



MMAE SEMINAR

**Monday, March 22, 2010
E-1 BUILDING – CRAWFORD AUDITORIUM
3:30 – 4:30 PM**

Vascular Voyage: an immersive tool for interactive teaching, learning and research

**John LaDisa
Marquette University**



Abstract

Atherosclerotic plaque rupture leading to stroke or myocardial infarction is the leading cause of death in the US. Atherosclerosis is closely linked to local hemodynamic factors. In particular, alterations in wall shear stress (WSS) influence the onset and progression of atherosclerosis, but the relationship between changes in plaque morphology and WSS has not been adequately studied in humans due to the lack of a practical assessment method. We have recently developed a process that facilitates the creation of computational fluid dynamics models revealing WSS distributions in the carotid arteries of patients using MRI, ultrasound and high performance computing. This presentation will discuss the implementation of these methods as well as recent progress made in visualizing the results within the Human Interactive Virtual Education (HIVE) facility at Discovery World Museum in Milwaukee.