AsMA Panel 2022  
Reno, NV

Co-chairs: Gary Beven, MD and Steve Vander Ark, MS

TITLE: BEHAVIORAL HEALTH AND PERFORMANCE OPERATIONS AND RESEARCH IN HUMAN SPACEFLIGHT

BODY: There are two distinct functions of the Behavioral Health and Performance (BHP) specialists at NASA Johnson Space Center (JSC), with a shared goal of promoting optimal performance during all mission phases, beginning with selection to the NASA Astronaut Corps through training for and completing a spaceflight mission. The BHP Operations team is active in areas such as selection, training, routine behavioral healthcare services, and work-rest schedule. The BHP Laboratory is engaged in research in space and analog platforms to address the risks and other challenges associated with future deep space missions. Their research focuses on topics that align with the NASA Human Research Program’s Human Factors Behavioral Performance Element goals.

This panel will provide details of recent work by BHP Operations and the BHP Laboratory at NASA JSC, and will demonstrate their shared goals, and contributions toward, optimizing performance and maintaining the behavioral health and well-being of astronauts during all mission phases.

In 2020-2021, NASA engaged another astronaut applicant screening process to identify its 23rd group of astronaut candidates. The BHP Operations team completed a significant amount of work to evaluate applicants and provide valuable input to the Astronaut Selection Board and the Aerospace Medical Board. One presentation will provide an overview of the work completed by BHP; and one presentation will discuss a critical competency important for successful job performance of the astronauts – Team Orientation. The former will summarize aspects of BHP’s Select-in and Select-out process and provide lessons learned for future selection cycles; the latter will briefly discuss the competencies of BHP’s applicant screening work, with focus on the importance of Team Orientation and the challenges of its measure.

A third presentation will provide an overview of BHP’s current fatigue management work with astronauts and mission-critical operators at JSC (e.g., flight directors, pilots), and provide a look at the direction these fatigue management services may take in future exploration missions. Two other presentations will focus on the research completed by the BHP Lab to measure in a standardized way the critical aspects of behavioral health and well-being. One of the presentations will provide an overview of the Exploration Measures being collected during all space and analog missions, and the importance these objective measures have for future research and operations. The final presentation will summarize analyses completed with these measures, as they have been harmonized across both ISS and Analog missions.

Learning Objective: Participants will learn about activities of Behavioral Health and Performance operations and research at NASA Johnson Space Center that are setting the conditions for ensuring optimal performance of astronauts during current and future spaceflight missions.

Panel Presentations

1. Astro Selection O/V (Beven, et al., Education);
2. Selection Competencies-Team Orientation (Bilotta, et al., Education);
3. Fatigue Mgt O/V (Baskin or Dukes, Education);
4. Exploration Measures Update (Bell, et al., Original Research); and
5. Benchmarking ISS and Analog EM Data (Dev, et al., Original Research)