



# AeroSpace FRONTIERS

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## Personal Safety Awareness

Slips, trips and falls are the most reported mishaps at Glenn, especially during the winter months. They also pose our greatest number of workplace injuries. In Northeast Ohio, we are entering into wintry, icy and snowy conditions. In the 2019 winter season, we received 16 close calls related to slipping, tripping and falling in parking lots, sidewalks and entrances to buildings. A high number of our falls come from exiting vehicles onto icy parking lots. Please be reminded of these potentially hazardous conditions, slow down the pace and use proper footwear to mitigate personal injury.

*Marka*

## 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](mailto:doreen.b.zudell@nasa.gov).

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# Glenn Celebrates 30 Years of GVIS Excellence

Glenn's Graphics and Visualization (GVIS) Lab staff hosted a 30th anniversary celebration at Lewis Field on Nov. 7. The event provided information on the past, present and future of dynamic facilities that offer advanced visualization technology and methodology.

GVIS team lead Herb Schilling welcomed guests and introduced keynote speaker Dr. Jay Horowitz, the developer and founder of the GVIS Lab. Horowitz served NASA from 1985 to 2012.

"The GVIS Lab came about because we wanted to provide the center with the tools and expertise for using cutting-edge visualization technologies, at a cost not feasible for distribution across the lab," he explained. "It also would provide an exciting way to promote NASA to the community."

Horowitz' presentation included a timeline of milestone events and sources of influence that led to the GVIS and its significant advances. Some examples include:

- The Research Analysis Center (RAC) building 1989 expansion led to space for the GVIS Lab and the Advanced Computational Concepts Laboratory that Horowitz also managed for a period of time.
- Acquisition of early digital video animation equipment enabled GVIS to create unique image processing tools for several microgravity fluid and combustion projects.



Photo by Marvin Smith  
GRC-2019-C-11122

*On the Cover: John Thompkins, GVIS Lab, left, and Megan Sigetic, ATS/Imaging Technology Center, explore Urban Air Mobility communication scenarios in the CAVE.*



# GVIS

## Graphics & Visualization Lab

- The Glenn Reconfigurable User Interface and Virtual Reality Exploration (GRUVE) Lab was created, with funding by the High-Performance Computing and Communications Act (1991/1996) for research into advanced collaborative environments with NASA's Ames and Langley Research Centers.
- Aeronautics researchers became key GVIS users and partners, whose feedback aided enhancements to several visualization products widely used by industry.
- Virtual reality technology was first applied to Office of Education's Mobile Aerospace Education Lab (MAEL) workstations and WrightSim flight simulation software created for the 2003 Centennial of Flight.
- Unique interactive displays were developed for industry conferences, public events and congressional demonstrations.
- Doodads, like animated 3D cards, were created to promote center programs to industry and the public.
- Student intern contributions enhanced lab capabilities.

Schilling shared his vision for future operations. "We want to be involved in the entire life-cycle of research projects—from the proposals, to high fidelity data visualizations, to contributing to generation of online papers with interactive visualizations, and more," he explained. "Additionally, there is strong demand for creating highly interactive and immersive virtual tours of Glenn facilities to stay ahead of the technology curve with our outreach visualization."

After the presentations, guests traveled to the GRUVE

Lab to see the CAVE (Computer-Automated Virtual Environment), predominantly used to analyze data obtained either from computer simulation or one of NASA Glenn's research test facilities. Guests donned 3D glasses to gain a sense of how researchers can observe their test data for more efficient development and delivery of products and services for NASA missions.

Following the tour, guests returned to the auditorium to sample virtual reality software and talk with GVIS team members.

For a closer look at GVIS capabilities visit <https://gvis.grc.nasa.gov>.

