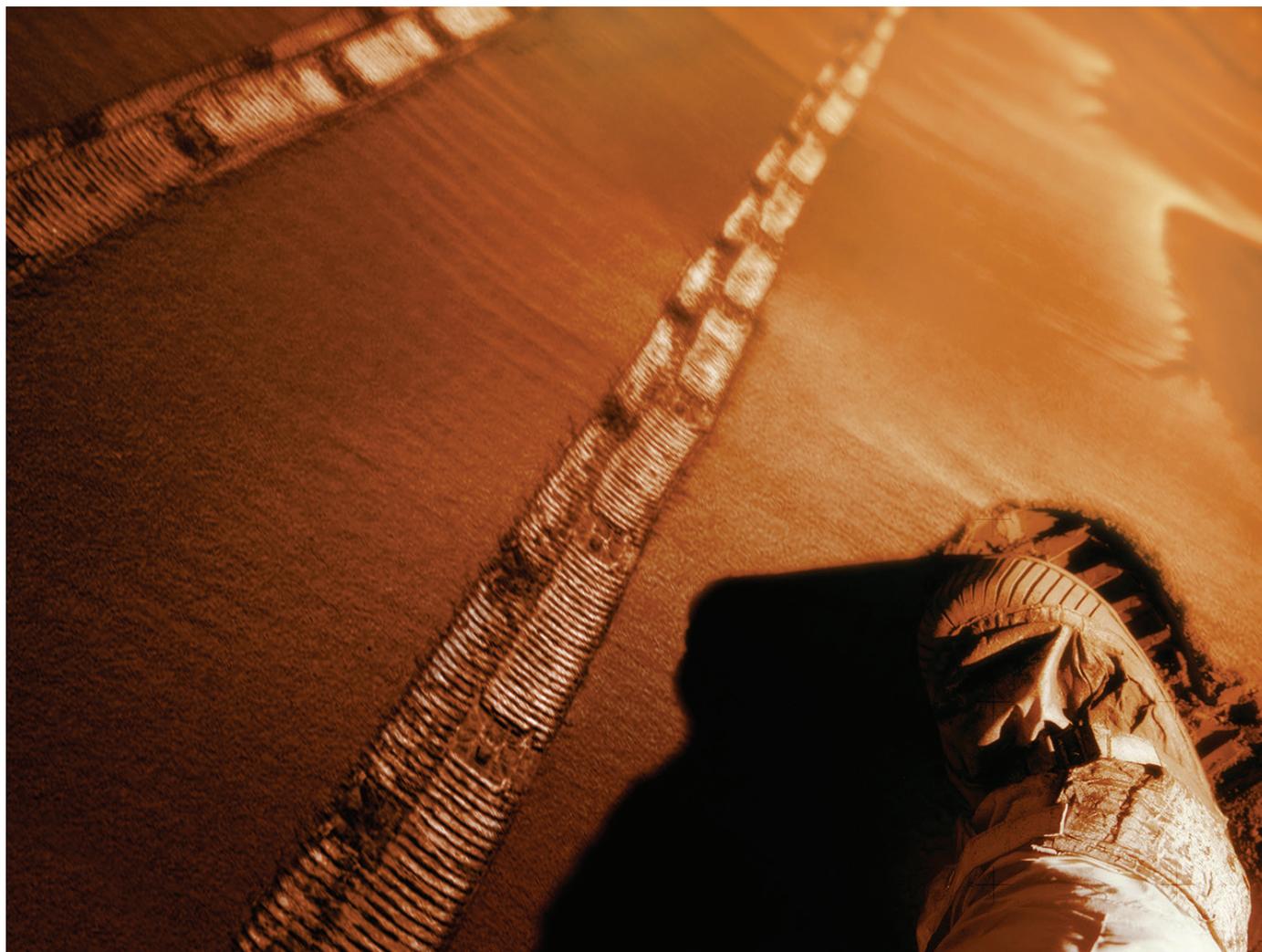




PRESS KIT/OCTOBER 27, 2014

marshall media day



Media Day Press Kit

Welcome to NASA's Marshall Space Flight Center. We are located on the Army's Redstone Arsenal in Huntsville, Alabama. The U.S. Space & Rocket Center, just outside the arsenal, serves as Marshall's official NASA Visitor Center.

Social media

Use the media day hashtag “#nasamarshall” to connect and interact with the NASA Marshall community, and follow us at:

Facebook: <http://www.facebook.com/nasamarshallcenter>

Twitter: http://twitter.com/NASA_Marshall

Instagram: http://instagram.com/nasa_marshall

Flickr: <https://www.flickr.com/photos/nasamarshall/>

YouTube: <https://www.youtube.com/user/NASAMarshallTV>

Google+: <https://plus.google.com/101548568475678729022/posts>

Connect to the Internet

Marshall provides Wi-Fi access to guests with a valid email address. To connect, browse the list of available wireless options in your mobile device and select “NASA Guest” from the list of options.

Guidelines for reporters

- All sessions and interviews are on the record. The day allows ample time for questions and answers at all locations. We have a full agenda and ask that any individual interviews not interfere with the group’s tour. If you would like to pursue in-depth interviews, please work with a Marshall public affairs officer and schedule other opportunities.
- Media will be escorted by public affairs officers on the Marshall Center campus at all times.
- Photography, videography, audio recording of sessions are allowed. Only export-controlled or proprietary information may not be photographed or videotaped and public affairs officers will identify and make reporters aware of any restrictions.

This press kit and additional links and information can be found at:

http://www.nasa.gov/centers/marshall/news/news/releases/2014/media_day_resources.html

Schedule

Speaker biographies are in the final section of this press kit

8:00 Registration

U.S. Space & Rocket Center

Check-in and badging at the Davidson Center for Space Exploration, where the Marshall Space Flight Center Technology Exposition is underway.

