1046-Z1-65 **Kevin Yorke Kelbaugh*** (kkelbaug@gmu.edu), 4400 University Drive, Mathematical Sciences, George Mason University, Fairfax, VA 22030, and **Minerva Venuti** and **Padmanabhan Seshaiyer**. *Fluid-structure interaction mathematical models for studying biological systems.* Preliminary report.

This undergraduate research paper presents mathematical models for the interaction of blood flow with the arterial wall surrounded by cerebral spinal fluid. The blood pressure on the inner arterial wall is modeled using Fourier Series approach. The outer part of the arterial wall and the surrounding cerebral spinal fluid will be coupled using appropriate partial differential equations. The fully coupled system will be analyzed both using analytical and computational tools. Applications of the model studied to intracranial saccular aneurysms will be presented. (Received July 18, 2008)