By S. Jenise Veris



GRC-2019-CN-00054

Photo by Doreen B. Zudell

*GVIS intern Myranda Uselton shows Kelly Sands features of the zSpace app, NASA Concept Vehicles, which allows users to manipulate the article in 3D.*



Photo by Marvin Smith  
GRC-2019-C-10214

*Pictured, left to right, bottom row: Janice Romanin (senior technical mentor); Deboshri Sadhukhan; Carl Liebfried; Nicholas Lantz; Jennifer Jordan; Ian Haskin; and Bruce Rosenthal (senior technical advisor). Left to right, top row: David Grantier (technical program manager); Thomas DeMichael; Yaritza De Jesus-Arce; Keith Martin; and Zhuohui He.*

## Third Rocket University Class Graduates

During a ceremony on Oct. 23, NASA Glenn honored nine employees who completed the Rocket University 3 (RU3) program. The development program provides early and midcareer engineers and scientists with technical knowledge and experience and employs a cross-functional project team with hands-on applications through the entire project life cycle. Content includes Academy of Program/Project and Engineering Leadership courses, internally led NASA workshops and the completion of a full life cycle team project.

The team project, Venus Imager for Planetary Exploration Research (VIPER), required designing, integrating and testing a prototype camera system, and insulated pressure vessel for use on the surface of Venus.

## Employees Rewarded for Innovative Access to Center Tours

Members of Glenn's Digital Communications Team and the Imaging Technology Center (ITC) collaborated on a NASA Glenn virtual tours product that merited an APEX Award of Excellence. They created 360-degree virtual tours for nine of Glenn's world-class test facilities at <https://www.nasa.gov/glennvirtualtours>.

Glenn's Digital Communications Team of Nikki Welch and Nancy Kilkeny (ATS) teamed with ITC/ATS members Jordan Salkin, Joey Haas and Rami Daud, with support from Dennis Brown, Bill Fletcher and Jim Zunt.

The ITC/ATS members, along with Lisa Lapka, Test Facility Management Branch, also received an APEX Award for a new Facility Tours website at <https://www.grc.nasa.gov/f/fx/fxt/tour/> to more effectively handle increasing requests for tours. It defines a process for online tour requests, specifies authorized tour audiences and lists more than 25 of Glenn's most popular facilities.

Apex Awards recognize excellence in graphic design, editorial content and the ability to achieve overall communications excellence.