8:30 Welcome

Davidson Center, Ultimate Field Trip Classroom

- Patrick Scheuermann, Director, NASA's Marshall Space Flight Center
- Jody Singer, Manager, Flight Programs & Partnership Office

8:45 *Take seats in Davidson Center 3-D Theater*

9:00 Destination Station: ISS Technology Forum

Davidson Center, 3-D Theater

A one-hour, interactive panel discussion broadcast live on NASA Television

- Dan Huot, NASA Public Affairs Officer, Johnson Space Center, Host
- Jeffrey Sheehy, Senior Technologist, NASA's Space Technology Mission Directorate
- Robyn Gatens, Manager, ISS System and Technology Demonstration, and Environmental Control Life Support System expert
- Jose Benavides, Chief Engineer, SPHERES
- Rich Reinhart, Principal Investigator, SCan Testbed
- Niki Werkheiser, Project Manager, 3-D Printing in Zero-G

10:00 Time for one-on-one interviews and exhibits

Davidson Center, Saturn V Hall

10:45 *Depart by bus to Marshall Space Flight Center*

11:00 ISS Payload Operations Integration Center & Laboratory Training Complex

Building 4663, Room B202

- Lybrease Woodard, Associate Director, Mission Operations Laboratory
- Carol Jacobs, Payload Operations Director
- Justin Kugler, Business Development Manager, Center for the Advancement of Science in Space
- Eric Melkerson, Manager, Mission Operations Laboratory Training & Crew Operations
- Tara Ruttley, Associate Program Scientist, ISS Program Science Office, Johnson Space Center

12:00 *Board bus*

12:15 Science & Tech Lunch

Propulsion Research & Development Laboratory – Building 4205, Room 112a

Led by Daniel Schumacher, manager, Marshall's Science & Technology Office, with:

- Joseph Pelfrey, Deputy Manager, Exploration & Space Transportation Development
- Barbara Cohen, Planetary Scientist and Principal Investigator, Lunar Flashlight
- Les Johnson, Principal Investigator, Near Earth Asteroid Scout
- Gary Jedlovec, Principal Investigator, Short-term Prediction Research & Transition
- Terry Taylor, Assistant Manager, Technology Development & Transfer Office
- Amy Winebarger, Senior Astrophysicist, Heliophysics & Planetary Science Office
- Sam Ortega, Program Manager, Centennial Challenges Program
- John Dankanich, Project Manager/Technologist, Technology Development & Transfer Office

1:30 Space Launch System Hardware-in-the-Loop Laboratory

Building 4205, Room 109

- Tony Lavoie, Manager, SLS Stages Element
- Kurt Jackson, Discipline Lead Engineer, SLS Integrated Avionics & Software
- Dan Mitchell, Discipline Lead Engineer, SLS Integrated Avionics and Software

**2:00 Nuclear Thermal Rocket Element Environment Simulator,
Iodine Satellite Propulsion**

Building 4205, Room 101

- Mike Houts, Manager, Nuclear Systems
- John Dankanich, Project Manager/Technologist, Technology Development & Transfer Office

**2:45 Additive Manufacturing, 3-D Printing, Early Career
Initiative program**

National Center for Advanced Manufacturing – Building 4707, Rooms 119 & 142

- Michael Gazarik, NASA Associate Administrator for Space Technology
- John Vickers, Assistant Manager, Materials & Processes Laboratory
- Ken Cooper, Team Lead, Additive Manufacturing
- Niki Werkheiser, Project Manager, 3-D Printing in Zero-G
- Nick Case, Engineer, Propulsion Systems

3:30 *Board bus*

Comfort break on arrival at Building 4220

4:00 Orion’s first flight mission preview press briefing

Building 4220, Room 5106

- Mark Geyer, Orion Program Manager, Johnson Space Center
- Todd May, SLS Program Manager
- Nick Cummings, Exploration Integration Manager, Ground Systems Development and Operations Program, Kennedy Space Center

5:00 *Board bus for return to USSRC*

5:30 Private tour of USSRC for those interested

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High Resolution Photos & Video

High-resolution photographs can be downloaded from:

<http://www.nasa.gov/centers/marshall/multimedia/index.html>

Broadcast quality video can be downloaded from:

<http://www.nasa.gov/content/marshall-space-flight-center-b-roll-video-download>

For information about NASA Television channels, visit <http://www.nasa.gov/ntv>

Speaker bios

Jose Benavides

Jose Benavides has spent over six years with the Advanced Control and Evolvable Systems group in the Intelligent Systems Division at NASA's Ames Research Center in Moffett Field, California. His research interests include embedded systems, rapid prototyping of control systems, air traffic guidance and control, spacecraft, small satellites, and human-machine interaction.

Benavides is currently leading an engineering team in charge of the International Space Station SPHERES Facility. The SPHERES Facility is one of the most used and popular ISS National Lab Facilities with more than 80 on-board test sessions and 400+ hours of Facility Console activities involving crew. He holds Bachelor and Master of Science degrees from Arizona State University in electrical engineering with specialization in control systems.

Nick Case

Nick Case is an engineer in the Liquid Engines Systems Branch at Marshall Space Flight Center. His current duties include the design, analysis, building and testing of liquid engine systems and components for NASA's Space Launch System and other research and development projects. He is currently serving as the Test Integration Lead responsible for developing and testing several engine components and sub-systems using additive manufacturing.

Previously, Case was lead systems engineer for the F-1 Gas Generator test program. He joined NASA Marshall Space Flight Center (MSFC) as a co-op student where he supported many component development programs as well as the Space Shuttle program and Ares 1 development. Case received his Bachelor of Science in Mechanical and Aerospace Engineering from the University of Alabama in Huntsville in May of 2008.

