



Glenn, FAA Conduct Tests to Advance Secured Wireless Data Communications

Under a fully reimbursable Space Act Agreement, NASA Glenn and the Federal Aviation Administration (FAA) recently completed aircraft-based testing of a new class of broadband secure wireless mobile data communications established for reliable high-data-rate networking for air traffic controllers, pilots, airlines and airport operators on the airport surface.

This milestone accomplishment is the result of nearly 10 years of joint Aeronautical

Mobile Airport Communications System (AeroMACS) development led by NASA Glenn. The technology could lead to reductions in air travel delays; increased security; improved safety and fuel efficiency; and more efficient airport traffic management and operations, especially at high-density airports.

AeroMACS is the first of three elements of a proposed communications infrastructure for future aeronautical air-ground

data communications capabilities. The infrastructure will support the FAA's Next Generation (NextGen) Air Transportation System in the United States and Europe's Single European Sky ATM Research (SESAR) program shared visions of global harmonization and interoperability.

The testing included graphical aviation weather information transmitted from NASA's communications, navigation and

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Plum Brook Station Tests Several Balloon Payloads

B-2 Simulates Flight Conditions

The Spacecraft Propulsion Research Facility (B-2) at Plum Brook Station has been busy supporting NASA's high-altitude balloon missions of scientific payloads.

Hal Weaver, B-2 test manager, explained that these missions fly over Antarctica each December for extended durations

of up to 30 days aloft. In the past, balloon payloads conducted test flights in the United States to verify payload performance. However, these flights do not experience the same flight conditions that exist in Antarctica and also pose risk to the payload during descent and recovery.

"The B-2 facility at Plum Brook Station has been identified as a ground alternative to test flights," Weaver said. "B-2 is an ideal location for these ground tests as the facility can accurately simulate the pressure, temperature and solar heating effects of Antarctic flight without the risk inherent in flight and recovery."

Here's a look at the most recent tests:

Cosmic Ray Electron Synchrotron Telescope (CREST) instrument

Last summer, the B-2 simulated the pressure and temperature extremes the payload would encounter during its flight. During ground testing in the

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Pictured left: The CREST test payload—awaiting launch—suspended from a crane and tethered to the high altitude balloon that enabled its flight over Antarctica.

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Center Director Lugo

What a Culture of Systems Engineering Means to Me

Often, I am asked by others to describe what a culture of “systems engineering” means to me. For me, systems engineering is about systems thinking and not about developing a compendium of rules and regulations and creating mountains of paper, all in an effort to comply with NASA Procedural Directives (NPD) 7120 and 7123.

It is an acknowledgement that even the smallest element of a system can have an effect across the breadth of engineering disciplines. For example, materials selections can affect mechanical properties like strength; thermal properties like thermal conductivity; electrical properties like conductivity; and surface properties like roughness. It’s about looking at everything in a system across the spectrum of engineering disciplines; not for the

sake of rules and regulations, but because we want to deliver on our commitments.

Unfortunately, good systems engineering also comes with some “overhead.” That generally means we need to work within a consistent framework, using consistent processes and when necessary, consistent paperwork. I want to emphasize consistency over prescriptive. We need a consistent set of expectations on how we manage projects, not volumes of rules and documents. The NPDs 7120 and 7123 are designed to be “tailored,” and it is not expected that every project will use the guidance in exactly the same way. Small projects or technology projects will require less than bigger and more complex

projects. It is also clear that research projects, projects that are at the lowest Technology Readiness Levels, are not managed with the rigor of flight projects. The key is that we need to tailor our approach and have logic on how we intend to manage the project.

Most importantly, I am looking for alignment regarding expectations. I would like to see at least some rudimentary level of systems engineering across the breadth of work we do, and have a consistent level of engineering rigor that includes embracing safety, quality and reliability engineering.

I believe we spend a lot of energy resisting the implementation of systems engineering. I would prefer we utilize our energy embracing systems engineering so we can improve our delivery of technology to the customers that could benefit from what we have to offer. Most importantly, we would gain clarity, alignment and expend much less energy on a discussion, which adds little to the important work we do.

B-2 Ideal Ground Alternative to Test Flights

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B-2, researchers and technicians from Glenn and Indiana University (and other university partners) encountered electrical problems in the instrument but were able to remedy the problems and continue testing. Consequently, the instrument was successfully launched in Antarctica on Dec. 24, 2011, and completed one circular path around the South Pole while collecting data for about 10 days.

