Bumps and Ridges: Trabeculation Effects in Embryonic Heart Development

NICHOLAS BATTISTA, ANDREA LANE, LAURA MILLER, Univ of NC - Chapel Hill — Trabeculae form in developing zebrafish hearts for Re on the order of 0.1; effects of trabeculae in this flow is not well understood. Dynamic processes, such as vortex formation, are important in the generation of shear at the endothelial surface layer and strains at the epithelial layer, which aid in proper morphology and functionality. In this study, CFD is used to quantify the effects of Re and idealized trabeculae height on the resulting flows.