

Multilayered poroelastic media interacting with free fluids

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This talk will address the well-posedness analysis and the design of a computational solver for a fluid-structure interaction problem between the flow of an incompressible fluid and a multi-layered poroelastic medium. Both linearly-coupled and nonlinearly-coupled problems will be discussed. Numerical simulations highlighting the use of our numerical solver to address the design of a first implantable bioartificial pancreas without the need for immunosuppressant therapy will be shown.

Parts of this work have been done jointly with L. Bociu, M. Bukac, J. Kuan, B. Muha, Y. Wang and J. Webster. Contribution by the Director of Biodesign Laboratory at UCSF, Dr. Shuvo Roy, is also acknowledged.