1067-92-748 **Dawn Alisha Lott*** (dlott@desu.edu), 1200 N. DuPont Highway, Dover, DE 19901, and **Charles J Prestigiacomo**, **Hans R Chaudhry** and **Michael Siegel**. *Computational fluid dynamic simulation to assess flow characteristics of an in vitro aneurysm model.*

This study develops a virtual two-dimensional flow model replicating an in vitro aneurysm model and analyzes how changes in morphology modify flow characteristics. Using finite volume analysis, a two-dimensional saccular aneurysm model was created with a configuration matching a published, experimental, in vitro model. Qualitative comparisons were made determining whether a two-dimensional fluid dynamic model can replicate the results of an in vitro model. Quantitative changes in flow patterns, wall shear stress, dynamic pressure and maximum velocities were assessed by modifying the shape of the neck and proximal dome without modifying the overall size of the aneurysm. A two-dimensional computational fluid dynamic model reproducing the shape of a published aneurysm demonstrated excellent qualitative fidelity to an in vitro flow model. Additional information regarding dynamic pressure, shear stress and velocity along the aneurysm neck and within the aneurysm dome were determined. Although all dimensions were kept constant, slight modifications of the neck and proximal dome resulted in quantitative changes in studied parameters, such as wall shear stress and dynamic pressure. (Received September 14, 2010)