



## Jacob Cranford

Undergraduate Research Assistant

UAHuntsville Propulsion Research  
Center



### BIO:

Mr. Jacob Cranford is currently working at the Propulsion Research Center as an undergraduate research assistant. As an undergraduate research assistant Mr. Cranford completes a variety of tasks to work towards the completion of the research being done at the center. While working at the Johnson Research Center, Mr. Cranford has been involved in data processing for combustion instability experiments, three dimensional modeling for combustion instability experiments, design and fabrication of components for combustion instability as well as a cryogenic flow experiments. He also works with the facility engineer to work to keep the facility up to date and functioning as well as possible. While working for the Autonomous Tracking and Optical Measurements lab (ATOM Lab) Mr. Cranford has been working on data collection and processing of flight dynamics for small gliders.

Mr. Cranford was the propulsion lead for the 2012-2013 University Student Launch Initiative (USLI) team which designed a high powered rocket to carry a scientific payload to exactly one mile above ground level. His responsibilities as lead were to oversee selection of the motor as well as flight trajectory predictions and analysis. The dual role in propulsion design and dynamic analysis used for the competition has a large role in Mr. Cranford's continued interest in propulsion systems as well as dynamic modeling and analysis of airborne bodies. Mr. Cranford was also honored through the USLI team to be selected to author and present a paper at the 49<sup>th</sup> annual Joint Propulsion Conference. The paper was an exhibition of the USLI payload, and the paper was entitled "The UAH 2013 University Student Launch Initiative Project". Mr. Cranford has been a member of the Dean's List for two years and is a member of the Sigma Gamma Tau leadership society. After graduation in December of 2013, Mr. Cranford hopes to pursue a master's degree while doing research on the flight dynamics of butterflies. Mr. Cranford hopes as well to publish papers separate to his main research, on combustion instability research that he has undertaken as an undergraduate under the guidance of a Propulsion Research Center graduate student, John Bennewitz.

### Contact Information:

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### RELEVANT PUBLICATIONS:

1. Cranford, J., Denny, M., Patel, A., Lineberry, D., Harrison, S., "The UAH 2013 University Student Launch Initiative Project," AIAA 2013-4108, 49th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, San Jose, CA, July 2013.