Paper ID: 16380
oral

SPACE LIFE SCIENCES SYMPOSIUM (A1)
Multidisciplinary Space Life Sciences Research (8)

Author: Dr. Jeffrey R. Davis
National Aeronautics and Space Administration (NASA), Johnson Space Center, United States

ACCELERATING INNOVATION FOR SPACE FLIGHT AND EARTH BENEFITS- HOW ORGANIZATIONS TARGET BREAKTHROUGHS FOR HUMAN HEALTH AND PERFORMANCE

Abstract

In 2012, the Human Health and Performance Directorate (HHP) positioned itself to drive breakthroughs in Human Health and Performance by changing the organization to drive technology innovations. Since 2007, the Space Life Sciences Directorate (now the Human Health and Performance Directorate) has pursued and achieved a vigorous implementation of our 2007 Strategy with significant results. We've improved collaboration through two virtual centers, produced early open innovation results that were viewed as the leading edge in federal agency innovation, conducted a comprehensive reorganization, and established a 2012 Strategy based on the successful execution of the 2007 Strategy. We correctly anticipated great change within NASA, developed and implemented an effective strategy to address current and future challenges, and continue to evolve with the development of the Solution Mechanism Guidance Tool to improve decision making and project management as a part of an overall strategic framework for addressing human health and performance risks in spaceflight. These successful developments have enabled the HHP to identify key areas for technology breakthroughs to enable human space flight and also to provide benefits on earth. One such key area is to develop technologies that permit the storage of pharmaceuticals and blood samples without refrigeration, greatly expanding capabilities for human exploration beyond low-earth orbit and to provide expanded health care capabilities on earth. Previous open innovation efforts have identified emerging technologies for medication storage (such as previous winners through the Rice Business Plan competition) and emerging companies that can store blood sample components at room temperature. In June 2013, the HHP will host a fourth workshop through the NASA Human Health and Performance Center (NHHPC) that will identify public-private partnerships to drive technology breakthroughs such as the elimination of the need for refrigeration for exploration class missions. In addition, the HHP will conduct internal NASA competitions and external open innovation competitions to find technology ideas that can lead to HHP breakthroughs. The results of these competitions and this workshop will be presented at the IAC that identify the best technology areas for future development.