

National Aeronautics and
Space Administration



AeroSpace FRONTIERS

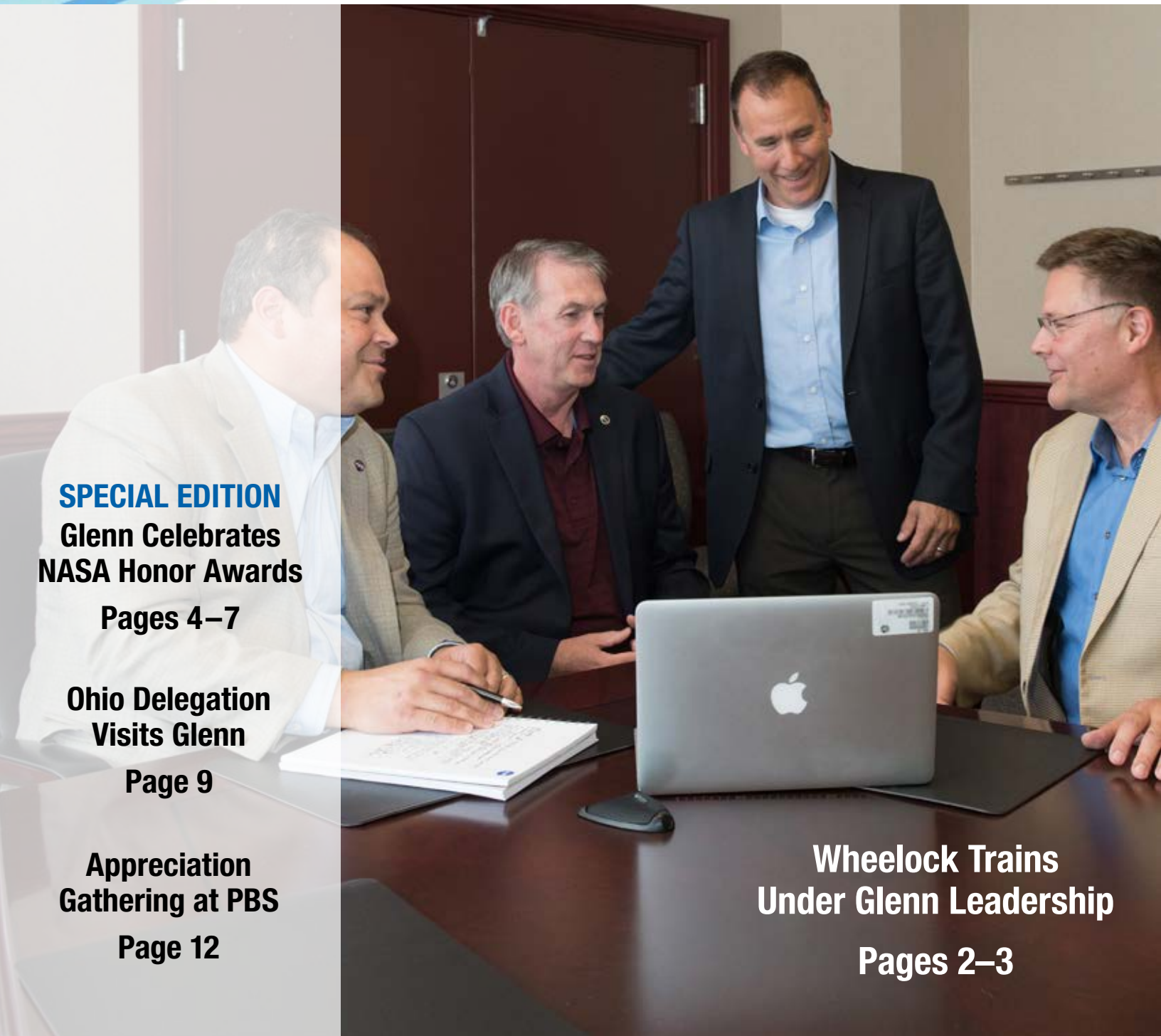
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Orion Test Preparation

Preparation for the Orion Crew and Service Module qualification test at the Plum Brook Station has involved many organizations across the agency in conjunction with Orion Program partners. All attention has been paid to ensure the safe transportation of the hardware from the Kennedy Space Center, and the integrity of the test facility for safe and successful operations. I appreciate the rigor and hard work from the Glenn workforce to prepare for this important test—from a successful Facility Readiness Review to the Safety, Test Readiness and Operations Readiness Reviews.

