



AeroSpace FRONTIERS

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ACTING DIRECTOR'S
SAFETY CORNER

Human Fatigue Awareness

As we enter the new fiscal year, Glenn continues to play a leading role in NASA's exploration, science and aeronautics missions. Our wind tunnels and vacuum chambers at Lewis Field are in full operation for supersonic, hypersonic and electric propulsion demonstrations, supporting key space and aeronautical milestones. At Plum Brook Station, we are concluding the first phase of a Space Technology cryogenic test and transitioning to the Orion Crew and Service Module as part of the agency's Artemis Program. Please be aware of the potential for human fatigue for yourself and the people around you and take the time needed to minimize any negative impact.

The safety and health of our people are vital to mission success!

Mark

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: **Rhys Sampson**, ATS

Managing Editor: **Kelly R. DiFrancesco**

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

AN EVENING WITH THE

Stars **APOLLO 50** NEXT GIANT LEAP

An Evening With the Stars: Powering the Future of Flight and Space Exploration



GRC-2019-C-09322 Photos by Jordan Salkin

McGuire discusses one of Glenn's major contributions—the power and propulsion element, the first element of NASA's Gateway.



GRC-2019-C-09336

Linne explains how NASA is working to develop hardware and systems to extract and cultivate "local" resources on the Moon.



GRC-2019-C-09308

Avanesian talks about tremendous advancements not only in aerospace, but in the products that are used every day.

NASA Glenn's 2019 "An Evening with the Stars" program, held against the backdrop of the Cleveland Museum of Natural History on Sept. 10, celebrated history and history in the making.

For the sixth year in a row, the Ohio Aerospace Institute (OAI) coordinated sponsorship for the event that attracted guests from more than 25 companies, universities and organizations. The program recognized the 50th anniversary of Apollo 11 and humankind's first steps on the Moon, and looked ahead to the next era of humankind through the Artemis program.

OAI's Vice President John Cotman welcomed guests. Glenn's former Center Director Dr. Janet Kavandi and NASA Deputy Associate Administrator Melanie Saunders then shared their excitement about Artemis and Glenn's role in that collective effort.

Their comments acknowledged that Artemis will reaffirm the United States as the global leader in space exploration, while serving as a proving ground for the



GRC-2019-C-09480

Photo by Marvin Smith

Saunders shares information about Artemis and Glenn's role in this exciting program.

technologies NASA needs to get to Mars. It will bring new science and technology, open future business markets, increase job growth and create collaborative opportunities with international partners. It will also inspire the next generation—the Artemis Generation—to pursue STEM careers and reach for the stars, much like Apollo did for many.

“Returning to the Moon isn’t going to be easy, and that is why NASA needs Glenn and Ohio,” Kavandi said. “None of this would be possible without the expertise and contributions provided by NASA Glenn and the hundreds of Ohio-based aerospace companies.”

Kavandi then introduced three of Glenn’s stars—Melissa McGuire, Mission Architecture and Analysis Branch; Diane Linne, Chemical and Thermal Propulsion Systems Branch; and David Avanesian, Diagnostics and Electronics Branch. They highlighted Glenn technologies that will support Artemis and future commercial aviation.

McGuire discussed how one of Glenn’s major contributions—the power and

propulsion element, the first element of NASA’s Gateway, located in an orbit called a Near Rectilinear Halo Orbit—will help provide explorers with more access to more parts of the Moon than ever before.

Linne spoke about how NASA is working to develop hardware and systems to extract and cultivate “local” resources, which can then be used to generate products like breathable oxygen, drinking water and even rocket propellant.

Avanesian explained how NASA is ushering in a new aviation renaissance—one where we will be flying in hybrid and all-electric aircraft—and how that work is leading to tremendous advancements not only in aerospace, but in the products that are used every day.

Kavandi closed the program by saying, “I hope that you’ll go home and tell your friends and family that NASA is ready to return to the Moon with Artemis; that we’re ready to change the way we fly here on Earth; and that Ohio is making each of those exciting things happen.”

By Doreen B. Zudell



GRC-2019-C-09297

Photo by Jordan Salkin

Representatives from companies, universities and organizations settle in to learn about Glenn's exciting work in space and aeronautics.

Street Fair Focuses on Sustainability

Greening NASA Glenn One Event at a Time

Glenn's Environmental Management Office hosted its annual Sustainability Street Fair on Sept. 26 to reinforce the value and accessibility of sustainable products and practices. A number of external businesses and internal organizations represented local and regional environmental-based products and services. In addition to promoting waste reduction opportunities and energy-saving practices, the event also provided awareness on local, sustainable products.