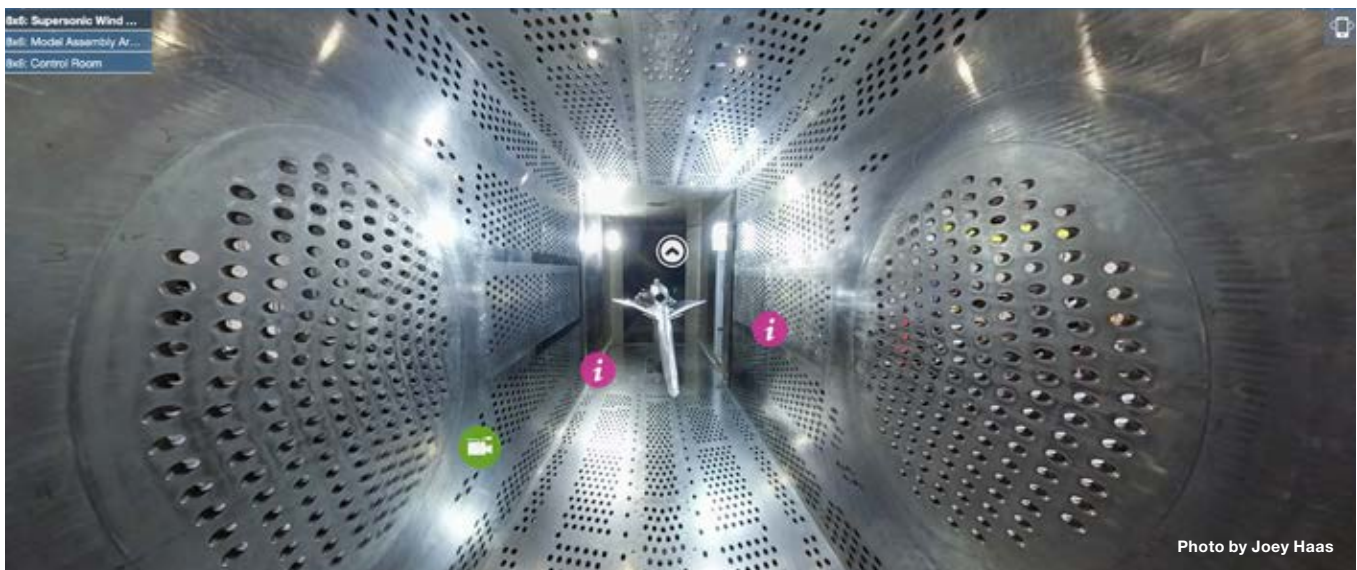


Photo by Joey Haas

*Take a virtual tour into the 8- by 16-Foot Supersonic Wind Tunnel.*



# Cybersecurity Awareness Month: Learning How to Daily Safeguard Against Cyberattacks

**While October is commonly associated with Halloween, it also marks National Cybersecurity Awareness Month (NCSAM).**

This year, during a 3-hour training session, NASA employees were treated to best practices to protect their work and personal systems against cyberattacks—more chilling than any Halloween tricks.

Glenn's Office of the Chief Information Officer (OCIO) hosted the live NCSAM training event, Oct. 9, in the MIC Auditorium. It broadcasted live to Plum Brook Station and NASA's Johnson Space Center.

Associate Center Director Larry Sivic and Glenn's Chief Information Officer (CIO) Sean Gallagher offered welcoming remarks. Each emphasized the importance of a shared responsibility to learn and implement the information technology (IT) community's best cyber practices and policies to safeguard against threats and risk of attacks to NASA missions and services.

"Hardware, software, industrial controls systems within our test facilities, desktops, laptops, smart phones, NASA's Office 365 and household appliances—technologies integral to our daily work and life—all have made the world more interconnected than ever before with increased risk to cybersecurity," Sivic noted.

Keynote speaker Kim Komando, national radio and TV host and columnist for USA Today, helped raise awareness and inspire a proactive behavior in cybersecurity best practices. Komando, who writes about consumer technology and the lifestyle of a digital age, provided a comprehensive presentation on the evolution of digital technology. She emphasized that while technology has made our lives easier, they have also reduced our privacy and made us more vulnerable to cyberattack.



*Komando captivated a capacity crowd with her knowledge of digital technologies.*

The event also featured a NASA leadership panel, that offered different perspectives on four cybersecurity topics: the role of individual employees; managing risks to NASA missions; NASA supply chain; and foreign travel. CIO Gallagher joined panelists Mike Witt, NASA's Associate CIO for Cybersecurity and Privacy and the Senior Agency Information Security Officer; and Bryan Smith, Glenn's director of Space Flight Systems. Nola Bland moderated the discussion and a question and answer session.

Dr. Brenda Ellis, NASA's IT Security Awareness and Training Center (ITSATC) program manager, provided additional remarks on the role of ITSATC and resources. Participants earned credit for fiscal year 2020 Cyber Security & Sensitive Unclassified Information Awareness annual training by attending the event and acknowledging the Cybersecurity Rules of Behavior.



*Panelists, seated left to right: Smith, Witt and Gallagher discuss and field questions on a variety of cybersecurity topics. Bland, left, moderated.*

By S. Jenise Veris



# No Veteran Walks Alone Supporting our Veterans



*Left to right, Dr. Pérez-Davis, Kleem, Springer and Stringer at the event.*

Glenn's Veterans Awareness Committee (VAC) and the Berea Veterans Outreach Office joined forces to honor Glenn military veterans during a Veterans Day Observance ceremony on Nov. 6. Members of the Sons and Daughters of the American Revolution presented colors and Acting Center Director Dr. Marla Pérez-Davis welcomed and thanked veterans for their service and sacrifice.

