Weekly CEAFM Seminar: Fall 2014

JOHNS HOPKINS
Center for Environmental
& Applied Fluid Mechanics

Date: **Friday, October 3, 2014**

Time: 11:00 AM

Location: Gilman Hall # 132

Speaker: **Jung-Hee Seo** (Johns Hopkins University, MechE)

Title: ***"Multiphysics Computational Modeling of Cardiac Flows"***

Abstract

ABSTRACT: Recent developments in medical imaging and computational fluid dynamics have made it feasible to simulate blood flow in realistic models of the cardiovascular system, and these capabilities are ushering in the possibility of simulation-based diagnosis and therapy for the cardiovascular disease. In my talk I will describe two research projects on multiphysics modeling of cardiac flows: the first one is focused on coupled flow-chemical modeling of thrombogenesis (clot-formation) in infarcted ventricles. Computational models are being used to determine metrics that can better classify the risk of thrombogenesis in post-MI patients. The second project is on coupled flow-acoustic models of heart murmurs where models accompanied by experiments are being used to develop a better understanding of the generation and propagation of heart sounds in healthy and diseased hearts.

BIO: Dr. Seo's research expertise is in the areas of computational fluid dynamics and acoustics. He obtained a PhD in 2006 from the Korea University and then was post-doctoral scholar at Stanford University from 2007 to 2009. He joined the Johns Hopkins University in 2009 as a post-doc and is currently an Associate Research Scientist in the Department of Mechanical Engineering. He is currently conducting research on multiphysics computational modeling and analysis of cardiac and cardiovascular flows.