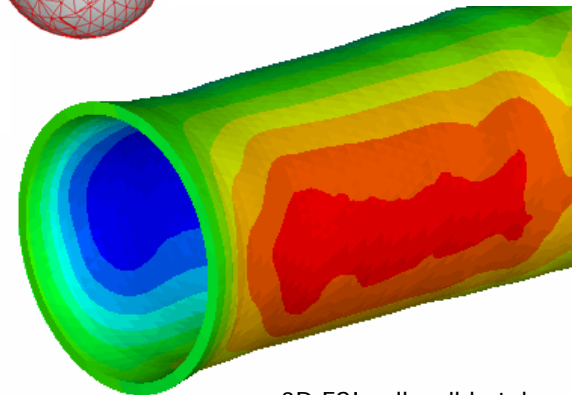


TeraGrid Computing

Surface Triangulation



Aerosol transport in 3D alveolar sacs with moving walls



3D FSI collapsible tube

NIH R01 EB005823  
NSF TeraGrid