VAC members David Stringer, Plum Brook Station director, and Samantha Yousef, Test Facility Management Branch, oversaw the event with Berea Chaplain Willie Springer as the keynote speaker. In his address, Springer stressed that no veteran walks alone and the importance of reaching out to veterans and their families with the support they need. Berea Mayor Cyril Kleem also attended to lend his support, and give thanks to our veterans.

The event concluded with a presentation of pins and personalized certificates to active and retired Glenn veterans in attendance. Nearly 40 Glenn veterans from all armed forces and members of the U.S National Guard came forward to be recognized.

By Doreen B. Zudell



*Members of the Sons and Daughters of the American Revolution prepare to present colors during the observance.*



*Veterans and members of the Mission Support Office, left to right, Robert Lacios, Dominic Gioradano, Anthony Williams and Vishal Butala, gather with their certificates.*





GRC-2019-C-11421

Photo by Bridget Caswell

*Employees receive an overview of the latest products and upgrades to Records Management, History, Library and Budget Services.*

## Employees Explore Support Services at Open House

During the Building 14 Fall Open House, residents from the Center Operations Directorate put out the welcome mat to a steady stream of center employees on Oct. 30. Employees met residents, engaged with subject matter experts and enjoyed refreshments during a self-guided tour through various areas housed in the Center Operations Building.

"This Open House highlighted some of the many services Center Ops provides on a daily basis to Lewis Field and Plum Brook Station customers," said event coordinator Betsy Lavelle.

Participating areas from the Logistics and Technical Information Division (LTID) included Metrology Services, Media Services, Janitorial Services, Municipal Waste and Recycling, Administrative and Clerical Services, Organizational Safety, Logistics Services, Event Services and Business Services.

Visitors strolled through displays and demonstrations staffed by LTID personnel as well as stops hosted by the Office of Protective Services, Emergency Management Office, Lean Six Sigma, and Exhibits Team, who partner to support Center Operations excellence.

By S. Jenise Veris



GRC-2019-C-11472

Photo by Jef Janis



GRC-2019-C-11429

Photo by Bridget Caswell

*The Exhibits team highlighted artifacts and technology created to promote center programs.*

*Employees observe a light box setup to demonstrate how the reflection from a monochromatic light source helps to accurately calibrate measurement devices for Metrology Services customers.*

## Employees Celebrate LaGrange Point Café Opening



Glenn and Amerikrairie Food Services held the grand opening for the LaGrange Point Café in the MIC lobby on Oct. 16. During the celebration, Glenn Associate Director Larry Sivic, left, participated in a ribbon cutting and announced the winners of a raffle drawing for a free food or drink item. Jeff Boyer, AmeriKrairie Food Corporation, center, and Exchange Operations Manager Krasynthia Murphy, right, look on. Menus, pricing and hours of operations can be viewed on the Exchange and Café Services website on WING.

## The Right Talent, Right Now

Richie Parker, right, chief engineer of Government Projects at Hendrick Motorsports, poses with Larry Sivic, left, associate center director, after Glenn's Disability Employment Awareness Month observance on Oct. 24. Parker shared his inspirational story about living with a disability and overcoming obstacles. He told how his determination to succeed helped him land his job with Hendrick Motorsports. Parker reminded the audience that our biggest obstacle is ourselves, and that the human body is capable of amazing things. The Office of Diversity and Equal Opportunity, in partnership with the Disability Awareness Advisory Group, hosted the event.



