

## *Colorado Springs JANNAF Meeting Draws Largest Audience in Years*

The arrival of spring once again heralded the annual cornerstone of the JANNAF year, the Joint Propulsion Meeting. This year's 57th JANNAF Propulsion Meeting (JPM), held jointly with the 7th Modeling and Simulation (MSS), 5th Liquid Propulsion (LPS) and 4th Spacecraft Propulsion (SPS) Joint Subcommittee Meeting, was held May 3–7, 2010, at the Cheyenne Mountain Resort in Colorado Springs, Colorado. Mr. Parker L. Buckley of the Universal Technology Corporation (UTC) in Dayton, Ohio, presided over a weeklong meeting attended by more than 550 of the nation's engineers, scientists, program managers, and propulsion enthusiasts. Technical information was shared across the breadth of the JANNAF propulsion field in over 375 papers, the largest collection in recent memory—and a testament to the continuing need to share knowledge and accomplishments in the industry.

### **Meeting Highlights**

Dr. Richard P. Hallion, an internationally recognized aerospace historian, former Smithsonian curator and retired Air Force executive, delivered the keynote address on Tuesday to a packed ballroom. Dr. Hallion's presentation covered the entire history of development in propulsion for aerospace systems from piston engine and propeller design up through scramjet and rocket technology. Dr. Hallion's breadth of knowledge on all things propulsion made this keynote especially engaging; after his presentation, Hallion answered a wide variety of questions posed by attendees concerning our current propulsion technology programs and lessons learned from the past. Having received multiple spontaneous rounds of applause and a standing ovation, it is apparent that Dr. Hallion will be fondly remembered as one of the best keynote speakers in JANNAF history.

The JANNAF awards ceremony was held immediately following the keynote. Three distinguished members of the propulsion community were recognized with the JANNAF Lifetime Achievement Award: Mr. Lee G. Meyer (Aerojet), Dr. J. Michael Lyon (Army RDECOM), and Mr. Parker L. Buckley (Universal Technology and AFRL, retired). JANNAF Executive Committee Chairman, Mr. James L. Taylor of the NASA Marshall Space Flight Center (MSFC) presented the awards, thanking each recipient for his exceptional contributions and long-standing service to JANNAF. The Modeling and Simulation Subcommittee recognized one of their own with a JANNAF Certificate of Appreciation. Session Chair Mr. James A. Larkin of Pratt & Whitney/West Palm Beach received the acknowledgment for outstanding contributions to the MSS and dedicated service to JANNAF. The Best Student Paper Award was given by the LPS to Mark A. Trinidad for his paper, "An Update on the Development of NGC's TR408, 100lbf LOX/LCH4 Reaction Control Engine." Mr. Trinidad is currently with Northrop Grumman/Redondo Beach.

### **JPM Technical Highlights**

The JPM Program Committee hosted 12 technical sessions across the range of the propulsion field, including sessions on gun propulsion, space access systems, advanced concepts, insensitive munitions, tactical systems, and ARES-Orion program technologies.

The JPM Program supported the 3rd Wireless Sensors Workshop, sponsored by the Structures and Mechanical Behavior Subcommittee (SMBS) and jointly chaired by S.R. Lin of the Aerospace Corporation and Edmund K.S. Liu of CPIAC. Presentations and an executive summary from the workshop will be included in the JPM proceedings, available shortly from CPIAC.

### **MSS Technical Highlights**

The MSS Program Committee hosted eight technical sessions during the week, including one that was co-hosted with the JPM. Sessions on diagnostics systems and data mining, and simulation credibility were particularly strong draws. Members from the MSS community met in a working group to discuss needs, requirements, and progress on the development of a sensors database for propulsion system diagnostics and health management. A workshop on the development of a JANNAF Simulation Credibility Guide was jointly chaired by Dean Eklund of the Air Force Research Laboratory (AFRL) and Unmeel B. Mehta of the NASA Ames Research Center. Presentations and executive summaries

from all of the subcommittee (MSS, LPS and SPS) workshops will be included in the JPM proceedings, available shortly from CPIAC.

### **LPS Technical Highlights**

The LPS Program Committee hosted 17 regular sessions and 6 specialist sessions; over 150 technical papers were presented, the largest in its eight year history. Sessions on Third Generation Reusable Boost technology, Reusable Booster Flight Experiment engine studies were large draws, as were two day dedicated sessions on both Lunar Lander technology and Space Shuttle Main Engine (SSME) overview and history. A workshop in the continuing series of Hydrocarbon Fuels Development for Airbreathing/Hypersonics/Rocket Propulsion was hosted jointly with the Airbreathing Propulsion Subcommittee, and chaired by Matthew Billingsley of AFRL, Ron Bates of CPIAC, and Rick Wills of AFRL.

### **SPS Technical Highlights**

The SPS Program Committee hosted a total of 20 sessions during the week, and were kicked off by a heavily attended discussion panel on the domestic research and development activities in electric propulsion. Hani Kamhawi of NASA Glenn Research Center (GRC) moderated the panel of experts from NASA, the Department of Defense, industry, and academia. NASA GRC and Lockheed Martin teamed up to host two full days of sessions on the propulsion systems and technology of the Orion Crew Service Module.

Steve Richards, retired from NASA MSFC, and formerly of the JANNAF Executive Committee, chaired a remarkable panel discussion on the lessons learned from the Apollo era; David Owen of CPIAC moderated the panel of experts, including Mr. Richards, who currently works for Bangham Engineering of Huntsville, Clay Boyce (formerly of Aerojet Corporation), Carl Stechman of Aerojet, and James “Skip” Urquhart of Jacobs Technology/Huntsville. The session was strongly supported by a wide array of attendees, spanning all levels of experience—and seemed equally engaging for young engineers and seasoned veterans.

A technical interchange meeting on the status and future of solar sail technology was hosted by C. Les Johnson of NASA MSFC. Those gathered expressed encouragement and excitement over the recent breakthroughs in the field, and the near term opportunities on the horizon. A workshop on the decomposition and ignition of advanced monopropellants was chaired by Anthony Zuttarelli of AFRL, which provided a forum to brief the industry on the latest advancements from AFRL funded programs, and to discuss a path forward for near term research goals and focus.

### **Meeting Proceedings**

Meeting proceedings will be available soon on CD-ROM. Qualified customers may contact CPIAC Customer Service at 410-992-7300 or by e-mail to [cpiac@cpiac.jhu.edu](mailto:cpiac@cpiac.jhu.edu) for more information or to order the proceedings.

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