

## **Psychological Support Operations and the ISS One-year Mission**

G. Beven

*NASA Johnson Space Center*

S. T. Vander Ark

*Wyle STE, Houston, TX*

A. W. Holland

*NASA Johnson Space Center*

Since NASA began human presence on the International Space Station (ISS) in November 1998, crews have spent two to seven months onboard. In March 2015 NASA and Russia embarked on a new era of ISS utilization, with two of their crewmembers conducting a one-year mission onboard ISS. The mission has been useful for both research and mission operations to better understand the human, technological, mission management and staffing challenges that may be faced on missions beyond Low Earth Orbit. The work completed during the first 42 ISS missions provided the basis for the pre-flight, in-flight and post-flight work completed by NASA's Space Medicine Operations Division, while our Russian colleagues provided valuable insights from their long-duration mission experiences with missions lasting 10-14 months, which predated the ISS era.

Space Medicine's Behavioral Health and Performance Group (BHP) provided pre-flight training, evaluation, and preparation as well as in-flight psychological support for the NASA crewmember. While the BHP team collaboratively planned for this mission with the help of all ISS international partners within the Human Behavior and Performance Working Group to leverage their collective expertise, the US and Russian BHP personnel were responsible for their respective crewmembers. The presentation will summarize the lessons and experience gained within the areas identified by this Working Group as being of primary importance for a one-year mission. These areas include the following:

- Managing Work/Rest Schedule;
- Monitoring Behavioral Health;
- Time off During Pre-, In- and Post-flight;
- Comprehensive Contingency Planning;
- Monitoring Crew-Ground Relationships;
- Enhanced Psychological Support Resources; and
- Enhanced Communication with International BHP Partners

The BHP team at NASA had worked closely with the crewmember and his family to define a specific support plan, and remained closely engaged with them for the duration of the mission to modify support and monitoring as required. Further, coordination during the mission with the Family Support Office, Crew Surgeon and Crew Support Astronaut allowed support resources to be modified real-time. It is hoped that the ISS Program continues these types of missions to continue expanding our knowledge in operations and research for informing future exploration missions.

### **Learning Objective:**

This presentation will help participants understand the success of the behavioral health monitoring and support activities for crewmembers of a one-year ISS mission and how they differed from what was originally planned and how they differed from a six-month mission.

### **Question One:**

The Private Psychological Conference is one of the primary means for the BHP to monitor crewmember and crew behavioral health and well-being? True

Question Two:

The BHP team coordinates their support efforts for astronauts with all of the following, except:

- Crew Surgeon
- Flight Director
- Crew Support Astronaut
- Family Members

Question Three:

Support and monitoring activities for the one-year mission includes all of the following, except:

- Managing Work/Rest Schedule
- Comprehensive Contingency Planning
- Daily Medical Conferences
- Monitoring Crew-Ground Relationships