Gray, Phillip- Team Lead
Mechanical Engineering/ MS 2012, Georgia Institute of Technology
Sarper, Meral
Mechanical Engineering/ BS 2013, University of Colorado at Colorado Springs
Stanage, Samuel
Mechanical Engineering/BS 2012, Arkansas Tech University
Valenzuala, Juan
Mechanical Engineer/ MS 2012, University of Texas at El Paso

NASA MSFC Mentor:
Lisa Bates Principal Investigator, Branch Chief ER-35

Research and Experience

Gray, Phillip

- **Aerospace Systems Design Laboratory, Georgia Institute of Technology : August 2010-Present**
    - **Creation of surrogate models of jet engine combustion products**
- **Excalibur Almaz –Houston, TX: May 2010-August 2010**
    - **Group leader of 4 technical interns**
        - **Assisted in preparations for client meetings and investigated testing and evaluation procedures**

Sarper, Meral

- **Braxton Technologies- Colorado Springs, CO: June 2010-November 2010**
    - **Engineering and Marketing Intern**
- **NASA Langley Research Center- Hampton, VA: June 2007-August 2008**
    - **Mechanical Systems Engineering Mass Properties Evaluation Team- wrote a computer program to organize the theoretical and actual mass properties of NASA's Orion Capsule**
    - **International Air Quality Team- Created a computer program to analyze Aerosol Optical Depth data from the MODIS instrument on the Aqua and Terra satellites**

Stanage, Samuel

- **Synergistic Foam Modeling Study, Arkansas Tech University: December 2010- Present**

    - **Conducted synergistic analysis of metallic foams**
    - **Used computer software to characterize experimental foams for use in insulating aerospace vehicles used by NASA**
- **Hi-Tech Services- Hot Springs, AR: May 2005- August 2009**
    - **Engineering Assistant/ Designer and Manufacturing Representative**
        - **Designed and fabricated machines using Solid Works using mills, drill presses, and pneumatic systems to aid in production speed**
        - **Assisted in the completion of approximately one thousand parts each day**

Valenzuala, Juan

- **Center for Space Exploration Technology Research (CSETR), University of Texas at El Paso: June 2007- Present**
    - **Currently researching on development of novel micro reactors for m-Newton range chemical micro thrusters**
- **Research and Development Laboratory, University of Texas at El Paso: August 2005- June 2007**
    - **Served as an apprentice to mechanical engineering technical staff and used manufacturing tools such as lathes, mills, CNC machines, and welding equipment**

Membership and Activities

Gray, Phillip

- **AIAA (American Institute of Aeronautics and Astronautics)**
- **French: Advanced**

Sarper, Meral

- **Society of Women Engineers (SWE)**
- **Gender Alliance and Liberation (GAL)**
- **Volunteers for Outdoor Colorado**
- **Fluent in Turkish**

Stanage, Samuel

- **Foreign volunteer work in Guatemala, Honduras and Mexico**
- **Arkansas Tech Resident Assistant**
- **Spanish: Moderate**

Valenzuala, Juan

- **Pi Tau Sigma Mechanical Engineering Honor Society**
- **Society of Automotive Engineers (SAE)**
- **Team/Design Captain of Mini Baja Team, 2006-2010**
- **Fluent in Spanish**

Honors and Awards

Gray, Phillip

- **Team Lead of NASA Propulsion Academy- Modal Analysis group**
- **University Honors 2006-2008**

Sarper, Meral

- **NASA Space Science Student Ambassador for Colorado 2010-2011**
- **Society of Women Engineers (SWE) Co- President 2010-2011**
- **Presented previous NASA research and autonomous rovers**
    - **at NASA Headquarters in August 2007 and 2008**
    - **at the International Mars Society Convention 2007/2008 in Los Angeles, CA and Boulder, CO**

Stanage, Samuel

- **Dean's List, Fall 2008-2010**
- **National Society of Collegiate Scholars (NSCS)**

Valenzuala, Juan

- **SAE President 2008-2009**
- **Dean's List 2009-2010**
- **Joint Propulsion Conference (JPC) 2011 Presenter in San Diego**

Title of Poster: Modal Analysis of Inertial Load Simulator

Abstract:

Thrust Vector Control is a means of directing the thrust from a rocket nozzle in order to control a rocket. Traditionally, TVC is accomplished by means of two actuators mounted 90° apart that push and pull on the nozzle gimballing the engine on two axes about the pivot point. During design these actuators are tested on an Inertial Load Simulator (ILS), which is a large pendulum that represents the inertial load of the engine hanging from a stiff frame. Ideally this frame would be completely rigid; however, in reality this is not the case. Our project was to characterize the actual motion of the ILS frame while the pendulum is in motion. This is vital information about the capabilities of the TVC test lab.