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H. T. Banks, Kidist Bekele-Maxwell, Lorena Bociu, Marcella Noorman*
(mjnoorma@ncsu.edu) and **G. Guidoboni.** *Sensitivity analysis in poro-visco-elasticity.*

Poro-elastic and poro-visco-elastic models find many applications in bioengineering and medicine. Inspired from applications in geophysics and petroleum engineering, they are more and more frequently being applied to biological tissues. For many of these biological applications, the boundary data plays a crucial role. In a recent theoretical and numerical analysis of poro-elastic and poro-visco-elastic models, the time regularity of the imposed boundary traction was identified as a crucial factor in guaranteeing boundedness of the solutions. Here, we further extend that analysis by studying the sensitivity of model solutions to the imposed boundary traction and comparing the results obtained in the purely elastic case versus the visco-elastic case. This analysis will direct and inform the development of relevant control and optimization problems for the given poro-visco-elastic model. (Received January 15, 2017)