

SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)
New Worlds - Innovative Space Education and Outreach (7)

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RANDOM ACCESS MICROGRAVITY STOWAGE - DESIGN TEAM OUTREACH TO SECONDARY
EDUCATION SCHOOLS PROMOTING STEM EDUCATION AND CAREERS**Abstract**

A team of students representing the University of Alabama in Huntsville (UAH) Department of Mechanical and Aerospace Engineering (MAE), in collaboration with the National Aeronautics and Space Administration (NASA), designed, manufactured, and integrated a new random access microgravity stowage system concept within the deep space eXploration Habitat (X-Hab) concept demonstrator at NASA's Marshall Space Flight Center (MSFC). Several Science, Technology, Engineering, and Mathematics (STEM) outreach events were conducted during the 2012-2013 academic year. The goal of the outreach events was to engage high school and middle school students in an engineering based project with real world NASA applications in order to encourage interest in pursuing a STEM related career during post secondary education. An initial survey was administered to the students as a baseline for comparison in order to assess their knowledge of key topics surrounding NASA and general interest of STEM related careers. Multiple presentations detailing the project were made in order to accelerate student knowledge pertaining to the concepts and overall purpose of the project. The same survey was administered at the end of the year in order to gauge what the students had gained from the experience. The UAH X-Hab design team included the assistance of a technologically oriented secondary education school in the Huntsville, Alabama (AL) area to develop a fully functional scaled model of the proposed design for use in review meetings with NASA engineers. The younger students were very excited about an opportunity to assist UAH X-Hab team members in the design process. The STEM outreach also included select area middle

schools in order to spark interest in math and science to young teenagers. The UAH team also presented posters at STEM events throughout the community as a way to educate many young students and parents regarding the importance and benefits of STEM education. The present paper describes the collaborative effort between UAH and NASA representatives to include the involvement of young students in the design process and demonstrates the impact the outreach events had upon these students via survey results. The opportunity to influence younger students into STEM related fields of study was a fulfilling endeavor met with the same excitement as the opportunity to work with NASA engineers.