1106-VG-713 **Kun Gou*** (kgou@msu.edu), Michigan State University, Department of Mechanical Engineering, East Lansing, MI 48824, and **Thomas J Pence**, Michigan State University, Department of Mechanical Engineering, East Lansing, MI 48824. *Modeling of human airway swelling by continuum mechanics.*

Tracheal swelling caused by angioedema refers to the rapid swelling of tracheal tissue by excess accumulation of fluid from vascular leakage, which can be life threatening if it narrows airway rapidly. We present a bio-mechanical analysis with a swelling dependent natural configuration to reflect the altered tissue volume increment under angioedema. Various localized swelling and far field boundary conditions are studied in order to assess how the interaction between swelling, anisotropy and large deformation affects airway constriction. (Received September 05, 2014)