



AeroSpace FRONTIERS

VOLUME 20 • ISSUE 12 • DECEMBER 2018

**CFC: What's
Your Cause?**

Pages 2–3

**60th Anniversary
Celebration Recap**

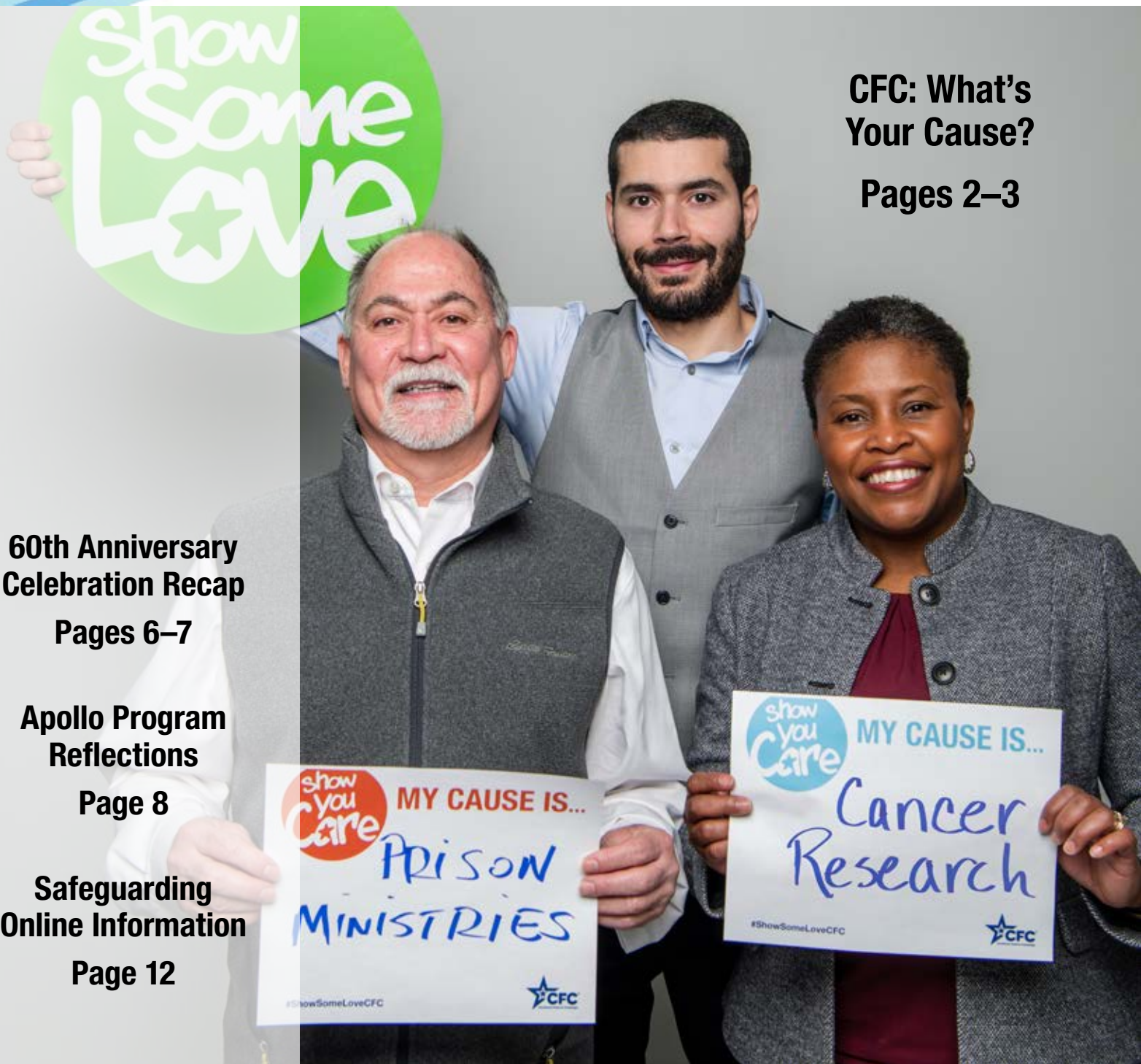
Pages 6–7

**Apollo Program
Reflections**

Page 8

**Safeguarding
Online Information**

Page 12





DIRECTOR'S SAFETY CORNER

Congratulations on a Safe and Successful Year

We completed an incredibly productive year at Glenn Research Center with the safe delivery of the European Service Module (ESM) to the Kennedy Space Center for integration. Many Glenn engineers and managers worked collaboratively with our partners and stakeholders to provide requirement and hazard control verifications that led to this significant space flight milestone for the Exploration Mission-1. My appreciation goes out to the entire Glenn workforce for a year full of programmatic and operational achievements that were accomplished with safety in mind. With your help, we will see many more remarkable accomplishments in the coming year.

Have a well-deserved, safe and joyous holiday season!

Doreen B. Zudell

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 & External Relations 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.

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



COMBINED FEDERAL CAMPAIGN CHOOSE YOUR CAUSE AND SHOW SOME LOVE

Cancer research, homelessness, environmental protection or animal welfare. What is your cause and how can you make a positive impact? Glenn's Combined Federal Campaign (CFC) committee asked employees to reflect on this question during the 2018 campaign kickoff on Oct. 25.

By Doreen B. Zudell



Photos by Marvin Smith
GRC-2018-C-08638

The audience enjoys a lively game of CFC trivia during the kickoff event.



Do you recognize your key worker on the CFC 2018 team? To find your key worker, visit <https://www.grc.nasa.gov/cfc/>.



“SHOW SOME LOVE ENABLES US TO COLLECTIVELY join together to make the world a better place,” said Center Director Janet Kavandi. “Please help our center continue our tradition of giving to the causes we love.”



Photo by Rami Daud
GRC-2018-C-09435

On the Cover:

Glenn's 2018 Combined Federal Campaign leaders, left to right, Osvaldo Rivera (loaned executive), Issam Bouckabou (co-chairperson) and Terri Rodgers (chairperson) state their cause and Show Some Love. Won't you?

This year's theme “Show Some Love” encourages employees and retirees to help improve the quality of life in our neighborhoods and around the world. The CFC is a proven network that offers confidence, convenience and choice in helping to meet this goal.

During the kickoff, CFC Chairperson Terri Rodgers welcomed special guests, Center Director Janet Kavandi, Ohio CFC Zone 28 Local Outreach Coordinator Carol McClain and representatives from several local CFC-member organizations. CFC Committee members Candice McDonald and Scott Thompson led a lively CFC trivia game with the audience.

Rodgers encouraged employees to visit <https://www.grc.nasa.gov/cfc/>, the Glenn CFC website, for updates on the campaign. Enhancements to the donation portal make it easy to make monetary donations. CFC participants may also donate volunteer time, instead of (or in addition to) making a monetary donation. Not all charities solicit volunteer time—but for those that do, the process is similar to making a monetary donation.

“The generosity of Glenn employees and retirees throughout the years is truly amazing,” Rodgers said. “Last year, participants donated \$307,230 and 1,858 volunteer hours!”

The 2018 campaign runs through Jan. 11. Rodgers, Co-Chairperson Issam Bouckabou and Loaned Executive Osvaldo Rivera, along with keyworkers throughout Lewis Field and Plum Brook Station, are eager to assist employees in helping support their personal causes through the CFC.

WHEN YOU GIVE THROUGH THE CFC, YOU ARE GIVEN CONFIDENCE, CONVENIENCE AND CHOICE.

Confidence: Donors can give with confidence knowing this is a federally regulated program.

Convenience: The CFC is convenient for donors and charities.

Choice: The CFC provides a myriad of choices from how to pledge to the thousands of charities donors can choose to support.

YOUR PLEDGES COUNT! TO DONATE, VISIT THE DONATION PORTAL—[HTTPS://CFCGIVING.OPM.GOV/WELCOME](https://CFCGIVING.OPM.GOV/WELCOME)

Retirees may visit <https://ohiocfc.org/federal-retiree-giving> to choose a cause and learn more about their role in the CFC.