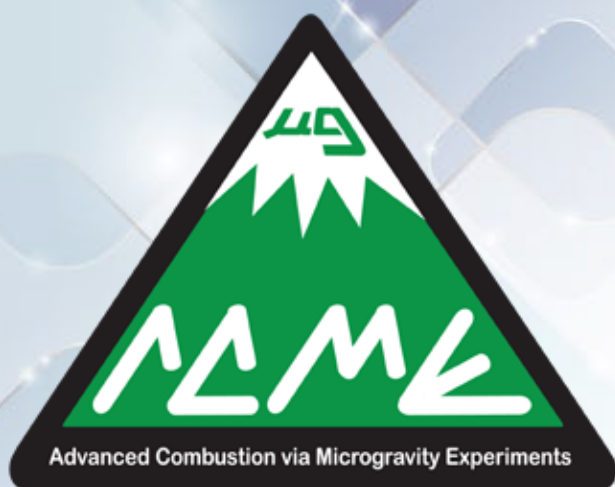
## NEWS AND EVENTS



## Space Enthusiasts Build Innovative Solutions

Astronaut Doug Wheelock energized participants with possibilities during his keynote address at NASA's 2019 International Space Apps Challenge at Lewis Field, Oct. 18 to 20. The event engages thousands of citizens at different locations across the globe to use NASA's open data to build innovative solutions to challenges we face on Earth and in space. More than 130 participants, comprising 14 teams, gathered in the MIC auditorium to participate locally in the challenges. NASA employees and community partners organized and led the activities. Acting Center Director Dr. Marla Pérez-Davis opened the event.





## Fifth ACME Experiment Fired Up

Staff in Glenn's International Space Station (ISS) Payload Operations Center are now remotely commanding the Structure and Response of Spherical Diffusion Flames (s-Flame) experiment located in the ISS's Combustion Integrated Rack. The s-Flame investigation is the fifth experiment to be conducted in the Advanced Combustion via Microgravity Experiments (ACME) project, which uses a modular set of hardware to study flames in gaseous fuels. The s-Flame goals are to identify radiative and convective extinction limits and investigate the possible existence of theoretically predicted pulsating instabilities. For more information, visit <https://www1.grc.nasa.gov/go/acme>.

## Two Named to Senior Executive Service



*Dr. Barrett*

Dr. Michael J. Barrett has been selected to the Senior Executive Service position of chief, Power and Propulsion Project Office, Space Flight Systems Directorate, effective Oct. 13. He has over 30 years of government, academic and industry experience, including 18 years of engineering and project management experience at Glenn across numerous space flight development programs and projects.



*Myers*

Harmony Myers has been selected as director of the NASA Safety Center (NSC), effective Oct. 13. Myers began her career with NASA in 2000 at the Kennedy Space Center, and in 2012 she accepted a development detail at NASA Headquarters as executive director of the Aerospace Safety Advisory Panel. Since 2018, she has served as the director of the Technical Excellence Office at the NSC.

## Local Entrepreneur Speaks at Hispanic Heritage Observance

Glenn's Hispanic Advisory Group (HAG), in collaboration with the Office of Diversity and Equal Opportunity, welcomed Cleveland's own Bernie Moreno to the 2019 Hispanic Heritage Month Observance. HAG member Daniel Rodriguez, left, led a dialogue with Moreno on his success as an entrepreneur and community leader. They discussed Moreno's role in transforming Cleveland into an epicenter of Blockchain technology—a growing list of records, called blocks, that are linked using cryptography. Moreno reflected on immigrating to the United States as a child, becoming a U.S. citizen at the age of 15 and his belief that others would not define him.



Photo by Quentin Schwinn  
GRC-2019-C-09552

# FEB Recognizes Glenn Diversity Leaders



*Pictured, left to right: Wong, Associate Center Director Larry Sivic, Clark, Dr. Choi and Dr. Connolly.*

The Federal Executive Board (FEB) presented a Diversity and Inclusion Award to four NASA Glenn employees at the 2nd Annual Special Emphasis Program Awards Gala in September. The event honors the exceptional achievement and leadership of special emphasis group members who continue to make a difference by taking affirmative steps to ensure equal opportunity for minorities, women and people with disabilities. The Glenn honorees and their group affiliation, include Kathy Clark, Disability Awareness Group; Dr. Benjamin Choi and Wayne Wong, Asian American/Pacific Islander Advisory Group; and Dr. Joseph Connolly, Advisory Group for Native Americans.