We are a key contributor to the success of Artemis.

Mahe

AeroSpace Frontiers

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Submit short articles and calendar items to the editor at doreen.b.zudell@nasa.gov.

Editor: **Doreen B. Zudell**, ATS,
216-433-5317

Assistant Editor: **S. Jenise Veris**, ATS

Design: **Jami Drost**, ATS

Managing Editor: **Kelly R. DiFrancesco**

Circulation: **Angela Williams**, ATS,
216-433-8921



Astronaut Doug Wheelock Lands at Glenn

Douglas “Wheels” Wheelock—engineer, astronaut and military test pilot—is broadening his skills once again. In May, Wheelock began a detail in Glenn’s Aeronautics Directorate to understand more about the business side of NASA and to get back into aeronautics, “NASA’s first A.”

*Above: Wheelock supporting the Cleveland Municipal School District Back to School event.
(Photo by NASA; GRC-2019-CN-00049)*

“When I worked in the Astronaut Office, I was more tactical—dealing with challenges as they came along,” Wheelock said. “In this assignment, I’m learning to work more strategically through budgeting, forecasting and allocating resources toward projects and programs.”

For Wheelock, being at Glenn and the surrounding communities is like being back to his hometown in rural upstate New York. He is also back to his first love—aeronautics. He holds a Bachelor of Science degree in Applied Science and Engineering from West Point and a Master of Science degree in Aerospace Engineering from Georgia Tech, with research areas of hypersonic and high-temperature gas dynamics, flight stability and control, and robotics.

Over the past few months, Wheelock has been focused on Urban Air Mobility, Revolutionary Vertical Lift and Low-Boom technologies and their emergence into the global airspace architecture.

In September, Wheelock’s role as Deputy Director of Aeronautics for Strategy expanded into a detail with the Safety and Mission Assurance (S&MA) Directorate. As the S&MA lead at Plum Brook Station, he interacts with staff and helps them manage their safety challenges.

“So often in organizations, the safety office has a reputation of only enforcing compliance,” Wheelock said. “I believe in meeting people where they are, empowering them and assisting them in achieving greatness while doing it safely.”

While Wheelock said he has much to learn about working in a leadership role at a research center, he also has a lot to offer. In August, he addressed employees during a GRC Connections with a discussion on “Chance Favors the Prepared Mind.” In September, he presented Silver Snoopy and Space Flight Awareness awards to employees at Lewis Field and Plum Brook Station.

STEM outreach is also of critical importance to Wheelock. He devotes time at offsite events, sharing personal experiences and encouraging others to believe in their dreams.

“I’ve learned that there is a difference between fear and danger,” he said. “So many of us let fear stand in the way of our dreams. I often tell people that if an ordinary kid like me from a small town in upstate New York can become an astronaut, they can achieve their dreams, too.”

By Doreen B. Zudell



*Wheelock communicating on a ham radio on the International Space Station.
(Photo by NASA; GRC-2019-CN-00037)*



On the Cover: Doug Wheelock, right, discusses strategies with Glenn’s Aeronautics leadership, left to right, former Director Dr. Rubén Del Rosario, Acting Director Greg Follen and Acting Deputy Director Tim McCartney.



Wheelock shows learning can be fun at the Great Lakes Science Center with Camp Curiosity students. (GRC-2019-CN-00031)

2019 NASA Agency Honor Awards

Glenn staff earned awards for their exemplary accomplishments in science, engineering, technology, leadership and administrative service during the 2019 NASA Honor Awards Ceremony on Sept. 4. Dennis Andrucyk, deputy administrator of NASA's Science Mission Directorate, assisted in awarding the medals and certificates.



