National Aeronautics and Space Administration

Space Technology Game Changing Development

Monthly Highlights

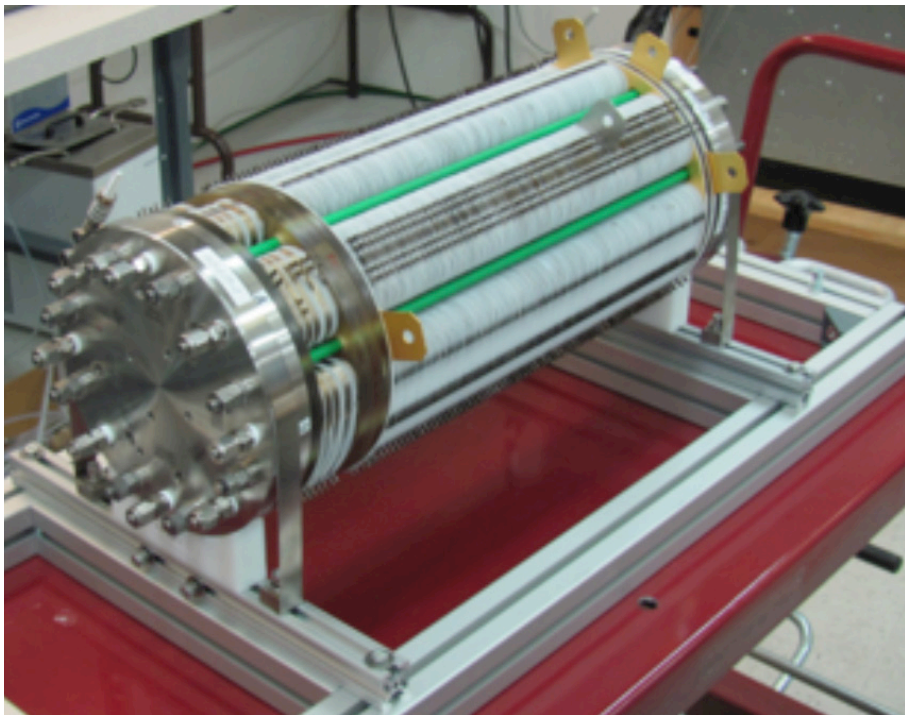
March 2013

Power Up! Battery Delivery

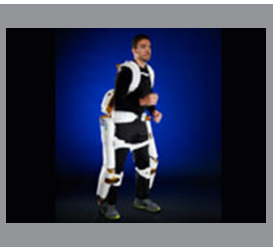
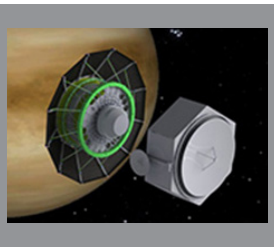
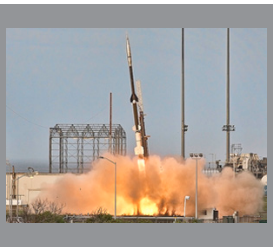
NASA has been developing **non-flow-through fuel cell technology** for several years to address the needs of the human spaceflight community for highly reliable electrical power generation for surface outposts and exploration vehicles. The technology has advanced through demonstration units of increasing size, leading to the first build of a unit that is sized for final applications: 3kW.

The Advanced Space Power Systems project reached a major milestone in March with the delivery of the 3kW non-flow-through fuel cell stack to NASA's Glenn Research Center where it will begin testing this April.

The full-scale system will identify any technical issues related to higher voltage and power and the Test Readiness Level (TRL) will be raised to 5 for 3kW applications. The all-metal stack results in most simplified cell assembly, lower manufacturing costs and shorter fabrication schedule.

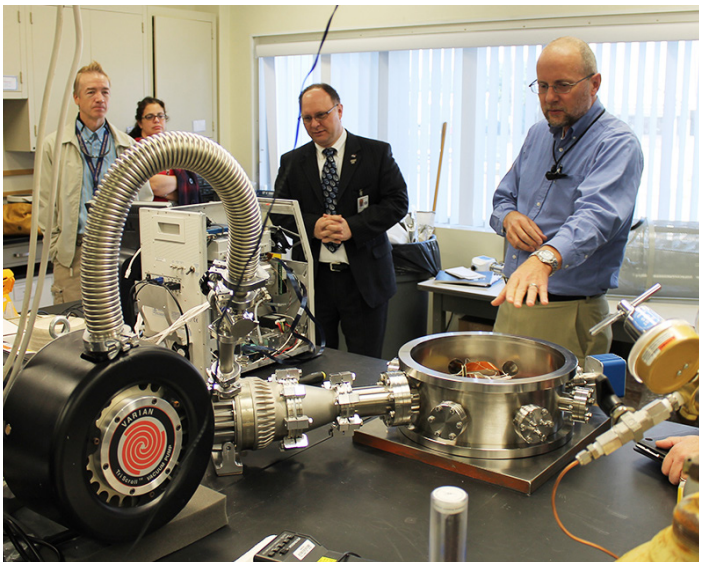


3kW non-flow-through fuel cell stack.