Photos by Jef Janis
GRC-2019-09784

On the Cover:

Glenn's Vehicle Fleet Operations Officer Andrew Deenanauth, left, and Evan Douglas, Rad Power Bikes, discuss the features of the RadCity Step-Thru electric commuter bike. Glenn purchased two of these bikes for a pilot program to see how they work and to develop safety guidelines before possibly procuring more for the center.

sus·tain·a·bil·i·ty

Glenn Says Farewell to Director Dr. Janet Kavandi



GRC-2019-C-08468

Photos by Marvin Smith

Jurczyk, right, presents Dr. Kavandi with the NASA Distinguished Service Medal and framed certificate.



GRC-2019-C-08494

Dr. Kavandi addresses well-wishing co-workers and colleagues.

Veteran astronaut and Center Director Dr. Janet Kavandi retired on Sept. 30, following 25 years of NASA service. Kavandi was appointed center director, March 2016, following previous service as deputy center director. Employees, leadership and guests gathered, Sept. 25, at Lewis Field to thank Kavandi for her contributions and wish her well in future endeavors.

“Janet is a very intelligent and thoughtful person who cares deeply about the NASA mission,” said special guest NASA Associate Administrator Stephen Jurczyk. “Her philosophy has been ‘take care of the people and they will take care of the mission.’”

In addition to receiving grateful accolades and farewell mementos from Glenn and other NASA Center leaders, Kavandi accepted the NASA Distinguished Service Medal from Jurczyk, and the Glenn Facilities Seal from Deputy Director Dr. Marla Pérez-Davis.

Pérez-Davis thanked Kavandi for her leadership and many contributions to the center. She pointed to Glenn’s 7 Expected Behaviors: Heroics—Helping All To Succeed, Excellence, Respect, Openness, Integrity, Cooperation and Safety—among Kavandi’s legacies and compass to guide us.

In her final remarks, Kavandi reminisced about gazing up at the stars while growing up on a farm in Missouri, and dreaming of one day working for NASA. She thanked Glenn staff for their support of her as a person and as the center director.

“You gave me every opportunity to succeed, and you taught me a lot,” she said. “I’m so proud of everything that you do.”

By Doreen B. Zudell

Dr. Pérez-Davis Named Acting Center Director

NASA Administrator Jim Bridenstine has named Dr. Marla Pérez-Davis as the acting center director for NASA Glenn, following the retirement of Dr. Janet Kavandi on Sept. 30.

Since June 2016, Pérez-Davis has served as the deputy director of Glenn, sharing responsibility with the center director for planning, organizing and managing the agency-level programs and projects assigned to the center.



Dr. Pérez-Davis

2019 CENTER AWARDS

STEVEN V. SZABO ENGINEERING EXCELLENCE AWARD

The Revolutionary Vertical Lift Team

Jeffrey T. Csank
Susan M. Johnson
Thomas M. Lavelle
David J. Sadey
Linda M. Taylor

CRAFTSMANSHIP AWARDS

Assembly and Build-Up Technologies

Flow Boiling and Condensation Experiment (FBCE) Mechanical Technicians

Christopher J. DeTardo
Dan J. Gedeon

Manufacturing Technologies

Flow Boiling Module Test Module Assembly and Condensation Module-Heat Transfer Test Module Assembly Team

Matthew J. Conley
Derick L. Espenschied
Roger Luptak
George J. Saad
Henry L. Scott
Patrick Spanos
Jonathan J. Veneziano

Distinguished Publication Award

Jeffrey I. Eldridge

Diversity Leadership Award – Individual

Lisa D. Koch

Safety Award

Bradley A. Lerch



GRC-2019-C-09832-300

Photo by Bridget Caswell

Steven V. Szabo Engineering Excellence Award: The Revolutionary Vertical Lift Team

Assembly and Build-Up Technologies: Flow Boiling and Condensation Experiment (FBCE) Mechanical Technicians



GRC-2019-C-09814

Photo by Jef Janis



GRC-2019-C-09819

Photo by Jef Janis

Manufacturing Technologies: Flow Boiling Module Test Module Assembly and Condensation Module-Heat Transfer Test Module Assembly Team



Eldridge



Koch



Lerch

Awarded during the 2019 NASA Honor and Center Awards on Sept. 4.