Suborbital Polarimeter for Inflation, Dust and the Epoch of Reionization (SPIDER) balloon payload

In March, this payload underwent two series of tests under simulated high-altitude conditions to verify that the instrument would operate properly during its flight over Antarctica. The instrument will be used to measure temperature variations in the cosmic infrared background radiation field to detect gravity waves and thereby validate current astrophysics theory.

SPIDER is being developed under the Wallops Flight Facility Balloon Program Office.

Super Trans-Iron Galactic Element Recorder (Super-TIGER) balloon payload

Next month, Glenn will determine the proper pressure and temperature limits to simulate flight conditions for TIGER. The B-2 engineers and technicians are currently preparing the facility for integration of the test article. Super-TIGER is under development by Washington University in St. Louis, Caltech, Goddard Space Flight Center and the Jet Propulsion Laboratory. The balloon-borne instrument will test and clarify the emerging model of cosmic ray origins. Its first flight is scheduled to launch from McMurdo Base, Antarctica, in December.

“With two successful balloon payload tests already performed at B-2 within the last year, and one on the horizon, this facility is proving that it can provide



A crane places SPIDER payload into B-2.

ideal flight simulation to increase the chance of mission success,” Weaver affirmed. “Both payloads encountered issues during testing that could have adversely affected the mission, but mission personnel were able to correct the issues prior to flight.”

AeroMACS testing

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surveillance (CNS) technologies testbed at Cleveland (CLE) Hopkins International Airport to an electronic flight bag on the aircraft as it taxied at various speeds on the runway and on operational areas. This enabled AeroMACS testing at high speeds and realistic aircraft installations. United Airlines, Boeing Corporation and ITT Exelis supported the testing activities that involved a Boeing 737 aircraft equipped with AeroMACS receiving equipment, including an antenna designed to operate in the 5091–5150 MHz protected aeronautical spectrum band.

“We are excited about being able to conduct these tests right in our backyard,” said Denise Ponchak, lead of the project and chief of Glenn’s Networks & Architectures Branch. “Working with Cleveland Hopkins, the various airlines and other participants to test AeroMACS will help validate the system’s performance to meet operating standards and recommended practices.”

Ponchak said the results of these tests will also help establish a standard for properly equipped aircraft to receive compatible AeroMACS services at airports in the United States and abroad.

NASA Glenn will continue research and development on a wide variety of mobile and fixed applications for the AeroMACS, which can also benefit future lunar surface communications.

—By S. Jenise Veris



Pictured, left: Boeing's 737 being outfitted with AeroMACS equipment in United's Hangar at CLE Hopkins Airport. Below: A surveillance site equipped with an AeroMACS subscriber station and associated test equipment in the NASA-CLE CNS Testbed.



Photos/NASA

Speakers Bureau Members Bring NASA Close to Home



Photo by Sharon Trsek

What do David Hoffman, chief of the Power Systems Engineering Branch, and Erlene Trsek, an administrative retiree from the Structures and Materials Division, have in common? They inform and inspire others through their involvement in NASA Glenn’s Speakers Bureau.

Last year, Hoffman and Trsek were among a group of 247 employees and retirees who shared NASA’s vision and mission with more than 92,000 people through nearly 300 speaking engagements. Members spoke on topics such as “Living in Space,” “Mission to Mars” and “NASA Careers.” Audiences ranged from attendees of preschool to college classes, libraries and museums, scout troops, and professional, technical, civic and social organizations. Members also participated in conferences, workshops, lectures and local community events in Glenn’s six-state region and beyond.

“As a speaker, I connect with the public, our ultimate stakeholders,” Hoffman explained. “The audiences are always very enthusiastic, inquisitive and appreciative. These experiences reenergize me and remind me why I work for NASA.”

Speakers Bureau members, Trsek (above) and Hoffman (left), sharing the NASA mission.

Coordinator Heidi Moore, PATL/Community and Media Relations Office, stressed that Speakers Bureau members do not have degrees in public speaking and do not know everything about NASA. However, with a little bit of training and support through the Speakers Bureau Office, speakers bring NASA’s mission “down to Earth” in their own personal way.

“Glenn’s Speakers Bureau is one of the most active in the agency, and there is always a need for more speakers to meet the many requests from the public,” said Associate Director of External Programs Greg Johnson. “Encourage civil servants, support service contractors and retirees to join this valuable corps of ambassadors and discover the excitement of sharing our NASA story.”