Barbara Cohen

Barbara Cohen leads the planetary science group at Marshall Space Flight Center. Originally from upstate New York, Cohen earned her Bachelor of Science in geology from the State University of New York at Stony Brook and her doctorate in planetary science from the University of Arizona.

Currently, Cohen is principal investigator for multiple NASA projects and is a co-investigator on several spacecraft and instrument proposal teams. Her current science interests concentrate on understanding the importance of impact craters in the solar system. She is the principle

investigator for Marshall's Noble Gas Research Laboratory, which provides age dates on impact materials from the moon, asteroids, and Mars. She is also developing a flight version of her noble-gas geochronology technique, the Potassium-Argon Laser Experiment, for use on future planetary landers and rovers. She recently served on the Planetary Science Decadal Survey, which provides a roadmap for NASA Planetary Science missions, research, and technology priorities in the decade starting 2013.

Nicholas Cummings

Nicholas Cummings currently serves as the Exploration Integration manager for the Ground Systems Development and Operations Program at NASA's Kennedy Space Center in Florida. In this position, he manages the technical integration of GSDO with the Space Launch System, Orion and other exploration spacecraft and payloads. Working with the Exploration Systems Development Division at NASA Headquarters, along with the Orion and Space Launch System Programs, Cummings provides leadership for more than 30 task teams, developing safety, engineering and mission management products for Exploration Systems Development.

Prior to his current position, Cummings served as a NASA fellow in the office of U.S. Sen. Bill Nelson. He served as adviser on all scientific and technical matters and supported the senator in his capacity as chairman of the Subcommittee on Science and Space. Cummings began his career at NASA in 2001 in the International Space Station and Space Shuttle Payloads Directorate at Kennedy. He worked as an operations engineer supporting assembly, integration and testing of multiple International Space Station cargo elements. Cummings also worked preparing the payload complements for the fourth Hubble Space Telescope servicing mission and the STS-107 research mission for launch. Cummings later joined the Constellation Program, where he led development of the ground processing and launch operations concepts, a role which he continued through the transition to GSDO as chief of the Operations Integration Branch. Cummings pioneered the use of several advanced operations engineering and simulation techniques to reduce the ground processing costs of the next generation of human spaceflight systems, including the Space Launch System and Orion.

Cummings is a recipient of numerous agency and center awards, including the NASA Exceptional Achievement Medal, the Silver Snoopy and multiple group achievement awards, including Kennedy's Software of the Year Award. Cummings earned his Bachelor of Science in aerospace engineering from Virginia Tech, and a Master of Science in industrial engineering from the University of Central Florida.

John Dankanich

John Dankanich is a Project Manager/Technologist in Marshall Space Flight Center's Technology Development and Transfer Office. Previously, he supported advanced propulsion work at NASA Glenn Research Center. His area of research is technology development, primarily propulsion,

electric propulsion system design and analyses, propellant feed system design, and trajectory design and optimization.

Robyn Gatens

Robyn Gatens has 29 years of experience in development and management of environmental control and life support systems or ECLSS, at NASA. Until early 2006, Gatens worked to develop ECLSS technologies for the International Space Station, including the regenerative ECLSS water recovery system and oxygen generation system.

Gatens has held leadership positions at Marshall Space Flight Center, and served as manager for the Orion crew support and thermal systems from 2009 to 2012 before transferring to NASA Headquarters in Washington. Gatens is currently the manager for systems and technology demonstrations for the ISS division within the Human Exploration Mission Directorate at NASA Headquarters and is also serving as systems maturation team lead for ECLSS and environmental monitoring. She holds a Bachelor of Science in chemical engineering from the Georgia Institute of Technology.

Michael Gazarik

Dr. Michael Gazarik serves as associate administrator of the Space Technology Mission Directorate. As associate administrator, he manages and executes the Space Technology programs, focusing on infusion into the agency's exploration and science mission needs, proving the capabilities needed by the greater aerospace community, and developing the nation's innovation economy. Prior to this appointment, Gazarik was deputy chief technologist and director for space technology, focusing on enabling effective implementation of the Space Technology programs. At NASA's Langley Research Center, Gazarik served as deputy director for programs in the Engineering Directorate. In this role, he balanced the engineering and fabrication capabilities across projects, from conceptual design to spaceflight operations; focused the directorate's resources to deliver flight hardware for numerous flight programs; and led the formulation of a variety of programs in aeronautics, exploration, and science.

Gazarik has over 25 years of experience in the design, development, and deployment of spaceflight systems. He has contributed to the development of technology with application to NASA's Exploration Systems, Space Operations and Science missions. Prior to joining NASA, Gazarik served as project manager for the Geosynchronous Imaging Fourier Transform Spectrometer project at the Massachusetts Institute of Technology's Lincoln Laboratory. He also led the development of the Airborne Sounder Testbed-Interferometer, an instrument that helps scientists understand temperature and water vapor profiles of the Earth's atmosphere. Gazarik also worked in the private sector on software and firmware development for commercial and government applications.

Gazarik earned a B.S. in Electrical Engineering from the University of Pittsburgh in 1987. He earned an M.S. in 1989 and a Ph.D. in 1997, both in electrical engineering, from the Georgia Institute of Technology. He has received numerous awards, including NASA's Outstanding Leadership Medal and a Silver Snoopy Award, one of NASA's highest honors.

Mark Geyer

Mark S. Geyer is program manager at the Orion Program Office, where he is responsible for the day-to-day management, development, and integration of the Orion crewed exploration system.

An Indiana native, Geyer received his Bachelor of Science in aerospace engineering from Purdue University in 1982. He also earned a master of science in aerospace engineering from Purdue in 1983. Prior to joining the Orion Program Office in 2007, Geyer served as manager of the ISS Russian Elements Team from 1997 to 2000, manager at the ISS Program Integration Office from 2000 to 2004, manager of systems engineering and integration for the Exploration Systems Mission Directorate at NASA's Headquarters in 2005, and deputy program manager of the Constellation Program from 2005 to 2007.