Striving for Inclusion in the Workplace



During Glenn's 2018 Hispanic Heritage Month Observance on Sept. 26, Veronica Villalobos, principal deputy associate director for the U.S. Office of Personnel Management's (OPM's) Employee Services Division, talked about the importance of inclusion in the workplace. She shared some of her experiences with bias and ignorance and stressed the need for cultural awareness when interacting in a diverse environment. Dr. Rubén Del Rosario, director of Aeronautics, left, then led a question-and-answer session with employees and Villalobos, right. Glenn's Hispanic Advisory Group, in partnership with the Office of Diversity and Equal Opportunity, hosted the event.

NEWS AND EVENTS

Tingle Worked on Glenn-Managed Experiments

Astronaut Scott Tingle, who served as a flight engineer on Expedition 54/55, hosted a post-flight briefing at Glenn on Oct. 18. He launched to the International Space Station aboard the Soyuz spacecraft on Dec. 17, 2017, and returned on June 3, 2018. Tingle shared highlights of living and working on the space station, including his spacewalk, which he called "one of the coolest and hardest things I've ever done." Tingle completed hundreds of experiments during his mission, including work on several of Glenn's experiments within the Combustion Integrated Rack and Fluids Integrated Rack.



GRC-2018-C-08374

Photo by Rami Daud



Photo by Brian Sommers
GRC-2018-CN-00051

Space Apps Address Challenges on Earth and in Space

During the annual International Space Apps Challenge hosted at Lewis Field, Oct. 19 to 21, space enthusiasts from across the region came to Glenn to develop mobile applications, software, hardware, data visualizations and platform solutions that address challenges we face on Earth and in space. The international event is spread across 75 countries. For the first time, the event featured a day-long design challenge for K–12 students. Projects included building and programming robots. Speakers, tours, demonstrations and an awards ceremony rounded out the 48-hour event.



Photo by Bridget Caswell
GRC-2018-C-08959

Assisting People With Disabilities to Gain, Maintain Employment

In order to seek, train for and maintain employment, some people with severe disabilities may require personal assistance services to assist them with activities of daily living. During Glenn's Disability Employment Awareness Event, Oct. 25, Maria Wolf, independent living specialist, explained how personal care assistance programs such as Linking Employment, Abilities and Potential (LEAP) can help. The Office of Diversity and Equal Opportunity (ODEO) Director, Aretha Carr, opened the event by providing an overview of the recent Equal Employment Opportunity Commission changes to Section 501 of the Rehabilitation Act. The ODEO and the Disability Awareness Advisory Group sponsored the event.

NASA 60th Anniversary Highlights

Glenn celebrated NASA's 60th anniversary in a variety of ways—in and outside of the center!
Thanks for joining in on the celebration! Here are some highlights.



60th Anniversary Lunch Series

Over the summer, Glenn hosted the 60th x Six lunch series. The series, which featured six topics, was intended to connect Glenn employees in an engaging networking event. Pictured, left, Betsy Kling and Deborah Waters.

Special Tour of Lewis Field

Golden Astronaut ticket recipients were able to visit and tour Lewis Field on Sept. 29. Guests visited several research facilities and attended a presentation by former astronaut Gregory "Box" Johnson.



Center Picnic Celebration

Strike up the band! Glenn had more reason to celebrate during this year's Center Picnic on Aug. 23—NASA's 60th anniversary.



Family Fun at Work

Employees and family members enjoyed an exciting day at Lewis Field on Aug. 25. The 60th Anniversary Family Day included tours of select Glenn test facilities; and engaging, hands-on activities for all ages.





Visitor Center Extravaganza

Glenn hosted an anniversary celebration in its visitor center at Great Lakes Science Center on Sept. 29. This event was open to the public and featured exhibits, demonstrations and an opportunity to meet former astronaut Gregory "Box" Johnson.



Happy Birthday, NASA!

The National Aeronautics and Space Administration officially opened for business on Oct. 1, 1958. On Oct. 1, 2018, Glenn staff gathered for a culminating event that included cutting of a birthday cake.



