



# AeroSpace FRONTIERS

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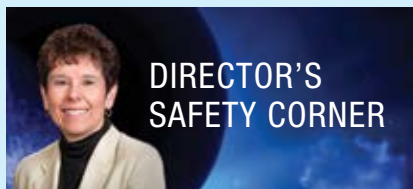
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## Reach Out to One Another

As we get ready to start the new year, let us be mindful of all our accomplishments during what has been a challenging year. I am proud of your compassion to one another, fortitude, and dedication to carry on with our NASA mission. Our Employee Assistance Program (EAP) counselor reminded us at a recent Virtual Town Hall that this time of year can be difficult for many people even without the pandemic. So, I encourage you to reach out and connect with your family, friends, and co-workers—even if it is virtually. Taking care of our mental health is as important as our physical health. Don't hesitate to contact EAP for support, if needed (<https://www.grc.nasa.gov/smad/employee-assistance/>).

Wishing you and yours a joyful and safe New Year!

### *AeroSpace Frontiers*

is an official publication of Glenn Research Center, National Aeronautics and Space Administration. It is published the second Friday of each month by the Office of Communications in the interest of the Glenn workforce, retirees, government officials, business leaders, and the general public.

Submit short articles and calendar items to the editor at [doreen.b.zudell@nasa.gov](mailto:doreen.b.zudell@nasa.gov).

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*Front of HEROICS Coin.*

In 2016, Glenn's Senior Management Team developed a set of Glenn core values. These became known as Glenn's 7 Expected Behaviors or HEROICS: (1) Helping All To Succeed, (2) Excellence, (3) Respect, (4) Openness, (5) Integrity, (6) Cooperation, and (7) Safety. In 2019, senior leadership commissioned a HEROICS Coin to recognize employees who embody the spirit of the seven HEROICS tenets.

Center Director Dr. Marla Pérez-Davis is proud to recognize the employees who received Glenn's HEROICS Coins in 2020:

**Peter J. Bonacuse**, High Temperature and Smart Alloys Branch, for your support during the pandemic maintaining critical infrastructure and capabilities across the Materials and Structures Division and establishing innovative approaches for improving remote access to data and equipment to enhance telework for a number of researchers.

**Steven L. Fedor**, Office of Technology Incubation and Innovation, for your support to the N-95 sterilization research project, for contributing to make it happen, and for going beyond expectations when stepping up to cover technology export reviews during the COVID-19 pandemic.

**Ryan P. Gilligan**, Office of the Director (detail), for your support to the Return to On-Site Work (RTOW) Priority Research efforts and contributions to formulating, planning, and coordinating the establishment of the RTOW Priority Research process and review for on-site work.

# Coins Awarded for Glenn HEROICS

**Robyn N. Gordon**, Center Operations Directorate, for your leadership and support to the RTOW efforts and contributions to Glenn during these trying times as we safely execute the plan for RTOW in support of NASA missions.

**Nancy R. Hall**, ISS and Human Health Office, for your leadership and support to the Flow Boiling and Condensation Experiment (FBCE) team and for demonstrating that mission success starts with the safety and health of your team members by taking the necessary steps to provide for an open dialogue about managing stress, COVID-19 facts and fears, and creating quiet times for the FBCE team.

**John E. Hild**, Logistics and Technical Information Division, for your support to the RTOW efforts and contributions in developing the processes and for coordinating the activities that have allowed many employees to return to the center to pick up items they required for telework from their workarea or from the Main Gate.

**Robert S. Jankovsky**, NASA Engineering and Safety Center, for your support to the technical assessment of the High Voltage Systems and contributions toward coordination across centers and within Glenn during these challenging times.

**Cass D. Kuhl**, Systems Management and Operations Branch, for support to the events associated with the Transformers Mishap and the High Voltage Systems, and your technical contributions to the investigation and unconditional support to safely troubleshoot, incorporate recommendations, and plan for a safe reestablishment of operations.

**Craig I. Mehl**, Office of Protective Services, for your support to the RTOW efforts and contributions to the Office of Protective Services and taking on additional duties to support the Logistics and Technical Information Division.

