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**Robert H. Nazarian\*** (rhnaza12@holycross.edu), 1 College Street, Box 1838, Worcester, MA 01610. *Mathematizing Tragedy: Creating a Fluid Dynamics Model to Foreshadow the Deepwater Horizon Oil Spill.*

On April 20, 2010 the course of our planet was irreversibly altered with the explosion of British Petroleum's Deepwater Horizon oil rig and the subsequent three-month flow of crude petroleum into the Gulf of Mexico. Immediately following the disaster, the government turned to scientists to reconcile the data and to use their analysis to motivate policy. While initial studies were unfruitful, new data infers that the poorly engineered Halliburton cement slurry installed in the Macondo well directly led to the demise of the rig and the subsequent oil spill. Furthermore, public and private data suggest that the faulty cement slurry, as well as other mechanical difficulties, were never integrated into a comprehensive model of the Macondo well and came together to create ideal conditions for disaster. My presentation will discuss the mathematizing of BP policy in addition to the appropriate changes that should have been made to the model due to challenging drilling conditions and the history of human error on the rig. In doing so, we will take an in-depth look at the fluid mechanics of the well to determine how the system approached disequilibrium. (Received February 07, 2011)