



PRC Student Luncheon - Faculty/Industry Mentoring  
UAH Propulsion Research Center  
Friday, October 4, 2019



## “Fluid Dynamics in Propulsion Systems”

**Speaker:**

**Kristopher McDougal, PE NASA  
Marshall Space Flight Center**

### Abstract

Kristopher McDougal will give a brief overview of the Fluid Dynamics Branch in the Propulsion Department at the NASA Marshall Space Flight Center. He will close with elaborating on a subset of the Fluid Dynamic disciplines responsibilities including testing and spend the majority of the presentation discussing pump dynamics observable during inlet pressure excursions of a scaled water flow inducer (axial pump) test where the speed and flow rate were held nearly constant and the inlet pressure was slowly decreased over several hundred seconds of testing. The presenter will show videos of and discuss the various forms of cavitation that occur during the test.

### Biographical Sketch

Kristopher (Kris) McDougal received a Bachelor's of Science in Mechanical Engineering from the University of Alabama in Huntsville in 2001 and a Master of Science in Engineering from the University of Alabama in Huntsville in 2008. He became a licensed Professional Engineer in December 2010. Kris has worked at the Marshall Space Flight Center for the last 17 years where he has been employed by Jacobs Engineering and later by NASA as a turbomachinery test engineer, materials test engineer, systems integration engineer, and most recently as the technical team lead for the Unsteady Flow and Acoustic Environments Team within the Fluid Dynamics Branch of the Propulsion Systems Department.

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*There will be guided tours of our Johnson Research Center Laboratories following the luncheon.*