Throughout Geyer's career he has received multiple awards. He has been honored with the NASA Exceptional Service Medal in 2000, the Space Flight Awareness Leadership Award in 2003, the NASA Outstanding Leadership Medal in 2005, the NASA Meritorious Executive Rank Award in 2006, the NASA Distinguished Executive Rank Award in 2011, the NASA Outstanding Leadership Medal 2012, and was a nominee for the Federal Engineer of The Year Award in 2012.

Mike Houts

Mike Houts is manager of Nuclear Research at Marshall Space Flight Center, where he provides guidance and technical advice on research and development related to the design, development, and utilization of space nuclear power and propulsion systems.

Houts earned a Bachelor of Science in both mechanical and nuclear engineering from the University of Florida, as well as a doctorate in nuclear engineering from the Massachusetts Institute of Technology. He has served as deputy group leader for a 70-person Nuclear Design and Risk Analysis Group at the Los Alamos National Laboratory, and served as chairman of the 15th through 17th and 25th Symposiums on Space Nuclear Power and Propulsion.

Houts has been lead author of more than two-dozen technical papers related to space nuclear power and propulsion, as well as additional papers related to accelerator transmutation of waste, plutonium disposition and other topics. He has co-authored over 100 technical papers and received numerous distinguished performance awards.

Kurt Jackson

Kurt Jackson has been a Discipline Lead Engineer for Space Launch System Integrated Avionics and Software since 2011. He earned a Bachelor of Science in electrical engineering from the Georgia Institute of Technology in 1982 and joined NASA in June 1983. His NASA career includes serving as chief, Avionics Design Division, Space Systems Department; chief, Electrical Design and Integration Division, Instrument & Payload Systems Department; leader, Instrumentation and Control Group, Avionics Department; deputy leader, Instrumentation and Control Group, Avionics Department; Astrionics Laboratory lead engineer, Chandra X-Ray Observatory; and chairman, Pointing Control and Aspect Determination Hardware Technical Oversight Panel, Chandra X-Ray Observatory. Jackson was awarded the NASA Exceptional Service Medal in 2000.

Carol Jacobs

Carol Jacobs is a payload operations director for the International Space Station. She started her career at Marshall Space Flight Center in 1983 in the Propulsion Laboratory. Throughout most of her time at Marshall she has worked in the development of liquid rocket engine combustion devices. She spent one year at NASA Headquarters as the Space Shuttle Main Engine representative to the Office of Space Flight and one year at the Johnson Space Center's advanced space propulsion laboratory, working on the variable specific impulse magnetoplasma rocket.

From 2003 until the end of the Space Shuttle Program, Jacobs served as the space shuttle main engine combustion devices subsystem manager. In September 2011, Jacobs began training to become a certified payload operations director. She has served as a payload operations director for the last two years, managing and integrating operations activities required to support human spaceflight and scientific investigations on-board the ISS.

Gary Jedlovec

Gary Jedlovec has spent most of the last 30 years developing and evaluating algorithms to retrieve geophysical parameters from remotely sensed aircraft and satellite measurements for regional climate studies, weather forecasting, and disaster applications. He is currently leading an effort to transition the use of unique NASA Earth Observing System satellite data into selected weather forecast offices around the country as part of the Short-term Prediction Research and Transition (SPoRT) project (<http://weather.msfc.nasa.gov/sport>) to demonstrate the utility of these data to improve short term weather forecasts. Over the last few years, this project has focused on using NASA satellite data to detect and monitor natural disasters, providing valuable information to the USGS, FEMA, and other disaster response agencies.

Jedlovec received his Bachelor of Science and Master of Science degrees in meteorology in

1979 and 1981 from Saint Louis University, Saint Louis, Missouri. He was awarded the doctorate in meteorology with a minor in remote sensing from the University of Wisconsin - Madison in 1987. He joined NASA's Marshall Space Flight Center in 1985 and holds an adjunct professor position with the University of Alabama in Huntsville, where he teaches and mentors graduate students in atmospheric sciences.

Les Johnson

Les Johnson is senior technical adviser for NASA's Advanced Concepts Office at Marshall Space Flight Center. He is principal investigator of the Near Earth Asteroid Scout mission which will use an 85-square-meter solar sail to survey a near earth asteroid, and he serves as the NASA co-investigator on InflateSail, a European Union solar sail project led by the University of Surrey in the United Kingdom. Johnson's expertise is advanced in-space propulsion, focusing mainly on alternatives to conventional chemical rockets. In January 2013 he was the featured Interstellar Explorer in *National Geographic's* 125th anniversary issue celebrating the future of exploration, and is a TEDx speaker. He is also a published author with three science fiction books and several non-fiction books about space and space exploration in print.

Justin Kugler

Justin Kugler is business development lead at the Center for the Advancement of Science in Space for energy, materials, and physical sciences. His particular focus is helping CASIS identify and develop new industry partnerships to demonstrate the value of space research for terrestrial benefit.

Kugler has more than a decade of experience in systems engineering and research management, including the startup of the International Space Station National Laboratory Office at Johnson Space Center, intelligent systems research at Rice University, and service as a systems analyst at the Central Intelligence Agency.

Tony Lavoie

Tony Lavoie was named manager of the SLS Stages Element office at Marshall Space Flight Center in 2010. He joined NASA in October 1982 and has held significant leadership positions in science and human-related flight programs. From 2008 to 2010, he served as deputy manager of Marshall's Space Systems Department, where he helped manage the department responsible for designing, developing, assembling, integrating, testing and delivering flight, ground, prototype, and development products for human spaceflight programs. Lavoie has also managed Marshall's Lunar Precursor Robotic Program and served as director of the Flight Projects Directorate, responsible for project management, design, development, integration, testing, and operations of ground and flight systems for the International Space Station, the Chandra X-ray Observatory,

and other programs. His other positions have included deputy director of Flight Projects and manager of the Chandra X-ray Observatory as well as chief engineer for the Tethered Satellite System Project and chief of telescope and science instruments for the Chandra Chief Engineer Office.