To learn more about Glenn’s Speakers Bureau and updated procedures that enable speakers to meet the needs of customers who are located outside of our local areas, call Moore at 216–433–2003.

—By Doreen B. Zudell





Students Test Experiments ~

NASA-selected student teams tested their science experiments in the 2.2-Second Drop Tower at NASA Glenn last month during the annual “Dropping In a Microgravity Environment (DIME) Drop Days.” The four winning DIME teams conducted their experiments, reviewed the results with NASA personnel and toured Glenn’s facilities. The teams came from Ohio, New York and Florida. Additionally, 23 teams in grades 5 to 8 participated in the “What If No Gravity? (WING)” competition by building experiments and shipping them to Glenn for testing by NASA, after which the results were returned to the teams for their analysis. Pictured: St. Ursula Academy, Toledo, students Neera Martin (below, left) and Charese Foster (below, right) prepare their team’s experiment for the drop tower.



Photos by Bridget Caswell

New Interactive iPad Exhibit ~

Glenn employees stopped by the Cafeteria the week of April 9-12 to interact with a new iPad kiosk developed by Glenn’s Community Relations team to engage a growing IT-savvy public at NASA outreach events. The kiosk features a variety of NASA applications (apps) available for mobile devices that showcase a wealth of



Photo by S. Jenise Veris

NASA content, including images, videos on-demand, live streaming video from NASA Television, mission information, breaking news and International Space Station tracking. Pictured: right, John Oldham, PATL/Community and Media Relations Office, demonstrates to Robert Reid, Human Capital Development Division, the various NASA apps available for viewing in the kiosk.



Astronaut and Associate Director of External Programs Greg “Box” Johnson is coming to a community near you! You can follow Greg’s outreach efforts online or see him in person! Upcoming stops include: Family Space Day/Night at the National Museum of the U.S. Air Force, May 11-12, and Dayton Air Show, June 6-7. Visit http://www.nasa.gov/centers/glenn/events/wheres_box.html for more information.

Technology Day on the Hill ~

During NASA’s Technology Day on Capitol Hill, March 28, agency personnel demonstrated how investments in space and aeronautics technology help enable agency goals while creating or improving products and services that benefit life here on Earth. This year’s event, “NASA Technology: Imagine. Innovate. Explore.” featured six NASA centers’ technologies. Two Glenn collaborative efforts showcased the significant impact the composite fan case has on aeronautics and how low plasticity burnishing offers a cost effective way to increase safety and add fatigue strength to critical parts. Pictured: NASA Chief Technologist Mason Peck, left, meets Justin Combs, LambdaTechnologies, whose company developed a “Low Plasticity Burning” process with help from NASA Glenn’s SBIR Program.



Photo by Cindy Dreibelbis

Greening Glenn One Event at a Time ~

May events include: Clean the Creek; Adopt-a-Highway; Walk to Wellness, 28-day online program; and the 1.4 mile Group Walk at Lewis Field. A Garlic Pull (invasive species) will be at Plum Brook Station. Staytuned to *Today@ Glenn* for details.



Yuri's Night at Visitor Center ~

The Great Lakes Science Center, home of NASA Glenn’s Visitor Center, hosted Cleveland’s official Yuri’s Night Space Party on April 7 from 8 p.m. to 1 a.m. The event—a global celebration commemorating humanity’s history in space highlighted by Yuri Gagarin, the first human to launch into space—included dancing, live music, refreshments, a space-themed costume contest and a midnight showing of the OMNIMAX movie, “Hubble.” Astronaut and Associate Director of External Programs Greg Johnson participated in the trivia contest, “Are You Smarter Than an Astronaut?”

Glenn and Cleveland Library Kick off Summer Reading Program

Once Again, NASA Glenn is collaborating with the Cleveland Public Library (CPL) to engage, inspire and promote awareness of STEM education and careers among CPL Summer Reading Program participants.

Early next month, Glenn and CPL will host Summer Reading Program kick-off events for neighborhood families at two library branches. During these events, staff from the Community and Media Relations Office and Educational

Programs Office will provide hands-on educational activities and demonstrations; the ever popular “Picture Yourself in Space” photo booth, EVA the inflatable astronaut and other exciting activities. The kick-off events will be held from 6 to 8 p.m. at the Rockport branch on Saturday, June 2, and the Woodland branch on Friday, June 8.