GRC-2019-C-09831

Photo by Bridget Caswell

Team Safety Award: Plum Brook Station Space Environments Complex Team



Hoffman



Ault



Wilson



Alcorso



Gerber



Lapka



Walburn

TEAM SAFETY AWARD

Plum Brook Station Space Environments Complex Team

Robin L. Brown
Mark D. Cmar
Christopher S. Czernec
Deanna M. Dingess
Richard K. Evans
Michael W. Henry
Aron D. Hozman
Robert R. Kowalski
Scott D. Mahnke
Thomas C. Mears
Cynthia S. Parker
Joshua A. Pawlak
Erin M. Reed
Christopher J. Ryan
Stephen M. Sinclair
Lynn N. Smith
Richard N. Sorge
Henry J. Speier
Stephen A. West
Brittany Wilkewitz
Kevin R. Winke
John C. Zang

Supervisor Award

David J. Hoffman

Support Assistant/Clerical Award (Civil Servant)

Karen A. Ault
Catherine Wilson

Support Assistant/Clerical Award (Contractor)

Stacy Alcorso
Christina E. Gerber
Lisa M. Lapka
Ruth Ann Parise*
Holly N. Walburn

GRC Small Business Industry Award (SBIA) Winner Small Business Prime Contractor of the Year

Vantage Partners

*Not in attendance

Employees Help Families in Need



As part of the 2019 Feds Feed Family Campaign, 28 volunteers from seven Glenn directorates gathered at the Greater Cleveland Food Bank on Saturday, Aug. 10. Civil servants, contractors, friends and family collectively donated over 112 hours to sort and repack frozen meats to be distributed to local food pantries, soup kitchens and shelters. Volunteers packed, stacked and loaded 25-pound boxes of food onto pallets, which totaled over 13,917 pounds. The Greater Cleveland Food Bank is the largest hunger relief organization in Northeast Ohio, having provided more than 57 million meals in 2018 to hungry people in six counties.

NEWS AND EVENTS

Glenn Welcomes Congressional Members on Recess

U.S. Sen. Sherrod Brown and Rep. Troy Balderson were among several members of the Ohio Congressional Delegation who visited NASA Glenn during their summer recess. August 26 was Balderson's first visit to Glenn since joining the House Science, Space and Technology Committee. He and several members of his staff toured selected sites at Plum Brook Station and Lewis Field to learn more about Glenn's research and technology conducted in support of agency missions. Brown's August 28 visit focused on Glenn's contributions to the Artemis program and interacting with employees that will be supporting it.



Photos by Marvin Smith
GRC-2019-C-07549

Rep. Balderson, far right, along with members of his staff, receive a demonstration of the Shape Memory Alloy materials research performed by Glenn developer Othmane Benafan.



GRC-2019-C-07587

Glenn leadership facilitated a meet-and-greet session with Sen. Brown, third from left (pointing) and early career employees from across the center.



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 November:



Apollo 12

DATE: November 14 to 24, 1969

MISSION: Landed on the Moon

CREW: Conrad, Gordon, Bean

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

Two Senior Leaders Retire



Dr. Del Rosario

Dr. Rubén Del Rosario, director of Glenn's Aeronautics, retired Sept. 30, 2019, with 29 years of service. Over the years, Del Rosario served in several high-level assignments, including Glenn deputy chief information officer, assistant to the Office of the Center Director, and assistant deputy associate administrator for Programs for the Science Mission Directorate at NASA Headquarters. In these roles, he provided oversight to key projects and strategic initiatives for NASA Glenn and the Science Mission Directorate. Del Rosario also was active in the Hispanic professional community, mentoring and recruiting young engineers.



Griebel

Therese Griebel, deputy associate administrator for Programs, Space Technology Mission Directorate at NASA Headquarters, retired Sept. 27, 2019, with 28 years of service. Griebel worked at NASA Glenn for 26 years prior to taking on her most recent assignment at Headquarters. Prior to this position, she served as Glenn's Associate Director for Strategy and she reported directly to Glenn's Center Director while leading all aspects of strategy development and planning at the center.

Employees Honored for Outstanding Achievements

NASA Astronaut and Glenn's Deputy Director of Aeronautics for Strategy Doug Wheelock recently presented the prestigious Silver Snoopy Award to 13 employees.