Focus on Technology

Glenn's Evening With the Stars was held at the Rock & Roll Hall of Fame on Sept. 18. The program featured presentations by, left to right, Ashlie Flegel, Carl Sandifer and Dr. Erin Reed, on NASA Glenn technology. Administrator Jim Bridenstine also participated!



Thirty 60-Second Stories in 60 Days

Women at Glenn: 60 Seconds for the 60th video series highlighted women at NASA—their work, their legacy and advice they have for the next generation. Pictured: Rochelle May.



Golden Astronaut Outreach Events

Fifty Golden Astronaut tickets were randomly distributed at over a dozen outreach events throughout the year. The tickets made the recipient a candidate to receive up to four entries to attend the special tour. Pictured: former astronaut Mike Foreman.

GRC-2018-C-04047

Photos by Imaging Technology 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 missions that flew during the month of December:

Apollo 8 and Apollo 17.



Apollo 8

DATE: Dec. 21–27, 1968

MISSION: First to orbit the moon

CREW: Borman, Lovell, Anders



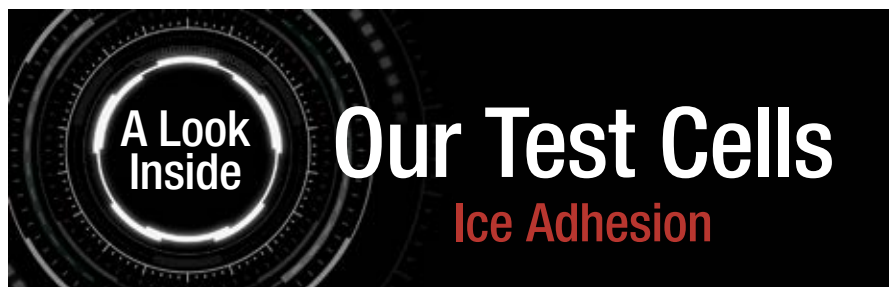
Apollo 17

DATE: Dec. 7–19, 1972

MISSION: Landed on the moon

CREW: Cernan, Schmitt, Evans

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



The buildup of ice on aircraft is a deadly multibillion-dollar-per-year problem in the aerospace industry. Ice adhesion—ice sticking to aircraft structures—is the driving cause of the problem.

A team of researchers is taking a deep dive in this area by conducting a series of tests to measure adhesion strength and material properties of ice under the Revolutionary Vertical Lift Technology and Advanced Air Transport Technology programs. Researchers simultaneously collect a large number of ice samples in the Icing Research Tunnel. These samples are then tested and characterized in the Revolutionary Icing Materials Evaluation Lab (RIMELab), CW-19, in the Engine Research Building.

The team has collected more than 800 samples over the course of a year of testing, providing the foundation for a new ice shedding model. The model would aid aerospace manufacturers by providing better predictions of the risk associated with shedding on helicopter rotors and engines and enable the design of more efficient deicing equipment.

Researchers include Dr. Andrew Work, Dr. Andy Gyekenyesi, Dr. Jon Salem, Eric Kreeger, Dr. Derek Quade and interns Ernestina Schirmer and Rebekah Douglass.



Dr. Work, left, and Dr. Gyekenyesi with adhesion test stand in the RIMELab.

“Like” Your Favorite 2018 Image

Connect with NASA Glenn’s Twitter, Facebook and Instagram accounts to see our best images of 2018 starting Dec. 27.

“Like” your favorites and we will announce the most popular image on each social media platform on Dec. 30.



Twitter
@NASAGlenn



Facebook
@NASAGlenn



Instagram
@nasaglenn

Two Employees Earn Space Flight Awareness Awards

Dr. Michael J. Barrett and **Mark E. McNelis** were recently honored with Space Flight Awareness (SFA) awards.

Barrett, deputy chief of Glenn's Space Technology Project Office, received the SFA Management Award in recognition of his exemplary leadership in structuring and executing strategic approaches to major human space flight systems acquisitions. His work with the formulation of the Gateway power and propulsion element (PPE) was cited as "a benchmark for inter-center collaborations and use of commercial sector capabilities."