Additionally, throughout the 8-week summer reading program, subject matter experts from Glenn and its Speakers

Bureau will visit local library branches to share information about NASA’s missions and exciting work. The summer program wraps up with a culminating event at the Cleveland Metroparks Zoo on Aug. 4. It will highlight the Mars Science Laboratory “Curiosity” landing planned for Aug. 5.

Federal Women's Awards

Glenn’s Women’s Advisory Group honored Maria Havenhill and Mary Jo Long-Davis with a Federal Women’s Program Award during the 2012 Women’s History Month Observance on March 29.

Non-Supervisory Award: Havenhill, senior systems safety engineer in the Programs and Project Assurance Division, earned this recognition for her support in an agency-wide effort to create a Safety and Mission Assurance Process-Based Mission Assurance Knowledge Management System; and for consistent mentorship/outreach to encourage women entering the field of engineering.

Supervisory Award: Long-Davis, chief of the Inlet & Nozzle Branch, earned this recognition for her efforts as a role model to women and students through exceptional professional achievement; and for continuous leadership the past 19 years organizing NASA Glenn’s Annual Young Astronauts Day, an outreach event designed to inspire students to consider science and engineering fields.



Havenhill



Long-Davis

—By S. Jenise Veris

Featured monologues performed by members of Women in History of Lakewood included, far left: Georgia Swanson as Margaret “Molly” Tobin Brown, Titanic survivor and activist; and Vernice Jackson as Mary Elizabeth Bowser, a former slave and Union Army spy.



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Photos by Marvin Smith

HUBZone Industry Day

Tuesday, June 19, 7:30 a.m. to 1:30 p.m., Ohio Aerospace Institute

Historically Underutilized Business Zones (HUBZones) and other small businesses can meet face-to-face to share their products and services with Glenn’s technical advisors, along with representatives from the Office of the Chief Technologist, the Office of Procurement and other federal agencies, during HUBZone Industry Day. **Registration Deadline: June 8**

Registration Website: <http://nasahubzoneindustryday.eventbrite.com>

NASA Outreach and Education Staffing

Show Your NASA Spirit!

NASA Glenn’s Community Relations team is going places—fairs, festivals, parades and more—and you are invited to join them! As the general public visits NASA exhibits, the most significant part of their experience is typically their personal interaction with NASA staff (employees and contractors). Knowledgeable and courteous personnel are needed to engage the public as they explore NASA exhibit areas at upcoming community events.

Glenn’s Office of the Chief Information Officer recently developed an outreach events database that will help employees learn about upcoming outreach events and allow them to nominate themselves to staff outreach events. Employees can access the database through the existing Event Staffing Opportunities site at <http://outreach.grc.nasa.gov>. The Outreach Events database is also used to receive requests from the public, develop loan agreements, track event status and generate reports for Glenn outreach events.

To learn more about staffing NASA exhibits and see some of the exhibits in action, plan to attend the External Programs Outreach and Education Fair on Monday, May 14 at the Briefing Center in building 8. The fair will run from 10 a.m. to 1 p.m. For questions about staffing or the fair, contact David DeFelice, 3-6186.



Awards, Honors and Promotions

NorTech Honors Glenn's Groundbreaking Innovation

A Glenn-developed process that revolutionizes the growth of silicon carbide wafers for the power industry has received a 2012 NorTech Innovation Award. The Northeast Ohio Technology Coalition (NorTech), in partnership with Crain's Cleveland Business, recognized "A Radically New Crystal Growth Concept, Large Tapered Crystal To Achieve Nearly Perfect Silicon Carbide" team during a reception on March 22.



Glenn's Deputy Director Jim Free (far right) congratulates the honorees and their managers. Left to right: Dr. Larry Matus, Asbwin Shab, Trunek, Powell and Neudeck. Not pictured: Spry and Woodworth.

Team members include Phil Neudeck, David Spry and Andrew Trunek (OAI) from the Sensors and Electronics Branch; J.A. Powell of Sest, Inc.; and Andrew Woodworth, a NASA post doctorate fellow.

Glenn's "New High-Temperature Shape Memory Alloys," technology was a finalist in the competition. Michael Nathal, Darrell Gaydosh (OAI) and Anita Garg (University of Toledo), in the Advanced Metallics Branch, developed the shape memory alloys that can act as lightweight actuators in aerospace, automotive and general household applications.

