

SYMPOSIUM ON BUILDING BLOCKS FOR FUTURE SPACE EXPLORATION AND  
DEVELOPMENT (D3)Novel Concepts and Technologies for Enable Future Building Blocks in Space Exploration and  
Development (3)Author: Ms. April Davis  
United States, aprilc.davis@gmail.comDEVELOPING SPACESUIT COMPATIBLE GEOLOGIC FIELD EQUIPMENT FOR TESTING IN A  
MARS ANALOG ENVIRONMENT**Abstract**

I am currently leading a project to develop efficient and reliable geological survey and analysis equipment that will be appropriate for use in small, enclosed, low-gravity environments. MiraCosta College faculty, an aerospace engineer, and other students are assisting with development. My team intends to address safety and containment protocols for soil and minerals found on Mars. We plan to develop equipment that will maximize the available space of a small habitat such as the Mars Desert Research Station (MDRS) and living quarters off world, while easing the difficulties of geologists working in a Mars field environment. The equipment we develop could also be used for research stations in orbit, on transport ships, probes, etc.

I am currently on my second MDRS rotation this year, testing current field geology equipment in a simulated environment. My team anticipates having our equipment developed by the 2013-2014 field season at MDRS, where we will test our designs. After completion of that MDRS field rotation, our data and designs will be made available online under an open source license. We hope that our results will be expanded and improved upon by a community with the shared goal of colonizing Mars.