Overview of the Life Science Glovebox (LSG) Facility and the Research Performed in the LSG.

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The Life Science Glovebox (LSG) is a rack facility currently under development with a projected availability for International Space Station (ISS) utilization in the FY2018 timeframe. Development of the LSG is being managed by the Marshal Space Flight Center (MSFC) with support from Ames Research Center (ARC) and Johnson Space Center (JSC). The MSFC will continue management of LSG operations, payload integration, and sustaining following delivery to the ISS. The LSG will accommodate life science and technology investigations in a "workbench" type environment. The facility has an enclosed working volume that is held at a negative pressure with respect to the crew living area. This allows the facility to provide two levels of containment for handling Biohazard Level II and lower biological materials. This containment approach protects the crew from possible hazardous operations that take place inside the LSG work volume. Research investigations operating inside the LSG are provided approximately 15 cubic feet of enclosed work space, 350 watts of 28Vdc and 110Vac power (combined), video and data recording, and real time downlink. These capabilities will make the LSG a highly utilized facility on ISS. The LSG will be used for biological studies including rodent research and cell biology. The LSG facility is operated by the Payloads Operations Integration Center at MSFC. Payloads may also operate remotely from different telescience centers located in the United States and different countries. The Investigative Payload Integration Manager (IPIM) is the focal to assist organizations that have payloads operating in the LSG facility. NASA provides an LSG qualification unit for payload developers to verify that their hardware is operating properly before actual operation on the ISS. This poster will provide an overview of the LSG facility and a synopsis of the research that will be accomplished in the LSG. The authors would like to acknowledge Ames Research Center, Johnson Space Center, Teledyne Brown Engineering, MOOG-Bradford Engineering and the entire LSG Team for their inputs into this abstract.