The NorTech Innovation Awards Program is a premier networking event that honors new leading-edge technologies transforming Northeast Ohio's economy.

Technical Communications Award

The Carolina Chapter of the Society for Technical Communications (STC) recognized the NASA Glenn 2010 Innovator Calendar with a 2010-11 Excellence Award in the category of Promotional Materials. The calendar is a colorful salute to Glenn's most successful technologies and innovators that can be viewed online or as a download at <https://technology.grc.nasa.gov/>. Calendar contributors include Laurie Stauber in Glenn's Innovation Projects Office, and Lee Ann Obringer and Nanette Stangle-Castor of Fuentek, LLC, supporting NASA's Innovative Partnerships Program. STC is an organization dedicated to advancing the arts and sciences of technical communication.



Stauber



Retirements

Michael Wardeiner, Enterprise Applications Office, Office of Chief Information Officer, retired on April 7, 2012, with 32 1/2 years of federal service, including 22 1/2 with NASA.



Wardeiner

Check out NASA Glenn's Exchange Online Gift Shop
www.nasagiftshop.com



In Appreciation

I would like to thank my NASA family for all their support shown to me during my unexpected illness. I am doing well now thanks to all your prayers and well wishes. I will never forget your kindness and love.

—Kelly Heidman



Calendar

ANNUAL WALK: Enjoy the great outdoors and a chance to win a door prize on Wednesday, May 16. Participate in the annual 1.4 mile walk using the Taylor/Walcott Road loop anytime between 10 a.m. and 2 p.m. at Lewis Field. Earn the Golden Shoe Award!

RETIRED WOMEN'S LUNCHEON: The next luncheon will be held Thursday, May 17 at 12 noon at Wild Mango, 362 Great Northern Mall in North Olmsted. Please place your reservation by calling Gerry Ziembra, 330-273-4850.

ASIAN-PACIFIC HERITAGE EVENT: The event will be held on Wednesday, May 30, 10 a.m. to noon in the Administration Building Auditorium. "Striving for Excellence in Leadership, Diversity and Inclusion" is this year's theme with keynote speaker Dr. Hiroyuki Fujita, president and chief executive officer of Quality Electrodynamics. Due to the popularity of this event, priority serving will be given for those attendees who arrived at the beginning of the event. POC: Fran Lawas-Grodek at 3-5052.

FREE FACILITY TOURS: On June 2, step inside the 10-by-10-Foot Abe Silverstein Wind Tunnel and learn how engineers can test airplanes and spacecraft in flight conditions without leaving the ground. On-the-hour tours begin at 10 and 11 a.m., 12 and 1 p.m. Call 216-433-9653 to register.

IFPTE LOCAL 28, LESA MEETING: LESA will hold its next membership meeting on Wednesday, June 13, at noon in the Employee Center's Small Dining Room.

IMPROVE YOUR SPEAKING SKILLS: The Toastmasters International is a non-profit organization with clubs worldwide that help members develop communication and leadership skills in a supportive environment. Glenn's Toastmasters Club meetings are every Thursday at noon in building 54, room 101.



In Memory



Honeyc

Frank S. Honeyc, 73, who retired in 2001 with 12 years of NASA service, died on Jan. 22. Honeyc was a materials research engineer, who joined NASA in 1989 after 4 years of military service and managerial experience in the private sector. Coworkers described Honeyc as creative, mechanically apt, artistic, good cook and "frank" but fair in his opinions and collaborations. Honeyc earned numerous awards during his career, including two Space Act Awards (1994 and 1996); and the NASA Honor Award for Distinguished Publication in 1999, as one of six coauthors of the paper entitled "Surface Segregation in Multicomponent Systems: Modeling of Surface Alloys and Alloy Surfaces," in support of the High-Temperature Engine Materials Program and Physics Process Modeling. Honeyc retired from the Tribology and Surface Science Branch, Structures and Acoustics Division.

William S. Kennelley, 90, who retired from NASA in 1974 with 14 years of NASA service, died Jan. 4. Kennelley was a veteran of the U.S.



Kennelley

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Article Deadlines

News items and brief announcements for publication in the June issue is noon, May 18. Larger articles require at least one month notice.

