Introduction

NASA Behavioral Health and Performance

Two components of the NASA Behavioral Health and Performance group is the Operations Group, which supports current space flight, and the Research Element, which manages an integrated program of research for future space flight.

Behavioral Health and Performance Operations Group

The NASA Behavioral Health and Performance Operations Group (BHP Ops) supports astronauts and their families before, during, and after a long-duration mission on the ISS. BHP Ops provides ISS crews with services such as the following:

- Training
  - Expeditionary Training (classroom and field)
  - Psychological factors of long-duration mission (LDM)
- In-flight resources planning (services available)
- Practical planning for LDM
- Behavioral Medicine training (for Crew Medical Officer)
- Behavioral health services for astronauts and dependents
- Behavioral health monitoring
- Behavioral health evaluations (preflight, postflight)
- Private psychological conferences (in-flight)
- Cognitive assessment (pre-, in-, and postflight)
- In-flight psychological support services
- Family communication, care packages, provisions for off-hours entertainment, special family and mission events, onboard web site content

ISS astronauts continuously recognize the relevant and helpful support provided to them by BHP Ops.

In May 2009, the crew of ISS will increase from a crew of three to a crew of six. Not only will the jump in crew size modify the situational requirements of life on the ISS, it will also potentially increase diversification in the cultural composition of the crew.

Behavioral Health and Performance Research Element

Future exploration missions beyond ISS will pose even stronger challenges. Lunar and Mars missions will require long-duration stays in remote, isolated, and unique environments, with extended periods of heavy workload. Day and night cycles will differ from standard Earth time; teams composed of only a few individuals will experience prolonged confinement as well as times of monotony. Crews will also have to deal with issues concerning limited communication, sleep, and autonomy.

In preparation for these exploration missions to the Moon and Mars, the Behavioral Health and Performance Research Element (BHP) conducts and supports research to address three human health risks:

- "Sleep Risk": Risk of Performance Errors due to Sleep Loss, Fatigue, Circadian Desynchronization, and Work Overload;
- "Team Risk": Risk of Performance Errors Due to Poor Team Cohesion and Performance, Inadequate Selection/Team Composition, Inadequate Training, and Poor Psychosocial Adaptation;
- "B-Med Risk": Risk of Behavioral and Psychiatric Conditions

The Goal of the NASA Behavioral Health and Performance Research Program Element (BHP) is to identify, characterize, and prevent or reduce behavioral health and performance risks associated with space travel, exploration, and return to terrestrial life.

BHP conducts research that will yield technologies and methods to aid the behavioral health and performance of astronaut crews during and after these exploration missions.

Specifically, BHP research aims to:

- Quantify BHP risks for Moon and Mars missions
- Develop countermeasures and technologies to prevent or mitigate adverse outcomes of BHP risks
- Develop countermeasures and technologies to monitor and treat adverse outcomes of BHP risks