

1147-35-803

Lorena Bociu*, lvbociu@ncsu.edu. *Poro-visco-elasticity in Biomechanics.*

We are interested in fluid flows through porous deformable media motivated by applications in biology, medicine and bioengineering. These fluid-structure mixtures are described by nonlinear poro-visco-elastic systems on bounded domains, where the boundary conditions are the primary drivers of the dynamics. Their influence over and ability to control the solution is an important question, with beneficial implications in the development of novel strategies to improve experimental and clinical approaches in bio-engineering and medicine. We will discuss well-posedness and regularity of solutions, and the role of structural viscoelasticity and compressibility of constituents on the bio-mechanical and fluid-dynamical responses to sudden changes in stress conditions. (Received January 28, 2019)