During his years of federal service, he has received numerous awards, including a NASA Exceptional Achievement Medal in 1991 and 2012, and the NASA Outstanding Leadership Medal in 2000 and 2007. He also received a Marshall Contracting Officer's Technical Representative of the Year award in 2001 and a Marshall Center Director's Commendation in 1986 for his contribution to the Spacelab 2 Mission. Lavoie earned a Bachelor of Science in aeronautics and astronautics in 1981 from the Massachusetts Institute of Technology in Cambridge, Massachusetts.

Todd May

Todd May is manager of the Space Launch System Program, located at NASA's Marshall Space Flight Center, leading the nationwide team developing America's next heavy-lift vehicle for deep-space exploration and science.

Before beginning his work with SLS in 2011, May oversaw or helped manage many robotic and human spaceflight efforts, including the Lunar Reconnaissance Orbiter and the Lunar Crater Observation Sensing Satellite that confirmed the presence of ice on the Moon; the Chandra X-Ray Observatory; new propulsion technologies; the Discovery and New Frontiers Program Office, which developed low-cost missions to encounter comets and asteroids, return scientific samples from deep space, and explore Pluto for the first time; Gravity Probe B, which tested Einstein's general theory of relativity; and the International Space Station's airlock, working with NASA's Russian partners and ISS payloads.

May earned a Bachelor of Science in materials engineering from Auburn University, and has completed all coursework for a doctorate in materials science. His many awards include NASA's Exceptional Achievement Medal, the Senior Executive Presidential Rank Award, and NASA's Outstanding Leadership Medal. He recently accepted the Rotary National Award for Space Achievement Foundation's Stellar Award in recognition of the Space Launch System team's many accomplishments.

Eric Melkerson

Eric Melkerson has 25 years of International Space Station experience. He has worked at both the Mission Control Center at the Johnson Center and the Payloads Operations Integration Center at Marshall Space Flight Center. He worked 11 years in the Motion Control System,

developing operational concepts and flight products, culminating in the manning of the Attitude Determination and Control Officer Console for the first two years of ISS flight. He then served five years as a payload operations director responsible for the Marshall Center's Flight Control team executing NASA payloads.

Since 2005, Melkerson has been chief of the Training and Crew Operations Branch responsible for developing procedures and training used by flight controllers and Astronauts in the execution of NASA science, research, and commercial payloads.

Dan Mitchell

Dan Mitchell manages the Marshall Space Flight Center Flight and Ground Software Division, which is responsible for development of the Space Launch System flight software, as well as the SLS integrated avionics and software test facilities. The Flight and Ground Software Division provides comprehensive engineering expertise for the development of flight and ground software, including software development facilities, avionics and software ground systems test facilities, and operation facilities. The Division is a Capability Maturity Model Integration Maturity level 3-rated organization for development of flight software.

Mitchell began his NASA career in 1990 as a computer engineer in Marshall's Information and Electronic Systems Laboratory where he was responsible for development of several key avionics and software integration facilities. From 2000 to 2014, he served as the avionics and software lead on several Marshall-managed projects, including X-40A, X-37, Ares I, and SLS. In June 2014, Mitchell was selected to lead the Flight and Ground Software Division.

Mitchell earned a bachelor's degree in computer engineering from Auburn University, and a master's of systems engineering from the University of Alabama in Huntsville.

Sam Ortega

Sam Ortega manages NASA's technology prize competitions, the Centennial Challenges, which were founded in 2005 to stimulate innovation in technologies of interest to NASA and the nation. Centennial Challenges engage independent inventors — small businesses, student groups and individuals — to develop and demonstrate prize-winning solutions that may have a dramatic impact on industry, exploration and everyday life. There have been more than 20 Centennial Challenges competition events since 2005, and NASA has awarded more than \$6 million to challenge-winning teams

Rich Reinhart

Richard Reinhart is a senior communications engineer with NASA's Glenn Research Center in Cleveland, Ohio. He is the principal investigator for NASA's software defined radio flight

experiment called the Space Communications and Navigation or SCaN Testbed. He has worked with a variety of space-related technologies including satellite communications and system architectures, ground station development, phased array antennas, and software-defined radios. Reinhart has produced a number of technical papers and conference presentations on work associated with the SCaN Testbed, software-defined technology and radio architectures and the Advanced Communications Technology Satellite, one of the first satellites operating at the Ka-band frequency.

Tara Ruttle

Tara M. Ruttle is an associate program scientist for the International Space Station at NASA's Johnson Space Center in Houston. Her role in the ISS Program Science Office consists of representing and communicating all research on the space station, and supporting the ISS Chief Scientist's research recommendations to the ISS Program Manager and to NASA Headquarters.

Prior to this position, she was the lead flight hardware engineer for the medical equipment and human research hardware used on the International Space Station. Combining her love for Biology and human spaceflight, she holds a Bachelor of Science in biology and a Master of Science in mechanical engineering from Colorado State University.

Ruttle came to work for NASA in 2001 where she began her career as a project engineer for the exercise bicycle that's currently on the ISS. While working as an engineer, she pursued her doctorate in neuroscience and, upon completion, joined the ISS Program Science Office, where she's since enjoyed playing an active role in the science activities taking place on the ISS.

Ruttle believes there are many unique aspects about the microgravity environment that cause distinct changes in all living and physical systems, which drives us to explore and think about our home planet differently. She believes the research happening on the ISS is critical for the future of exploration at NASA, and drives advancements on Earth across health, economy, education, and international partnerships. She has authored publications ranging from hardware design to neurological science, and also holds a U.S. utility patent.

