1086-76-2215 **Bruno Gabriel Beltran*** (brunobeltran0@gmail.com), 1173 Lauren Logan ln, Sulphur, LA 70665, and **Daniel Burkow**, **Courtney Bruce** and **Sarah Erickson**. *Secondary Aneurysm Formation Due to the Effects of a Primary Aneurysm.*

Intracranial aneurysms are localized dilations of arterial vessels located around the Circle of Willis, an important network of arteries at the base of the brain. Aneurysms are at constant risk of hemorrhage; however, the number of benign cases carried by the populace, the dangers of treatment, and the risk of recurrence often null the efficacy of preventative surgery. Although the mechanisms behind the formation of individual intracranial aneurysms have been thoroughly modeled as the consequence of local hemodynamic conditions, previous simulations have concentrated on single aneurysms. Using OpenFOAM, an open source fluid dynamics toolkit, we study how changes in the hemodynamics within the Circle of Willis caused by the presence of a primary aneurysm can facilitate the formation of a secondary aneurysm. We measured changes in wall shear stress on the anterior communicating artery given a primary aneurysm at the bifurcation between the posterior communicator artery and the basilar artery. The small decrease we found, of around 0-4%, is exposited as evidence that multiple aneurysms form independently of each other. (Received September 25, 2012)