**Erin M. Reed**, Plum Brook Station, for your technical leadership developing and executing the contamination prevention tasks at the Space Environments Complex that resulted in optimal

test conditions for the Orion spacecraft at Plum Brook Station.

**Elliot A. Schmidt**, Structural Mechanics Branch, for your contributions in support of the Super Guppy Tiger Team and a substantial amount of inline work on the stress analysis in support of Artemis I Orion crew and service modules.

**Laurence A. Sivic**, Office of the Director, for your support to the RTOW efforts and contributions during these trying times as we safely execute the plan for RTOW in support of NASA missions.

**Christi A. Tomaro**, Office of Protective Services, for your leadership and support of the activities necessary to return the center to operational status after a power outage during the COVID-19 pandemic.

**Mary F. Wadel**, Aeronautics Directorate, for your support to the RTOW Priority Research efforts and contributions toward planning, coordination, and collaboration across centers for the establishment of the RTOW Priority Research Subteam review for on-site work.

**Angela D. Windau**, Occupational Health Branch, for your support to RTOW packages addressing the safety and health of the employees during the COVID-19 pandemic and your contribution to the RTOW Executive Team and all the employees formulating, preparing, and executing on-site work.



*Back of HEROICS Coin.*



# Five Ways the Space Station Benefits You!

In celebration of the International Space Station's 20th Anniversary, below are some fun facts about the station and its benefits to society.

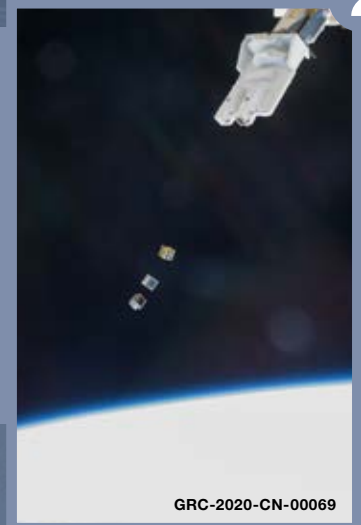
1



New space station combustion discoveries like “cool flames” may help reduce engine emissions and lead to a cleaner environment on Earth.

Over 200 small satellites have been deployed from the space station to improve internet access and telecommunication services. SmallSats (cubesats) are becoming just as capable as the larger ones for remote sensing data used for atmospheric science and humanitarian applications such as disaster response and search and rescue missions.

2



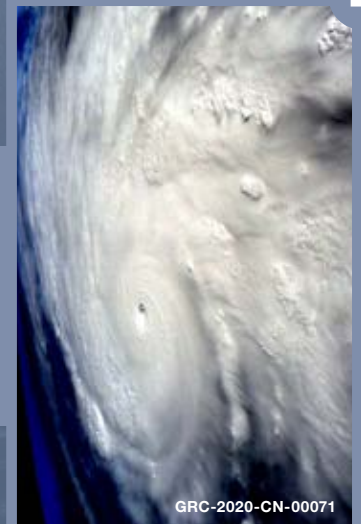
3



Toothpaste, 3D printing, pharmaceuticals; each stand to benefit from years of space station studies of colloids (tiny particles suspended in a liquid). NASA Glenn oversees a long list of colloid research including Advanced Colloid Experiments (ACE) and Binary Colloidal Alloy Tests (BCAT).

Astronauts take a lot of space station photos, which provide a unique vantage point different than the other Earth-observing satellites to support resource identification, exploration, agriculture, forestry, and other environmental uses.

4



5



Technology to reduce tiny airborne particles on space station, known as aerosols, could also improve air quality and health on Earth. NASA Glenn innovators won a 2011 R&D 100 Award for their Multi-Parameter Aerosol Scattering Sensor (MPASS), a compact, aerosol-detection system that characterizes atmospheric particles.

# Virtual SFA Awards Ceremony Held Agencywide

Three Glenn employees were among the honorees recognized at the virtual Space Flight Awareness (SFA) awards ceremony hosted by NASA's Kennedy Space Center on Nov. 18. Dr. Alotta Taylor, NASA's Space Flight Awareness program manager from the Human Exploration and Operations Mission Directorate, moderated the event. It featured Trailblazer Award presentations by center leadership to NASA civil servants and contractors across the agency.