Patrick Scheuermann

Patrick Scheuermann is director of NASA's Marshall Space Flight Center in Huntsville, Alabama. Named to the position in September 2012, he heads one of NASA's largest field installations, with nearly 6,000 on- and near-site civil service and contractor employees – including those at NASA's Michoud Assembly Facility in New Orleans – and an annual budget of approximately \$2.5 billion. Scheuermann manages a broad range of propulsion, scientific and space transportation activities contributing to the nation's space program.

From 2010 to 2012, he served as director of NASA's Stennis Space Center near Bay St. Louis, Mississippi. There, he implemented the agency's mission in the area of rocket propulsion testing;

developed and maintained NASA's world-class rocket propulsion test facilities; and ensured Stennis continued to serve as the systems engineering center for the agency's applied science activities.

Scheuermann was deputy director at Stennis from 2008 to 2010, and served as associate director from 2007 to 2008. From 2005 to 2007, he was chief operating officer of NASA's Michoud Assembly Facility in New Orleans, where he was responsible for day-to-day management and operation, and led the facility's recovery in the aftermath of Hurricane Katrina in 2005.

From 1998 to 2000, Scheuermann served in Washington as a legislative fellow for U.S. Senate Majority Leader Trent Lott of Mississippi, as a participant in the Congressional Fellowship Program. From 1996 until his move to the nation's capital, he was chief of the New Business Office at Stennis, leading strategic investment planning and capability assessments for the center.

From 1994 to 1996, he was project manager at Stennis for NASA's Reusable Launch Vehicle program, a NASA-industry effort to develop a new generation of rockets to safely and cost-effectively send payloads to space. He also served as project manager for the Evolved Expendable Launch Vehicle program, an effort led by the U.S. Air Force to build a family of expendable rockets that would reduce the costs of launching American payloads to space.

Scheuermann was project manager from 1991 to 1994 for the National Aerospace Plane project, a joint effort by NASA, the Department of Defense and industry to research and demonstrate hypersonic technologies for development of a single-stage-to-orbit vehicle capable of horizontal takeoff and landing and long-range, hypersonic flight within the atmosphere. He also was responsible for the design and construction of Stennis' E-2 Test Facility, a \$35 million test facility supporting materials development by subjecting test articles to extreme temperature conditions.

From 1988 to 1991, Scheuermann was lead mechanical engineer for the National Launch System Program, a joint NASA and Department of Defense effort to develop a space transportation system to reliably and cost-effectively deliver a range of payloads to low-Earth orbit. His primary responsibility was overseeing construction of the E-1 Test Facility at Stennis. The \$150 million facility, originally designed for rocket engine component testing, conducts developmental tests requiring high pressure and high flow cryogenic fluids, hydrogen, oxygen, inert gases and industrial water.

Scheuermann joined NASA in 1988 as a propulsion test engineer at Stennis, supporting testing of a developmental spacecraft propulsion system for NASA's Advanced Launch System/National Launch System programs.

Prior to joining NASA, from 1986 to 1988, he was a space shuttle main engine test conductor for

the Boeing Company in Bay St. Louis, Miss.

During his NASA career, Scheuermann has received numerous awards and honors. In 2006, he received NASA's Outstanding Leadership Medal for leading recovery efforts at Michoud following Hurricane Katrina. He received NASA's Exceptional Service Medal in 2001, cited for demonstrating substantial improvement in engineering, aeronautics, space flight and space-related endeavors. He received a Distinguished Alumnus Award in 2001 from the University of New Orleans. In 1998, he was a finalist in NASA's astronaut candidate selection program. He successfully completed the Senior Executive Service Candidate Development Program in 2005.

A native of New Orleans, Scheuermann received a bachelor's degree in mechanical engineering in 1986 from the University of New Orleans.

Dan Schumacher

Dr. Daniel M. Schumacher is manager of the Science & Technology Office at the Marshall Center. Named to the position in 2011, he has primary management responsibility for day-to-day operations of the organization and its portfolio of more than 50 programs and projects. The office develops, operates and executes NASA science and technology projects and activities to expand scientific understanding of Earth and the universe in which we live, and to create the innovative new space technologies that will drive exploration, science and our nation's economic future.

He was appointed to the Senior Executive Service in 2008. The Senior Executive Service is the personnel system that covers most of the top managerial, supervisory and policy positions in the executive branch of the federal government.

From 2010 to 2011, Schumacher was manager of the Marshall Center's Science & Mission Systems Office. Under his leadership, the office developed, operated and executed NASA programs, projects and activities in science, technology development and exploration. He was director of Marshall's Office of Strategic Analysis & Communications from 2008 to 2010, leading the center's organization for strategic decision-making and internal and external communications.

He was deputy project manager of the Lunar Lander Project Office at Marshall from 2007 to 2008. He managed the Marshall Center's Exploration Flight Projects Office from 2006 to 2007, leading work on the Orion crew exploration vehicle.

In 2005, Schumacher accepted a one-year assignment to NASA Headquarters in Washington. His duties included serving as the NASA chief engineer's representative on the Nunn-McCurdy congressional review of the National Polar-Orbiting Operational Environmental Satellite System.

From 2003 to 2005, he was manager of Systems Engineering, Integration and Testing for the X-

37 Project Office, overseeing development of an orbital demonstrator craft intended to test future launch technologies on orbit and during atmospheric reentry.

Schumacher began his NASA career in 2001 in Marshall's Second Generation Launch Vehicle Program Office. He started his professional career in 1989 at Wright-Patterson Air Force Base in Ohio, as team lead on the F-16 aircraft. He then spent seven years in Huntsville as a systems engineer on the Theater High Altitude Area Defense Project, a key element of U.S. missile defense systems. He later was an engineer for XonTech Inc., a commercial science and technology firm in Van Nuys, California, and in the Program Executive Office for Missile Defense at Redstone Arsenal in Huntsville before joining NASA.