Eckel



Jacobson



Jankovsky



Matthews



Palivoda



Tomaro



Withrow



Arnold



Gerdes



Hicks



Ison



Krupar



Pietravoia



Rodgers



Scheneman



Taylor



Thompson



Varney



Zernic



HONOR AWARDS

OUTSTANDING LEADERSHIP MEDAL

Andrew J. Eckel

David T. Jacobson

Amy L. Jankovsky

Ronald L. Matthews

Monica M. Palivoda

Christi A. Tomaro

James P. Withrow

EQUAL EMPLOYMENT OPPORTUNITY MEDAL

Mark D. Kankam*

EXCEPTIONAL SERVICE MEDAL

Steven M. Arnold

Robert M. Ellison*

Kathleen M. Gerdes

Michael C. Hicks

Kelly A. Ison

Martin J. Krupar

Ronald A. Mullenax*

Lori O. Pietravoia

Terri D. Rodgers

Julie A. Scheneman

Linda M. Taylor

Orlando Thompson

Cheryl A. Varney

Michael J. Zernic

*Not in attendance

*Cuy**Dearmon**Hanzel**Mulder**Wargo**Kelly**Kocka**Reid**Russell**Sakowski**Sledge**Sorrells**Zudell**Gibson**Umlauf*

EXCEPTIONAL PUBLIC SERVICE MEDAL

Michael D. Cuy

John M. Dearmon

Jeanine P. Hanzel

Dana C. Mulder

Kathleen A. Wargo

EXCEPTIONAL ACHIEVEMENT MEDAL

Michael P. Kelly

Daniel G. Kocka

Concha M. Reid

James J. Russell

Barbara A. Sakowski

Ra-Deon L. Sledge

Mark R. Sorrells

EXCEPTIONAL PUBLIC ACHIEVEMENT MEDAL

Doreen B. Zudell

EXCEPTIONAL ENGINEERING ACHIEVEMENT MEDAL

Marc C. Gibson

EXCEPTIONAL ADMINISTRATIVE ACHIEVEMENT MEDAL

Paula S. Umlauf



Ameen



Arredondo



Bakula



Carrera



Deans



Fausnaugh



Hernandez-Lugo



Houts



Keister



Henke



Phillips



Daniel



Kwiat



Ruggeri



Zegarac



Pérez-Davis



Sivic



Balogas



Capelety



Duckworth Jr.



Fincannon



Saad



EARLY CAREER ACHIEVEMENT MEDAL

Lauren M. Ameen
Maria E. Arredondo
Casey J. Bakula
Flor Carrera
Matthew C. Deans
Andrew S. Fausnaugh
Dionne M. Hernandez-Lugo
Jacquelynne R. Houts
Jason D. Keister
Eli R. McDivitt*

EARLY CAREER PUBLIC ACHIEVEMENT MEDAL

Stephen A. Henke
Kyle G. Phillips

SILVER ACHIEVEMENT MEDAL

Valerie D. Daniel
Bernard G. Gamache*
Wesley L. Johnson*
Maureen T. Kudlac*
Rebecca J. Kwiat
Charles R. Ruggeri
Laura Y. Zegarac

SCIENTIFIC AND PROFESSIONAL (ST) APPOINTMENT

Kenneth Suder*

PRESIDENTIAL RANK

Marla Pérez-Davis
Laurence A. Sivic

40 YEARS OF SERVICE

Thomas W. Balogas
Michael W. Capelety

*Not in attendance

**Shaw****Veris****Johnson****Miller****Sepesi****Soeder****Thompson****Smialek****Brown**

Citations are reproduced from the 2019 Honor Awards Program. Photos by Marvin Smith.

Editor's Note: The Center Awards team photos were not available in time for the October issue. Center Awards will be featured in the November issue.