NASA's SFA Program recognizes employees with major responsibilities for human spaceflight mission success. The Trailblazer Award celebrates the exemplary performance and innovation of early career employees within their first 7 years.

Guest speaker astronaut Dr. Andrew "Drew" Morgan reflected on his 300 days aboard the International Space Station during Expeditions 60, 61, and 62. He noted how the type of talent honored today is what we will need to bridge the gap of technology to support life on space station and apply that to Artemis.

Deputy Center Director Susan Motil congratulated the following Glenn recipients on their accomplishments:

**Dina Coggeshall**, contract specialist in Glenn's Exploration Systems Branch, for outstanding and dedicated service to Glenn

Space Flight Program procurements, and the success of NASA's mission, specifically related to the NASA Evolutionary Xenon Thruster-Commercial, Specialized, Engineering, Evaluation and Test Services, and the Gateway Power and Propulsion Element partial termination.

**Daniel J. Falkenbach**, aerospace engineer in the Chemical and Thermal Propulsion Systems Branch, for innovation and outstanding leadership to create a database tool to facilitate the Certification for Flight Readiness of the Orion Multi-Purpose Crew Vehicle (MPCV) European Service Module (ESM) Propulsion Subsystem.

**Michael A. Marsden**, electronics engineer in the Systems Architecture and Analytical Studies Branch, for outstanding technical work to develop an optical communications waveform for the Orion test flight and conduct systems analysis to assess communications for Lunar surface elements back to Earth. Each of these efforts represent foundational and significant accomplishments towards human exploration of the Moon and on to Mars.

At the end of the ceremony, Taylor gave a heartfelt thanks to all of the awardees, management, and their families for their support throughout the year. Morgan then took questions from listeners about his experiences.



*Coggeshall*



*Falkenbach*



*Marsden*



## PROMOTIONS



*Walker*

Darlene Walker has been selected the director of the Office of STEM Engagement (OSTEM) in the Center Operations Directorate. Walker previously served as the NASA Science, Education, Mathematics and Aerospace Academy (SEMAA) project manager and, most recently, as the OSTEM deputy director.

## IN APPRECIATION

I would like to express my appreciation for all the words of sympathy and condolences on the recent loss of my beloved mother.

—Harvey Schabes

## MORE THAN A MEMORY

# Hager Dutifully Secured Glenn and the Nation



*Hager*

**Nicholas E. Hager**, 26, a Linxx Global Solutions security officer supporting NASA Glenn's Protective Services Division at Plum Brook Station, died suddenly on Oct. 30. Prior to working at Glenn, Hager served 4 years in the U.S. Marine Corps, where he was assigned to the Marine Security Forces in Kings Bay, Georgia.

According to his family and co-workers, Hager was a fervent patriot, who loved serving his country and always put helping others before himself.

"From the moment I interviewed Nick, I could tell he would make a good addition to our team. You could definitely tell he had a military background by the way he carried himself and the way he interacted with others—always willing to help out a fellow officer and the team as a whole," said Lt. John Durfey, Hager's supervisor. "He would pick up almost every single shift asked of him to help another officer who needed a day off. He was a pleasure to be around and I was proud of his time as an officer at Plum Brook Station."



*Johns*

**Albert "Al" L. Johns**, 79, a 2007 retiree with 42 years of federal service, died Oct. 3. Johns was one of NASA's Superstars of Modern Aeronautics, based on his national leadership in developing wind tunnel test techniques and technological advancements in hot gas ingestion characteristics for advanced supersonic aircraft. He earned two NASA Exceptional Service medals for exceptional leadership: developing research capabilities and techniques for high-performance aircraft, including the nation's Joint Strike Fighter; and advancing state-of-the-art inlets and nozzles for aircraft engines and other aerospace applications.