Schumacher earned a Bachelor of Science in industrial engineering in 1989 from Texas A&M University in College Station. He holds a Master of Science and doctorate in engineering from the University of Alabama in Huntsville.

During his years of federal service, he has received numerous awards, including a NASA Exceptional Achievement Medal in 2011, presented for sustained endeavors that contributed significantly to NASA's mission; an Achievement Medal for Civilian Service in 1998, presented by the Department of the Army to honor superior service benefiting the U.S. Armed Forces; and several NASA group achievement and special service awards. He has completed management and leadership courses at Georgetown University in Washington and the Center for Creative Leadership in Greensboro, North Carolina. He completed the Harvard Senior Executive Fellows Program in May 2008.

Jeffrey Sheehy

Jeffrey Sheehy serves as the senior technical officer of NASA's Space Technology Mission Directorate, advising the associate administrator and deputy associate administrators on technology investment planning for the Space Technology Mission Directorate portfolio. He has nearly 25 years of experience in aerospace technology research, development, and demonstration at NASA and the Air Force Research Laboratory.

Before accepting his current appointment, he was chief engineer of the Technology Demonstration Missions program, which is managed by Marshall Space Flight Center. Sheehy provided technical and systems engineering oversight for a diverse portfolio of flight demonstrations including solar sail propulsion, supersonic decelerators, laser communications relay, deep-space atomic clock, cryogenic propellant storage, advanced chemical propellants, and telerobotics.

Prior to that, Sheehy was deputy chief engineer for the Orion Launch Abort System, which involved the development and demonstration of new solid rocket motor technologies including a

reverse-flow abort motor and a pintle-modulated controllable-solid attitude control motor. The culmination of those efforts was a remarkably successful Pad Abort 1 flight test.

Earlier in his time at Marshall, Sheehy was a branch chief in the Propulsion Research Center, leading a team in the research and development of novel thruster concepts for high-power electric propulsion.

At the Air Force Research Laboratory, Sheehy was chief of the Propellants Branch, leading a group engaged in the development of new rocket propellants. Additionally, he was team lead of the High Energy Density Matter program, which pursued the discovery of highly energetic propellant ingredients.

Prior to moving to the Air Force Research Laboratory, Sheehy performed theoretical and computational chemical physics research on problems relevant to astrophysics, materials science, and space vehicle thermal protection at NASA's Ames Research Center.

Sheehy holds a doctorate in chemical physics from Indiana University and a prestigious postdoctoral associateship award from the National Research Council. He has authored or co-authored 40 journal articles in peer-reviewed scientific literature, as well as five book chapters and 30 technical reports. He has received numerous awards, including an Air Force Exemplary Civilian Service Award and a NASA Exceptional Service Medal.

Jody Singer

Joan A. "Jody" Singer is program manager of the Flight Programs and Partnerships Office the Marshall Center.

Named to the post in June 2013, she is responsible for overall management and direction of the office, including an annual budget of \$108 million and a combined workforce of more than 500 civil-service employees and contractors. She holds primary responsibility for managing the implementation of the center's work portfolio in the areas of human exploration projects and tasks; flight mission programs and projects; and ISS hardware integration and operations.

The office also identifies opportunities to develop and maintain partnerships with other government agencies and international and commercial partners that will help achieve NASA's vision.

Singer was deputy program manager of the Space Launch System Program Office at Marshall from 2011 to 2013. She helped oversee a combined workforce of almost 3,000 civil servants and contractors, and guided activities that will lead to construction and flight-testing of the nation's next heavy-lift launch vehicle – set to carry human explorers to space in the decade to come.

From 2007 to 2011, Singer was deputy manager of Marshall's Space Shuttle Propulsion Office, where she helped lead the organization responsible for manufacturing, assembling and operating all shuttle propulsion elements, including the successful conclusion of the Space Shuttle Program.

Singer was manager of the Reusable Solid Rocket Booster Project Office at Marshall from 2002 to 2007, overseeing work tied to the flight safety, performance, hardware integrity and ground test program of the shuttle's reusable solid rocket booster hardware, including critical return-to-flight activities after the loss of space shuttle Columbia in 2003.

In 2002, Singer was appointed to the Senior Executive Service, the personnel system covering top managerial positions in federal agencies.

From 2000 to 2002, she was the assistant/deputy manager of the Shuttle Propulsion Office. She held various positions in the External Tank Project Office from 1990 to 2002, including deputy manager from 1998 to 2000; project assistant manager from 1996 to 1998; and business manager from 1990 to 1996. From 1986 to 1990, she worked as an engineer in the Space Shuttle Main Engine Project Office, responsible for tracking and evaluating contractor hardware deliveries. She joined NASA in 1985 as an engineer in the professional intern program.

Singer began her engineering career in 1984 as a methods engineer at Packard Electric, a division of General Motors, in Jackson, Mississippi, responsible for planning layout and assembly of automobile electrical wiring harnesses.

Singer earned a bachelor of science in industrial engineering from the University of Alabama in Tuscaloosa in 1983, and has completed numerous executive management training and certification. She has also completed two NASA fellowship courses with Pennsylvania State University in University Park and Simmons Graduate School of Management in Boston.

She has been received numerous awards during her NASA career, including the NASA Outstanding Leadership Medal in 2011 and the Presidential Rank of Meritorious Executive Award – the highest honor for career federal employees – in 2007. She also received the Silver Snoopy Award in 2011, presented by NASA's astronaut corps for service benefiting the agency's human spaceflight endeavors; the Space Flight Awareness Leadership Award in 2005 for leading the Shuttle Propulsion Office to strive for excellence and continuous improvement; another NASA Outstanding Leadership Medal in 2002 for her contributions to the Space Shuttle Propulsion Office; and the NASA Exceptional Service Medal in 1993 for outstanding management of the Space Shuttle External Tank Project's business office.

