Lung Informatics for Evaluation of Inflammation, Disease, and Aging

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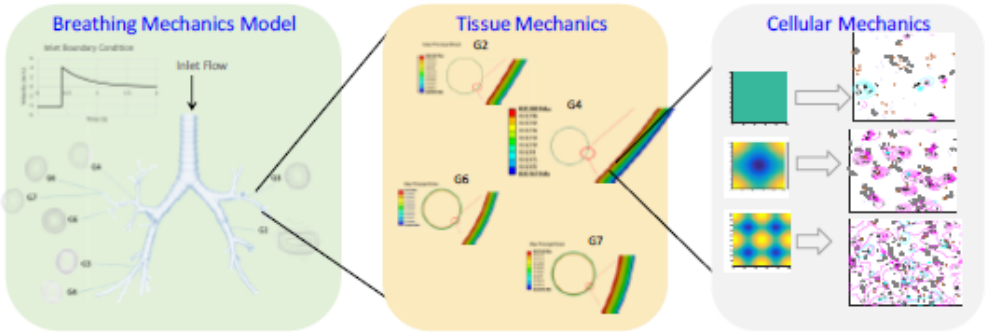
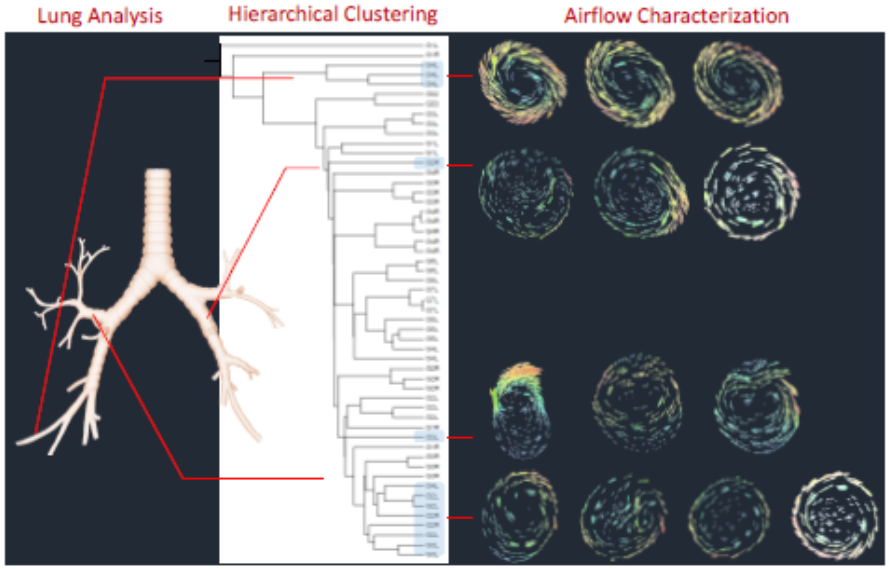
Abstract

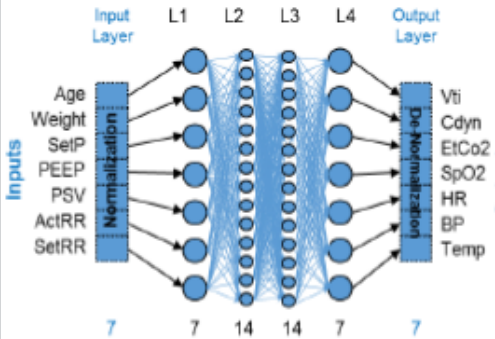
Quantitative analysis through lung models, computational simulations and imaging data that correlates to inflammation, disease and aging is being conducted at DICE (Design Informatics and Computational Engineering) lab in the College of Engineering. Specifically, informatics tools including cluster analysis, data analytics, image analysis, computational simulations, artificial intelligence, quantum graph models, and particle swarm optimization are being developed for multiple applications.

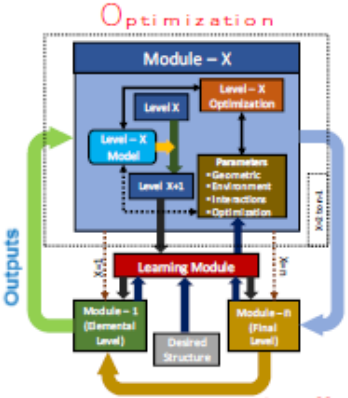
Multiscale Study of the Respiratory Mechanics for Cellular Inflammation

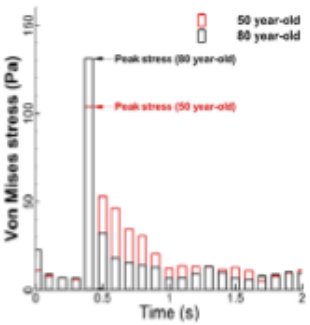




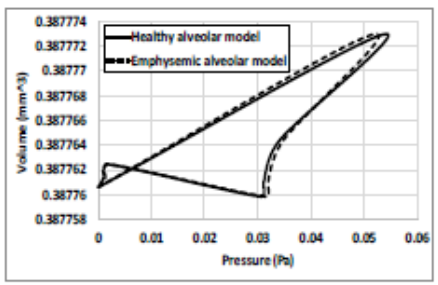
Ventilator Parameter Estimation by Neural Network Inverse Mapping



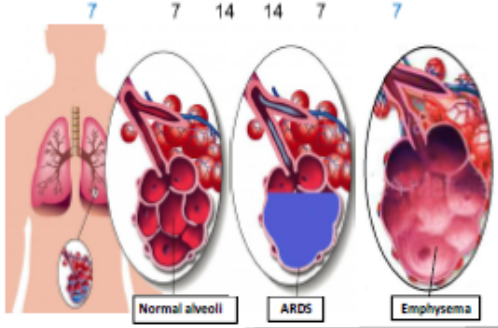


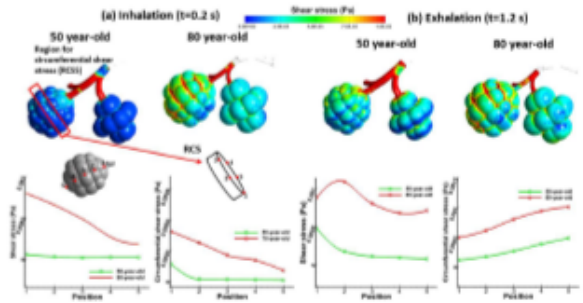


Disease Effect on Lung Compliance



Aging Effect on Alveolar Sacs





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