Joseph Duckworth Jr.
Homer J. Fincannon
Dale A. Hopkins*
George P. Jacynycz*
Lawrence G. Oberle*
George J. Saad
Heidi D. Shaw
Kim A. Veris
Michael C. Woidke*

45 YEARS OF SERVICE

Susan M. Johnson
Donna L. Miller
Ronald W. Sepesi
James F. Soeder
Deborah L. Thompson
Robert A. Ziemke*

50 YEARS OF SERVICE

James L. Smialek

60 YEARS OF SERVICE

Gerald V. Brown

SILVER ACHIEVEMENT GROUP AWARDS

2019 GRC Furlough Response Team
Facility Security Assessment (FSA) Pilot Project Team
GRC Business Unit
Inventors Recognition Team
Multifunctional Structures for High Energy Lightweight Load-Bearing Storage (M-SHELLS) Team
Personal Identity Verification Smartcard (PIV-M) Team
Planetary Exploration Science Technology Office (PESTO)

Structural Heat Intercept Insulation and Vibration Evaluation Rig (SHIIVER) Team
Spanwise Adaptive Wing (SAW) Team

GROUP ACHIEVEMENT AWARDS

12.5-kW Hall Thruster Technology Development Test Team
Center Directives Team
Education Performance and Evaluation Strategy Team
Institutional, Facility, Operational Safety Audit Team
Integrated Cryogenically Cooled Experiment Box Team
Ka-band Ground Station for the Cognitive Algorithm Team
NASA Glenn Export Control Team
NEAT Atmospheric Enclosure Team
Orion Composite Material Coupon Test Team
Orion ESM PQM Test Team
Plum Brook Station (PBS) Spill Response Team
Power and Propulsion Element (PPE) Core Acquisition Team
Super Guppy Transport Analysis Team
Zero Boil-Off Tank (ZBOT) Experiment Team



*Not in attendance



Apollo Program Reflections

From October 2018 through December 2022, NASA will mark the 50th anniversary of the Apollo Program that landed a dozen astronauts on the Moon between July 1969 and December 1972.

Here's a snapshot of the Apollo mission that occurred during the month of October:



Apollo 7

DATE: October 11 to 22, 1968

MISSION: Tested the Command Module

CREW: Schirra, Eisele, Cunningham

To learn more about the Apollo Program, visit https://www.nasa.gov/mission_pages/apollo/index.html.

Staff Shares Aeronautics Advancements With the Public at Air Shows

Glenn staff highlighted NASA's advancements in aeronautics technology at air shows across the country in 2019. Over the summer and fall, employees supported NASA exhibits at the Dayton Air Show, EAA AirVenture (Oshkosh), Cleveland National Air Show and Naval Air Station Oceana Air Show (Virginia Beach).

As part of NASA's EXPLORE Flight campaign, Glenn staff shared the latest aeronautics research information with tens of thousands of show attendees to provide continued awareness of NASA's more than 100 years of pioneering aviation research. Among the featured content was the X-59 Low Boom Flight Demonstrator, the X-57 Maxwell hybrid-electric aircraft, aircraft icing research and NASA Electrified Aircraft Testbed (NEAT).



Photo by Andrew Carlsen
GRC-2019-CN-00045

Carlos Gomez, Office of Community and External Relations, back, highlights features of aircraft under development with attendees at EAA AirVenture.



During the Cleveland National Air Show, Glenn's Roger Tokars, left, talks with Adam Wroblewski about their research on NASA's Twin Otter plane.

Photo by Debbie Lockhart
GRC-2019-CN-00044

Glenn Showcases Its Critical Role in Artemis Program

Former Center Director Dr. Janet Kavandi—with special guests NASA Administrator Jim Bridenstine and Science and Technology Mission Director Jim Reuter—hosted members of the Ohio Congressional Delegation on Aug. 21.



*Marc Gibson provides an overview of Glenn Kilopower system (KRUSTY) inside the Stirling Lab.
(Photos by Bridget Caswell; GRC-2019-C-07396)*

During the visit, Sen. Rob Portman and Rep. Marcy Kaptur, along with staff from Sen. Sherrod Brown and Reps. Anthony Gonzalez, Jim Jordan and Kaptur's offices, learned about NASA's plans to go forward to the Moon and on to Mars. Along with the overall agency perspective, the event educated guests and representatives from 10 media outlets on Glenn's critical role in NASA's Artemis Program and advancing aviation technologies.

A tour of the Electric Propulsion and Power Laboratory at Lewis Field featured presentations on solar electric propulsion and sustainable lunar power (e.g., Kilopower). Visitors got an up-close look at work underway to develop and test the power and propulsion element for Gateway, NASA's home base for astronaut expeditions to the Moon's surface and future human missions to Mars.