Terry Taylor

Terry Taylor has served as manager of Marshall Space Flight Center's Technology Transfer Office since January 2012. He joined NASA in 2000 working as a project engineer and a project manager on several Marshall projects including the X-37, the Constellation Development Planning Team, and the Ares Vehicle Integration Project Office.

Taylor started his career working as an aerospace engineer on various missile defense programs at the U.S. Army Space and Missile Defense Command in 1992. He holds a Bachelor and Master of Science in aerospace engineering from Mississippi State University.

John Vickers

John Vickers is the assistant manager of the Materials and Processes Laboratory at NASA's Marshall Space Flight Center. He has over 30 years of experience in materials and manufacturing -- research and development, engineering, and production operations for propulsion, spacecraft, and scientific systems. In addition, he serves as the manager of the NASA National Center for Advanced Manufacturing with operations in Huntsville, Alabama and New Orleans, Louisiana.

Vickers holds several assignments within the NASA Space Technology Mission Directorate: He is the Project Manager for Advanced Manufacturing Technology within the Game Changing Development Program, and the Project Manager for Composite Structures Technology within the Technology Demonstration Missions Program. He chairs the NASA Technology Roadmap process for the "Materials, Structures, Mechanisms and Manufacturing" technology area. He also supports the National Manufacturing Initiative and the Interagency Advanced Manufacturing National Program Office, which includes participation by the National Institute of Standards and Technology (NIST), the Department of Defense, the Department of Energy, NASA, the National Science Foundation, and other agencies.

Vickers' list of professional awards includes two NASA Outstanding Leadership Medals, the NASA Exceptional Service Medal, and the American Institute of Aeronautics and Astronautics Holger Toftoy Award. He has a bachelor's degree in engineering from the University of Alabama in Huntsville.

Niki Werkheiser

Niki Werkheiser is the NASA project manager for the 3-D Printing in Zero-G technology demonstration, which will be first 3-D printer to operate on the International Space Station. Werkheiser is developing NASA's in-space manufacturing vision, which will be critical to enabling exploration missions.

Previous to this role, Werkheiser served as the work breakout structure manager for NASA's Ares

Crew Safety and Reliability Office. She spent the majority of her career in NASA's Space Shuttle and International Space Station Programs payload offices, where she designed, developed, integrated and operated multiple NASA payloads. She works for NASA's Ames Research Center in California and is stationed at Marshall.

Werkheiser holds a Master of Science from the University of Alabama in Huntsville with an emphasis in gravitational and space biology, as well as a Bachelor of Arts in Russian studies and a Bachelor of Science in biology.

Amy Winebarger

Amy R. Winebarger is an astrophysicist in the Heliophysics and Planetary Science Office at Marshall Space Flight Center. She specializes in the analysis of observations of the solar corona and compares these observations with computer models of the solar corona. She also is involved in several instrument programs, including the High-Resolution Coronal Imager, or Hi-C, that studies the solar atmosphere.

Prior to joining NASA in 2010, Winebarger was an assistant professor at Alabama A&M University in Huntsville, Alabama, from 2006 to 2010. From 2001 to 2005, she was a research scientist at the Naval Research Laboratory in Washington. She was an astrophysicist from 1999 to 2001 at the Smithsonian Astrophysical Laboratory in Cambridge, Massachusetts.

A native of Kingsport, Tennessee, Winebarger holds a doctorate in physics from the University of Alabama in Huntsville. She earned a Master of Science in physics from UAH in 1997 and a Bachelor of Science in physics from King College in Bristol, Tennessee.

She has received numerous awards throughout her career and has made significant contributions in the field of physics. She was principal investigator or co-investigator on many National Science Foundation and NASA research grant projects. She is currently principal investigator on a grant project for NASA's Solar and Heliospheric Physics Program. The project, under way until 2014, uses temperatures and pressures measured in solar active regions as diagnostics for coronal heating. She also has contributed to more than 10 astrophysics journal publications.

Lybrease Woodard

Lybrease Woodard is associate director of the Mission Operations Laboratory in Marshall Space Flight Center's Engineering Directorate, providing leadership and direction to civil service and contractor engineers performing mission operations functions.

Woodard has supported the mission operations community through the Spacelab Program and the ongoing International Space Station Program. During her career, Woodard served in several

mission operations disciplines, including training and crew operations, operations integration, and command and control execution. She served in several flight controller positions from 1983 to 2005. During this period, Woodard led the ISS Increment-2 science payload operations team in the inaugural six-month increment of 24x7 payload operations support at Marshall's Payload Operations Integration Center. As lead payload operations director, she was responsible for certification of the plan, train, and fly aspects of the ISS research to be executed. Woodard served as a payload operations director for the ISS Program for six years.

In 2005, Woodard was selected as chief of the Operations Directors Office at Marshall's Mission Operations Laboratory, managing the team of payload operations directors responsible for leading ISS operations integration and execution. From 2005 to 2012, Woodard served a dual role as the ISS Payload Operations Integration Function project manager with a matrixed direct reporting role to Johnson Space Center's ISS Program Research Integration Office, primarily responsible for contract execution and certification of the ISS payload operations products and ground flight control team.

Woodard was selected as the Associate Director for the Mission Operations Laboratory in 2012. She has received several honors during her career. The most notable include the Silver Snoopy Award, NASA Exceptional Achievement Medal, NASA Outstanding Leadership Medal, and the Federal Women's Program Outstanding Achievement Award in supervisory.

Woodard is a native of Huntsville, Alabama. She began her 36-year career at NASA as a cooperative education student. Woodard earned a Bachelor of Science in industrial engineering from the University of Alabama at Tuscaloosa in 1982.

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