NASA's Kennedy Space Center Review

Game Changing Development Program management continued its center reviews in March, visiting NASA's **Kennedy Space Center**. At KSC management heard overviews on existing projects such as Slosh, Autonomous Systems and Swords and toured the Vehicle Assembly Building, Swamp Works and the Operations and Checkout Facility.



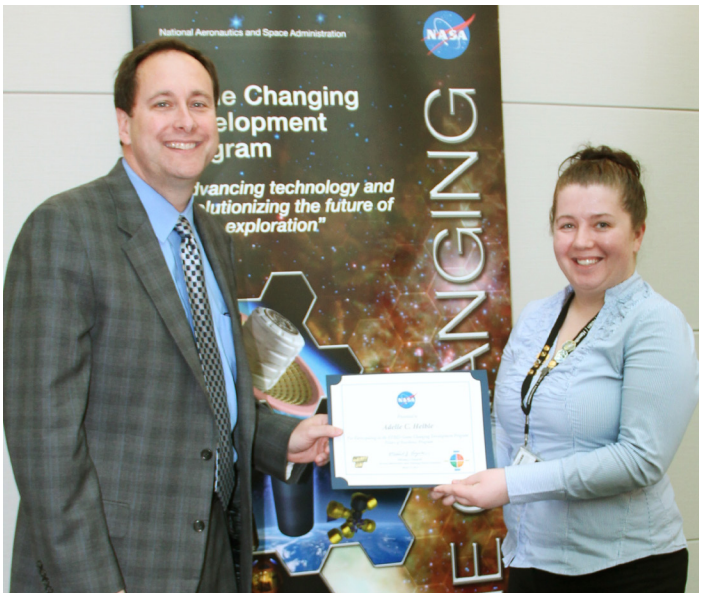
Management gets a close up look at hardware during the review.

The Game Changing team visited the future launch platform for the SWORDS project while at KSC.

A Game Changing Graduation

NASA's Associate Administrator Robert Lightfoot spoke at the **Game Changing Development Program's Pillars of Excellence** graduation on March 13, 2013, where two-dozen members of GCD were recognized for participating in the six-month leadership course designed by the Office of Human Capital Management at NASA Langley.

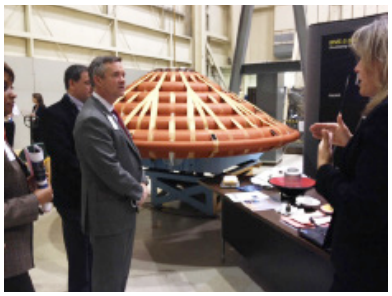
Six members of GCD, Garry Qualls, Steve Gaddis, Chuck Taylor, Ryan Stephan, Dana Gould and Bob Hodson, completed all the course requirements, which included development plans centered around; leadership, creativity and innovation, project management, and other targeted developmental areas. Participants also heard from innovative speakers and were involved in field experiences that linked many aspects of their development with practical application. At the graduation, Lightfoot encouraged GCD team members to continue to be innovative and collaborative.



SETA Adelle Helble receives a certificate from NASA's Associate Administrator Robert Lightfoot. Helble was recognized for her participation in the Pillars of Excellence Program.

R2 Kinect Game, HIAD App Featured at South by Southwest

Thousands of visitors attended the **South By Southwest (SXSW) Interactive Festival** March 8-10 in Austin, Texas, where they had the opportunity to learn about NASA's James Webb Space Telescope mission. NASA and its partners: Northrop Grumman, The Space Telescope Science Institute, Microsoft Research, Ball Aerospace, ATK Aerospace, ITT Exelis and the University of Texas at Austin put together an immersive exhibit that highlighted the impressive science mission. In addition to a full-sized model of the JWST, which overlooked downtown Austin, a number of NASA exhibits showcased what the agency is doing to connect the public with its important missions. One of the exhibits highlighted NASA's Space Technology Game Changing Development projects, Robonaut 2 and IRVE-3. Hundreds of visitors, including national media, families, gamers, and executives visited the Game Changing booth to play the R2 Kinect game, which allows users to "train" R2. The Kinect game introduced the public to R2 and his capabilities on NASA's International Space Station. The HIAD app, which features a simulated IRVE mission, was available on tablets.



On March 8, the **HIAD** team provided an overview of **IRVE-3** and **HEART** to Senator Tim Kaine's office staff, including State Director John Knapp and Regional Director of Eastern Virginia Andrea Trotter.

The full-size model of the JWST overlooked downtown Austin.

NASA's HIAD app is available on iTunes.

Crowds of people lined up to play the Train R2 game at SXSW.

Game On!

http://gameon.nasa.gov

For more information, contact
Amy McCluskey
Communications Manager
Game Changing Development Program Office
NASA Langley Research Center
757-864-7022
amy.johnson@nasa.gov