"When we go to the Moon, and when we go on to Mars, it's going to be about the capabilities brought to bear by the workforce right here in Northern Ohio at the Glenn Research Center and its Plum Brook Station," Bridenstine stated during the media briefing.

Bridenstine also noted the White House has proposed a \$1.6 billion increase to the agency budget for developing a landing system that would get astronauts to the Moon's surface. The increase would potentially bring over 40 full-time civil servant jobs to Glenn associated with that landing system.

Following the media briefing, participants toured the Stirling Research Lab. There, NASA is exploring Kilopower Reactor Using Stirling Technology (KRUSTY) as a surface power system to enable a sustained human presence on the Moon, Mars and other planets.

The afternoon visit to Plum Brook Station (PBS) included tours of NASA's two space simulation test facilities—the In-Space Propulsion Facility and the Space Environments Complex—to show preparation for testing Orion, the spacecraft for Artemis I. A tour of the NASA Electric Aircraft Testbed revealed Glenn capabilities for testing hybrid-electric propulsion technologies to power future aircraft.

Following the PBS tour and a second media briefing, the Administrator, Dr. Kavandi, Sen. Portman and Rep. Kaptur participated in a business roundtable with members of the Greater Cleveland and Sandusky business communities. This event showcased the Artemis Program and stressed benefits to the region and national economy. The members also learned that 124 Ohio suppliers will participate in the Artemis Program.

By S. Jenise Veris



Pictured, left to right, Portman, Kaptur, Bridenstine and Kavandi, on a tour of the PBS Space Environment Complex and the Orion heat flux system for future testing. (GRC-2019-C-07485)

RETIREMENTS

Stephanie R. Ferguson, Audits and Assessments Office, NASA Safety Center, retired Aug. 31, 2019, with 18 years of service.

Janet B. Hurst, Materials Chemistry and Physics Branch, Materials and Structures Division, retired Aug. 30, 2019, with 36 years of service.

Gary D. Roberts, Ceramic and Polymer Composites Branch, Materials and Structures Division, retired Aug. 31, 2019, with 35 years of service.

Dale Stalnaker, Chemical and Thermal Propulsion Branch, Propulsion Division, retired Aug. 2, 2019, with 42 years of service.



Ferguson



Hurst



Roberts



Stalnaker

Retiring Soon?

Share your retirement in AeroSpace Frontiers. Fill out the GRC341 form and send it to Doreen.B.Zudell@nasa.gov.

PROMOTIONS

Dr. Cheryl Bowman has been selected deputy chief of the High Temperature and Smart Alloys Branch in the Materials and Structures Division. Bowman previously served as a senior researcher in the division specializing in metallic materials.

MORE THAN A MEMORY



Dr. Kelley



Linscott



Namkoong



Schroeder

Dr. Lawrence P. Kelley, 104, a 1980 retiree with 30 years of service, died Aug. 3. Kelley was a U.S. Army Air Corps veteran of World War II. He was a lawyer and retired as head of the Small Business Office, where he negotiated government contracts for minority and small businesses. Kelley earned a Federal Executive Board (FEB) Wings of Excellence Award for his leadership and achievements as a charter member of the FEB Minority Business Opportunity Committee, and chairman of the Ohio-Kentucky Small Business and Economic Utilization Council. He was the center's oldest known retiree.

Bradford S. Linscott, 84, a 1992 retiree with 30 years of service, died June 30. Linscott was deputy chief of the Flight Structures Branch overseeing the design of the photovoltaic electric power systems and backup solar dynamic electric power system for the International Space Station. He also supported design, fabrication and testing of horizontal axis research wind turbines, the first to be installed at a public utility in 1977. Linscott's daughter, Beth Polansky, is chief of Glenn's Program Resources Branch.

David Namkoong, 92, a 1994 retiree with 33 years of service, died May 15. Namkoong was an electrical engineer in the Solar Dynamics and Thermal Systems Branch. He developed both the Organic Rankine and Closed Brayton Cycle heat exchangers, condensers and fluid management devices for the solar dynamic power module proposed for the space station. Namkoong supported Glenn's Asian Advisory Council and the Multicultural Planning Team. He was a charter member and officer of the Lewis Engineers and Scientists Association.