On Sept. 5, Plum Brook Station (PBS) Director, Dave Stringer and TFOME/PBS Site Manager, Tom Mears welcomed employees to the annual PBS Appreciation Day Luncheon. There, astronaut Wheelock presented two employees with awards, while co-workers and families looked on. On Sept. 26, Associate Center Director Larry Sivic welcomed families and co-workers of 11 Glenn employees who gathered at a ceremony at Lewis Field. Wheelock gave the keynote address and presented the prestigious award.

The Silver Snoopy is presented each year to less than 1 percent of the NASA workforce. The award is reserved for members of the Astronaut Corps to express appreciation to employees who have significantly contributed to the human space flight program to ensure flight safety and mission success.

The Glenn 2019 Silver Snoopy Award honorees include:

Mark D. Cmar, Plum Brook Station test facilities

Ian J. Dux, Mission Architecture and Analysis Branch

Heather K. Hickman, NASA Engineering and Safety Center

Bradley T. Humphreys, ZINT/ISS and Human Health Office

Dr. Mohammad Kassemi, CWRU/Low-Gravity Exploration Technology Branch

Steven M. Korn, Power Architecture and Analysis Branch

Dr. Linda J. Moore, Avionics Branch

John C. Morrison, ZINT/Rotating and Drive Systems Branch

Dr. Enrique Rame, USRA/Low-Gravity Exploration Technology Branch

Mathew M. Schoewe, Research and Space Operations Branch

Nicole Smith, Exploration Systems Office

Henry J. Speier, Plum Brook Station test facilities

Donald E. Van Drei, Flight Software Branch



Front, left to right: Hickman, Morrison, Dr. Moore, Smith and Schoewe; Back: Associate Center Director Larry Sivic, Rame, Van Drei, Korn, Humphreys, Dux and Wheelock. (GRC-2019-C-08602)



Photos by Marvin Smith

Wheelock presents a Silver Snoopy to Speier, left, and Cmar, right. (GRC-2019-C-07683)

NTA's 2019 Nsoroma Award Honorees

Glenn's **Dr. Robert Okojie** was the keynote speaker and one of four Glenn employees honored at the Cleveland Chapter National Technical Association's (NTA) annual Nsoroma Awards and Technical Symposium held at the Ohio Aerospace Institute in August.



Okojie, accepts his award presented by NTA officers Charles Doxley, vice-president, left, and Bilal Bomani, president, right. (GRC-2019-CN-00084)

The Nsoroma Awards honor underrepresented women and men of exemplary character with outstanding scientific, technological, educational or business accomplishments and other personal attributes.

Okojie, Smart Sensing and Electronics Systems Branch, won for Lifetime Achievement; **Dr. Tiffany Williams**, Materials Chemistry and Physics Branch, for Science; **Terri Rodgers**, chief, Management Integration Office, for Technology; and **Gwendolyn Flowers**, chief, Institutional Resources Branch, for Business.



Dr. Williams



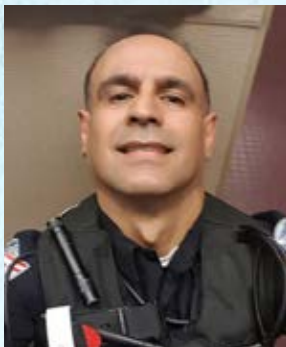
Rodgers



Flowers

MORE THAN A MEMORY

Santiago: A Passionate Member of the Lewis Field Security Force



Santiago

Luis Santiago, 52, a security officer with the Golden Svcs, LLC contract, supporting NASA Glenn's Office of Protective Services at Lewis Field, died Sept. 3. Throughout his 14-year career, Santiago could be counted on to perform a variety of security roles without hesitation.

"Luis was a true inspiration and role model. He will truly be missed, and his memory will stay in our hearts forever," said Adam D. Cingle, fellow officer and friend.



Farrell

Charles A. Farrell Jr., 74, a 2008 NASA retiree with 35 years of federal service, died Sept. 14. A U.S. Air Force veteran, Farrell joined NASA in 1973 as an aeronautical engineer in the Computational Fluid Mechanics Branch and Scientific Applications Programming Section. He switched to the new User Support Office in 1983 and later earned a Group Achievement Award with the Technology Demonstration Center Start-Up and Operations Team. He graduated from the first systems engineering class (2006) under the Space Mission Excellence Program.

RETIREMENTS

Traci Bassi, Strategic Solutions Division, Office of Glenn Human Resources, retired July 3, 2019, with 38 years of service.

Steve Bauman, Mechanisms and Tribology Branch, Materials and Structures Division, retired Sept. 28, 2019, with 32 years of service.



