

1056-Q5-1530      **S. Minerva Venuti\*** ([swelling@gmu.edu](mailto:swelling@gmu.edu)) and **Padmanabhan Seshaiyer**  
([pseshaiy@gmu.edu](mailto:pseshaiy@gmu.edu)). *Viscoelastic Effects in Biological Soft Tissues.*

In this work, we consider the mathematical modeling and analysis of biological soft-tissues in a fluid structure interaction problem. The associated partial differential equation for the fluid is coupled through the boundary with a viscoelastic structure and is studied using the finite difference method. The numerical solution will be compared against exact solutions that will be obtained using analytical tools such as Laplace Transforms. The effect of viscoelasticity and other bio-mechanical factors will be presented. The mathematical tools presented in this multidisciplinary project can be extended to gain a better insight into problems in the areas of medicine and other related biological problems. (Received September 22, 2009)