**Charles A. Raquet**, 79, a 1999 retiree with 31 years of NASA service, died July 11. Raquet began his federal career as a U.S. Army Reserve officer in 1968. He dedicated his NASA career to communications technology. Raquet supported remote sensing projects to measure ice on the Great Lakes. As head of the Antenna and RF Systems Technology Branch, he helped establish the Near-Field Antenna Test Facility and supported the ACTS and Aero-X programs. Raquet retired as chief engineer of the Communications Technology Division.



*Raquet*

# Glenn's Media Relations Team Receives National Recognition

Two national professional communications organizations have recognized NASA Glenn's Office of Communications for its media relations support of the Artemis I Spacecraft Testing Campaign.

The team received the PRNEWS Platinum Award for Media Event of the Year and was named a Platinum Award finalist for Public Affairs Campaign of the Year. The team was also named as a finalist for Ragan Communications and PR Daily's Governmental Public Affairs Campaign of the Year.

The campaign centered around simulated space environments testing of the spacecraft for the 2021's Artemis I mission—an unmanned test flight around the Moon and back. The testing at Plum Brook Station's Space Environments Complex confirmed Orion will perform as designed during Artemis missions to the Moon.



GRC-2020-C-01311

Photo by Marvin Smith



## OUTDOOR SIREN TESTING

The Emergency Management Office staff will conduct an audible siren test on the "tornado" tone on Saturday, Jan. 2, at Lewis Field. A mass notification voice test will be conducted at building 3 on Wednesday, Jan. 6.

POC: Allen Turner, 3-6826

## CFC DEADLINE

The 2020 Combined Federal Campaign concludes on Jan. 15, 2021. For information, visit the Glenn WING website. Once you are in, type CFC in the transport box, or go directly to <https://cfcgiving.opm.gov/welcome>, or ask your Keyworker for more information.



Stay tuned to *Today@Glenn* for updates on these activities.

Deadline for the next calendar section is **Dec. 11, noon**. News and feature stories require additional time.

## On the Cover

Each year, Deric Rosenkranz, ALCY/Center Operations Directorate, spreads holiday cheer wherever he goes in his festive truck. People honk, leave cheery notes, and thank him for his holiday spirit. In December 2019, Rosenkranz was sited at Lewis Field with his mechanical sleigh before heading home.

**Happy holidays to all!**



GRC-2019-C-12903

Photo by Marvin Smith



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Space Administration

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Lewis Field

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Cleveland, Ohio 44135

Plum Brook Station

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[www.nasa.gov](http://www.nasa.gov)

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



# Cybersecurity Awareness: Protecting Ourselves and NASA's Mission

*NASA celebrated the 17th annual National Cybersecurity Awareness Month in October. This year's theme—"Do Your Part. #BeCyberSmart"—encouraged individuals and organizations to own their role in protecting their part of cyberspace.*

The world changed abruptly with COVID-19 and our ability to work in close proximity with one another. With a large push to work from home, the entire world had to adopt new practices across the board to still remain efficient and effective. This also posed a problem for adversaries (attackers) that had to shift their attacks and operations to have the most impact on companies and people.

To help raise awareness of today's cybersecurity attacks, Glenn's Office of the Chief Information Officer (OCIO) hosted a virtual cybersecurity webinar featuring David Kennedy, founder of TrustedSec. Kennedy's presentation, "The Wild West: Hacking Today and Protecting Yourself," dived into who the attackers are, how they go after organizations and people, and the best approach to protect yourself. He provided several examples of hacking, how hackers benefit financially, and tips for multifactor authorization passwords.

Kennedy explained that attackers are continually discovering new methods to gain access to computer systems and enterprises, making people more vulnerable than they realize. Hackers target thousands of employees in the hope of reaching just a few. "It only takes one person to spread (a virus or breach) like a wildfire," he said. "One person ends up being the downfall."

Earlier in the month, OCIO offered a virtual webinar, "What Archeology Teaches Us About Cyber Security," with Eddie Doyle, Global Security Strategist at Check Point Software Technologies. He explained what the history of human civilization teaches us about the evolution of cyberspace and how we can invest less to create a full security prevention architecture in this brave new world.

By Doreen B. Zudell



## Emergency and Inclement Weather Lines

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

## Connect With Glenn