McNelis, Structural Dynamics Branch, was recognized with the SFA Honoree Award for Exceptional Leadership in the NASA team effort to certify the SpaceX Dragon 2 capsule for its 2019 flight and ensure Commercial Crew Program success. McNelis led the NASA support effort for SpaceX acoustic testing at Plum Brook Station and the vibroacoustic certification for flight of the Dragon 2 vehicle.

The SFA awards are among NASA's highest honors and recognize recipients for significant contributions to the human space flight program.

Honoring Professional Excellence in STEM

Dr. QuynhGiao Nguyen, High-Temperature Durable Materials lead for the Hypersonic Technology Project, traveled to Minneapolis, Oct. 19, to receive the Society of Women Engineers (SWE) Advocating Women in Engineering Award. The award honors "an individual who has demonstrated professional excellence in their chosen STEM field and has proven to be an advocate of women in engineering and SWE's objectives."



Photo Courtesy of SWE
GRC-2018-CN-00052

Dr. Nguyen, right, with SWE President Penny Wirsing.

Uniting Against Hunger



Glenn employees answered the call to help fight hunger when they participated in the Greater Cleveland Food Bank volunteer event on Aug. 18. The group processed 11,263 pounds of food in just 4 hours, which counted toward our goal! This year, Plum Brook Station and Lewis Field employees surpassed their 10,000-pound goal by donating a total of 12,977 pounds of nonperishable food items to the annual Feds Feed Families campaign. Donations were made to the Greater Cleveland Food Bank and the Crossroads Homeless Shelter in Sandusky. Thanks to all who donated!



AWARDS

Glenn Engineers Recognized Among STEM Conference Honorees



Dr. Ellis



Dr. Lizcano

Two of Glenn's engineers were honored during the 23rd annual Women of Color STEM Conference Awards Gala and Dinner, Oct. 13, in Detroit. **Dr. Brenda Ellis** and **Dr. Maricela Lizcano** were highlighted among the most talented professional women in the fields of science, technology, engineering and mathematics.

Ellis received the Career Achievement in Government Award for her achievements as a computer engineer and program manager for NASA's Information Technology (IT) Security Awareness and Training Center. She is also a contributing member of the Federal Information System Security Education Association Working Group and a partner in the Department of Homeland Security's "STOP. THINK. CONNECT." campaign.

Lizcano received the Technical Innovation in Government award. She is a research materials engineer supporting NASA's Transformational, Tools and Technology Project leading multifunctional and nanomaterials development for future high-voltage power transmission in hybrid electric propulsion systems.

The Women of Color STEM Conference is produced by Career Communications Group Inc. (CCG), working with all types of companies to help support them in promoting multiculturalism and gender equity in STEM fields.

Lizcano also accepted an award presented by the Great Minds in STEM organization for Most Promising Engineer with a Ph.D. during the Hispanic Engineer National Achievement Award Conference (HENAAC), Oct. 17 to 19. She joins the 28th class of HENAAC honorees recognized as phenomenal role models in STEM.

PROMOTIONS



Windau

Angela Windau has been selected chief of the Occupational Health Branch, Safety and Health Division. She previously provided technical leadership to the branch through programs in environmental health, industrial hygiene, ergonomics, medical and fitness wellness programs and the Employee Assistance Program.

RETIREMENTS



Foster



Gaier



Rusick



Smialek

William M. Foster II, ISS and Human Health Office, Human Exploration and Space Operations Project Office, retired Sept. 30, 2018, with 35 years of service.

Jim Gaier, Environmental Effects and Coatings Branch, Materials Division, retired Nov. 30, 2018, with 35 years of service.

Jeffrey J. Rusick, Program and Project Assurance Division, Safety and Mission Assurance Directorate, retired Nov. 30, 2018, with 31 years of service.

James Smialek, Materials and Structures Division, Research and Engineering Directorate, retired Oct. 29, 2018, with 50 years of service.

Take Your Memories. Leave Your Records!

Records Management is happy to provide guidance on how best to manage your records in preparation for retirement. Contact Anne Mills for assistance, 3-8715.

Check out this 30-second video from Records Management reminding you why it is important that records stay here.