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<http://aerospacefrontiers.grc.nasa.gov>

Hermes
Award
2010-
2011



Army/Air Force having served during World War II and the Korean conflict. He began his NASA career working at the Plum Brook Station (PBS) in 1961. He served in the PBS Facilities Division as head of the Thermocouple Unit for experimental aviation and later, head of the Research Instrumentation Unit. In 1973, he transferred to Lewis Field's Instrumentation Branch, Fabrication Division, for 2 years before retirement.

Edward M. Krawczonek, Sr., 81, who retired in 1988 with 38 years of federal service, died Jan. 23. Krawczonek was a U.S. Army Veteran, who joined the NACA/NASA workforce as an apprentice in 1949. He became an aerospace mechanic and dedicated member of the Test Installations Division. He largely supported the Materials and Rockets Branch that provided technical support to various research divisions ranging from rocket engine testing to processing submicron powder used for producing new materials. He also helped set up, operate and maintain research equipment for major lab activities, such as converting the environmental chamber in the Rocket Engine Test Facility. He was one of four Krawczonek's working at Lewis in the 1960s. He is survived by his brothers Walter and Eugene, who are NASA retirees.



Krawczonek

Mauri K. "Moe" Raita, 79, who retired in 1981 with 39 years of federal service, died Jan. 12. A veteran of the U.S. Navy, Raita joined the NACA/NASA workforce in 1956. He dedicated his



Raita

entire career as an aerospace mechanic to working in the Test Installations Division's Service Section for the 10- by 10-Foot Abe Silverstein Supersonic Wind Tunnel. He was an award-winning member of the Camera Club. He is survived

by his wife, Diane, a former employee of the Imaging Technology Center.

Dr. Joseph M. Savino, 83, who retired in 1989 with 34 years of NASA service, died Jan. 25. Savino was a respected aerospace research engineer and energy environmentalist, who worked tirelessly to develop and promote NASA's capabilities for the benefit of the nation. He joined the NACA/NASA in 1955 upon graduating Purdue University. During his career, Savino worked in a variety of technical areas as a member of the center's Technology Utilizations Office and Power Technology Division, including fluid mechanics and heat transfer technology, and advanced solar concentrators and terrestrial (nuclear) power systems. Savino chaired a NASA/National Science Foundation feasibility study on wind turbine technology as an alternative power-generating industry that was key to the center leading the U.S. Wind Energy Program from 1973 to 1985 for large horizontal-axis wind turbines, the most popular systems in use today. Savino contributed to more than 60 publications and two patents for which he received numerous awards. After he retired, he supported NASA 7 more years through Cleveland State University.



Dr. Savino

Richard J. Woelfle, 85, who retired in 1987 with 25 years of NASA service, died Dec. 20, 2011. Woelfle was a cost analyst that served in the Launch Vehicles Directorate including the Technical Management Systems Office, Business Management Office and Centaur Project Analysis Office. Woelfle's work focused largely on providing advanced planning, cost analysis and billing justifications of Lewis' reimbursable Atlas-Centaur launches for which he received several Special Achievement Awards. After retiring, Woelfle returned to the center with Analex through 1990. He was a U.S. Navy World War II veteran.



Woelfle

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Chief Technologist Briefed on Local Technology

NASA's new Chief Technologist Mason Peck, Space Technology Program Director Michael Gazarik and staff, received a warm welcome and full itinerary during a 2-day visit to Cleveland last month.

Center Director Ray Lugo presented a center overview to our guests from Headquarters, and the center's Chief Technologist Dr. Howard Ross accompanied them on nine tour stops that highlighted Glenn world-class test facilities and promising technologies. Some early-career hires and Center Innovation Fund (CIF) winners discussed their work and joined Peck for lunch in the Briefing Center Auditorium.

Peck's visit also included a trip to Case Western Reserve University, where he learned about progress on NASA-funded research and met the three Case Western Reserve graduate students, who were selected as members of the inaugural class of NASA Space Technology Research Fellows. —By S. Jenise Veris



1. Center Director Lugo and senior managers meet with Gazarik and Peck (at table) for center overview. 2. Peck learns about Glenn's aerogel research from Dr. MaryAnn Meador. 3. Visitors tour the Cryogenic Propellant Storage and Transfer Lab in the SMiRF. 4. Ralph Jansen gives Peck a flywheel presentation. 5. Dr. Larry Matus leads discussion in Silicon Carbide Electronics Lab. 6. CIF winners and early-career hires display and discuss their work with Peck and other visitors.