Bassi



Bauman

Retiring Soon?

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

Upcoming Center Events

IT PURCHASING WEEK

Come join Glenn's IT Purchasing team at IT Purchasing Week to learn about IT Supply Chain Risk Management (SCRM); purchasing IT on NEST and SEWP; 1707 IT Purchase Requests; Purchasing IT with Purchase Cards; IPv6 compliance; Mobility Requests; Print Waivers; ELMT, AESOP, and Section 508.

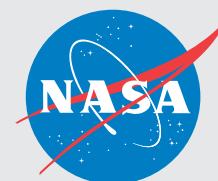
- IT Purchasing Town Hall, Tuesday, Nov. 12, 10 a.m., bldg. 8 Briefing Center
- Walk-Up Support, Wednesday, Nov. 13, 11:30 a.m. to 1:30 p.m., Cafeteria
- In-Person Training Sessions, Thursday, Nov. 14, 1 to 2 p.m. and 3 to 4 p.m., bldg. 142, room 160C

Do You Know This Person?



The Logistics and Technical Information Division needs your help in ensuring historical images are accurately archived. Over the course of almost 80 years, photographers have captured nearly 500,000 images—many with people who were not identified. In November, the Imaging Technology Center will post photos three times a week on *Today@Glenn* that need identification—people, places and research. Just reply to the linked address and tell them, “Hey, I know this person!”

Explore Talent Marketplace— NASA's new platform for civil servants to post and find noncompetitive opportunities from across the agency is now available. Managers can create flexible, targeted opportunities based on skills, grade, onsite or remote location and more. Civil service employees can apply for opportunities from across the agency, contribute their unique talents and better direct their career growth. Sign into Talent Marketplace at <https://talent.nasa.gov/> to learn more!



GSEL MOBILE LIBRARIAN

The Glenn Science and Engineering Library (GSEL) Mobile Librarian will be visiting building 15 through Nov. 14, 11 a.m. to 1 p.m. and building 23 from Dec. 3 to 12, 1 to 3 p.m. 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

NASA 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 space by calling Gerry Ziemba at 330-273-4850 or gto64gerry@yahoo.com.

OUTDOOR SIREN TESTING

The Emergency Management Office staff will conduct a mass notification “voice” test at buildings 100 and 302 at Lewis Field on Wednesday, Dec. 4. An audible siren test will be conducted on the “emergency condition” tone on Saturday, Dec. 7.

POC: Allen Turner, 3-6826

IFPTE LOCAL 28, LESA MEETING

LESA will hold its next membership meeting, Wednesday, Dec. 11, noon, in the Glenn Employee Center's Small Dining Room.

Deadline for next calendar section is **Nov. 18, noon**. News and feature stories require additional time.



Data Collection System Upgrade Underway

Members of Glenn's Data and Systems Branch in the Testing Division have developed a new and improved data acquisition system. The system, COBRA, which stands for Collect, Observe, Broadcast, Report and Analyze, is being

deployed as the legacy Escort systems are being phased out. The Escort Data Acquisition System—a combination of hardware and software that collects and analyzes data—has been used in Glenn's test facilities since the late 1970s. While the Escort system has been the workhorse for the facilities, the hardware and operating system platforms that it runs on are obsolete and no longer supported.

"COBRA is a vast improvement over Escort," said Doug Cooper, COBRA lead. "First and foremost, it provides a modern graphical user interface for interacting with the system. COBRA has many state-of-the-art features that provide efficiency and accuracy, including the fact that individual subsystems can be upgraded or changed without having to redesign the entire system."

The COBRA system was first deployed to the Icing Research Tunnel in 2016 and has been used in over 65 test entries. Since then, Data and Systems Branch members have continued to update and improve the system. To date, eight COBRA systems have been deployed throughout Lewis Field and Plum Brook Station. While Escort systems are expected to be phased out by May 2023, many of its features will live on in COBRA, as the features in Escort formed the basis of the initial requirements for COBRA.

"The development of the COBRA system has not been without issues," Cooper said. "But our talented and dedicated team has worked through the challenges and refined our internal processes to make the development and deployment of the systems more manageable and efficient."

By Kin Wong



Cooper, standing, with original developers of COBRA, seated, left to right: Kenneth Novick, Stephen Henke and Joshua Allen.

Emergency and Inclement Weather Lines

Lewis Field: 216-433-9328 (WEAT)

Plum Brook Station: 419-621-3333

Connect With Glenn