<https://go.nasa.gov/2zPJJ8K>

Upcoming Center Events

The Glenn Band

along with the
Office of Diversity and Equal Opportunity,
Glenn Advisory Groups and Clubs
Present

A Winter Festival



Monday, Dec. 17

11:30 a.m. to 1:00 p.m.
Ad Building Auditorium

Celebrating Traditions
from Around the World

CENTER INFORMATION

NASA Glenn Ombuds Program

A confidential and neutral means for raising workplace issues and concerns that could impact safety, organizational performance and mission success.

Ombuds Representatives

Harvey Schabes, 3-5309
Gwynn Severt, 3-8310

- A safe place to raise concerns
- An opportunity to be heard
- An opportunity to consider options
- Coaching

<https://www.grc.nasa.gov/ombuds/>

Confidentiality Informality Neutrality Independence



GSEL MOBILE LIBRARIAN

The Glenn Science and Engineering Library (GSEL) Mobile Librarian will be visiting building 162 through Dec. 20, and building 3 from Jan. 15 to 24, 2019, from 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

OUTDOOR SIREN TESTING

The Emergency Management Office staff will conduct a mass notification "voice" test at building 3 on Wednesday, Jan. 2, at Lewis Field. An audible siren test on the "tornado" tone will be conducted on Saturday, Jan. 5.

POC: Allen Turner, 3-6826

IFPTE LOCAL 28, LESA MEETING

LESA will hold its next membership meeting, Wednesday, Jan. 9, noon, in the Glenn Employee Center's Small Dining Room.

COMBINED FEDERAL CAMPAIGN

The 2018 Combined Federal Campaign ends on Friday, Jan. 11, 2019.



Deadline for next calendar section is **Dec. 14, noon**. News and feature stories require additional time.



Cybersecurity Awareness Month Event

Online Safety Is “Our Shared Responsibility”

This year marked the 15th annual National Cybersecurity Awareness Month (NCSAM), which included a month-long campaign devoted to educating everyone about the roles they play in helping to safeguard the internet.



Photos by Bridget Caswell
GRC-2018-C-07991

Glenn's Les Farkas, left, is amazed when cybersecurity expert Dave Kennedy takes about 20 seconds to access Farkas's personal information, including an old AOL email account that has not been used for years.



GRC-2018-C-08030

Key organizers and participants of the event include, left to right: Dave Muman, Sherri Lippus, Ellis, Kennedy, Gib Winter, Gallagher and Witt.

NASA Glenn and the Office of the Chief Information Officer (OCIO) hosted the agency NCSAM event on Oct. 10. Speakers demonstrated how to become more cyber aware and how to protect yourself and your working environment from cyberattacks.

Glenn's Associate Director Janet Watkins and Chief Information Officer Sean Gallagher opened the 3-hour training session by stressing the importance of cybersecurity and individual cyber hygiene. NASA Administrator Jim Bridenstine participated through a video that centered on protecting yourself and your professional data against cyber threats, encouraging our workforce to STOP. THINK. CONNECT.

“Technology has become a huge part of everyone's life, and it makes us a target for cyberattacks,” said Bridenstine. “Technology enables us to do amazing things, but it can also be used to undermine us or cause harm.”

Keynote speaker Dave Kennedy, cybersecurity expert, consultant and founder of TrustedSec, talked about “The Hacking Age,” and how we can defend ourselves against threats. He demonstrated how easy it is for hackers to obtain our personal information.

Additional speakers included NASA's Mike Witt, associate chief of information technology for Cybersecurity and Privacy and Senior Agency Information Security officer; and Dr. Brenda Ellis, NASA IT Security Awareness and Training Center (ITSATC) program manager. Witt focused on cybersecurity vulnerability at NASA. Ellis explained ITSATC's role as an IT security training resource for the agency.

The overall objective of the event was to show how cybersecurity is a SHARED RESPONSIBILITY, and together, with your help we can make a difference and create a safer digital working environment here at NASA.

By Doreen B. Zudell

Emergency and Inclement Weather Lines

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

Connect With Glenn