Robert J. Schroeder, 97, a 1985 retiree with 24 years of service, died June 11. Schroeder was a U.S. Marine veteran of World War II, who served as chief of the Engine Systems Division in the Aeronautics Directorate prior to retiring. He oversaw turbine and intermittent combustion engine programs utilizing the altitude engine chambers (currently the PSL-3 and 4). He advocated and managed projects related to supersonic cruise, general aviation and VTOL vehicles. Schroeder's grandson, Tyson Stahnke, is the EUSO service delivery lead at Glenn.



Clayman

PROMOTIONS

Lauren Clayman has been selected Chief Safety and Mission Assurance Officer (CSO) for the Radioisotope Power Systems Program, within the Program and Project Assurance Division. She previously served as the CSO for the Space Communications and Spectrum Management Office.

Upcoming Center Events



2019 Combined Federal Campaign

Now Through Jan. 12, 2020

Kickoff Event Wednesday, Oct. 23

10 to 11 a.m. • Briefing Center Auditorium, Bldg. 8



To donate, visit
ohiocfc.org

GSEL MOBILE LIBRARIAN

The Glenn Science and Engineering Library (GSEL) Mobile Librarian will be visiting building 5 through Oct. 17, and building 6 from Oct. 22 to 31. A Glenn reference librarian will be ready to assist employees with subject searches, finding specific books and articles and other information needs on the spot.

POC: Robin Pertz, 3-5776

OPEN SEASON FAIR

National Active and Retired Federal Employees (NARFE) Chapter 470's Open Season Health Fair, Friday, Nov. 1, from 1 to 3 p.m., Fairview Park Gemini Center. Representatives will discuss Federal Employees Health Benefits (FEHB) health, dental and vision plans, and Medicare, fraud and legal issues facing seniors. Open to current and retired federal employees.

OUTDOOR SIREN TESTING

The Emergency Management Office staff will conduct an audible siren test on the "all clear" tone on Saturday, Nov. 2, at Lewis Field. A mass notification "voice" test will be conducted at building 87 at Lewis Field on Wednesday, Nov. 6.

POC: Allen Turner, 3-6826

IFPTE LOCAL 28, LESA MEETING

LESA will hold its next membership meeting, Wednesday, Nov. 13, noon, in the Glenn Employee Center's Small Dining Room.

RETIRED WOMEN'S LUNCHEON

The next luncheon will be on Thursday, Nov. 21, at 1 p.m. at Burntwood Tavern, 5600 Great Northern Blvd., North Olmsted. Please reserve your place by calling Gerry Ziemba at 330-273-4850 or emailing gto64gerry@yahoo.com.

Deadline for next calendar section is **Oct. 16, noon**. News and feature stories require additional time.

NASA Glenn Employees: For more calendar information, visit <https://wing.grc.nasa.gov/event-calendar/>.

**National Aeronautics and
Space Administration**

John H. Glenn Research Center

Lewis Field

21000 Brookpark Road
Cleveland, Ohio 44135

Plum Brook Station

3597 E. Scheid Road
Sandusky, Ohio 44870

www.nasa.gov

Read AeroSpace Frontiers online at <http://www.nasa.gov/centers/glenn/news/AF/index.html>.



Food and Fellowship Abound at PBS Luncheon



GRC-2019-CN-00039

Photos by Doreen B. Zudell



GRC-2019-CN-00038

Employees from across Plum Brook Station (PBS) gathered in the Engineering Building for the annual appreciation luncheon on Sept. 5. Dave Stringer, PBS director, and Tom Mears, Test Facilities Operations, Maintenance, and Engineering (TFOME) PBS site manager, welcomed employees and thanked them for their hard work. A special guest, astronaut Doug Wheelock, shared some lessons learned as an astronaut and announced his detail as Safety and Mission Assurance lead at PBS. Wheelock also participated in an awards ceremony that will be featured in our November issue. The event culminated with a delicious meal prepared by a TFOME team.

Emergency and Inclement Weather Lines

Lewis Field: 216-433-9328 (WEAT)
Plum Brook Station: 419-621-3333

Connect With Glenn