# Hernández-Lugo Honored by Crains and HENAAC



Crain's Cleveland Business featured **Dr. Dionne Hernández-Lugo** in its Nov. 18 issue and honored her at a Nov. 25 ceremony as a "Forty Under 40" honoree. The annual issue highlights professionals under 40 who are helping to shape Northeast Ohio's future. Dr. Hernández-Lugo, who is deputy manager for the Kilopower Project in Glenn's Space Technology Project Office, also received a Luminary Award at the Great Minds in STEM/31st Hispanic Engineer National Achievement Awards Conference (HENAAC) held in September. Luminary honorees represent professionals in STEM fields who initiate, collaborate, and lead key programs and research, while also making significant contributions to the Hispanic technical community as leaders and role models.

*Dr. Dionne Hernández-Lugo*

# Reid is Women of Color STEM Honoree

**Concha Reid** received a Technology Rising Star Award presented at the Women of Color (WOC) STEM Conference, held Oct. 3–5, in Detroit. Reid, an electrical engineer in Glenn's European Service Module Integration Office, manages the exchange of hardware, software and data between NASA and the European Space Agency for the Orion spacecraft. For more information, visit @NASASTEM and @WomenNASA.



*Reid performs critical work for the Artemis program.*





## Upcoming Center Events



### 2019 Combined Federal Campaign

**ends on Jan. 12, 2020**

Help desk tables are available in the following buildings to assist employees with donations until Jan. 9, 2020:

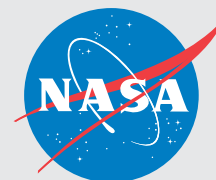
MIC (bldg. 162) lobby on Mondays from 9 a.m. to 10 a.m.

Cafeteria (bldg. 15) on Thursdays from 11 a.m. to 1 p.m.



To donate, visit  
**ohiocfc.org.**

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



#### EXCHANGE HOLIDAY SALE

Now through Dec. 23, save 20% on sweatshirts, t-shirts, polos and more. Save 10% on favorites like Hello Kitty Astronaut and freeze-dried ice cream and strawberries. New arrivals on sale: NASA logo shower curtain, slippers, coffee mugs and more.

POC: Connie Carroll, 3-5535

#### OUTDOOR SIREN TESTING

The Emergency Management Office staff will conduct a mass notification "voice" test at building 3 at Lewis Field on Wednesday, Jan. 1. An audible siren test will be conducted on the "tornado" tone on Saturday, Jan. 4.

POC: Allen Turner, 3-6826

#### GSEL MOBILE LIBRARIAN

The Glenn Science and Engineering Library (GSEL) Mobile Librarian will be visiting building 341 (Fitness Center) from Jan. 6 to 17, from 11 a.m. to 1 p.m. and building 49 from Jan. 27 to Feb. 7, 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

#### IFPTE LOCAL 28, LESA MEETING

LESA will hold its next membership meeting, Wednesday, Jan. 8, noon, in the Glenn Employee Center's Small Dining Room.

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



# Coins Awarded for Glenn HEROICS

In 2016, under the leadership of former Center Director Dr. Janet Kavandi, the Glenn Senior Management Team developed a set of Glenn core values. These became known as Glenn's 7 Expected Behaviors or HEROICS: (1) **H**elping All To Succeed, (2) **E**xcellence, (3) **R**espect, (4) **O**penness, (5) **I**ntegrity, (6) **C**ooperation, and (7) **S**afety.

In 2019, senior leadership commissioned a HEROICS Coin to recognize employees who embody the spirit of the seven HEROICS tenets. To date, Kavandi and Acting Center Director Dr. Marla Pérez-Davis have presented coins to the following seven employees for adopting these admirable behaviors:



**Dennis Andrucyk**, deputy associate administrator, Science Mission Directorate, for making changes to his schedule the day of the NASA Honor and Glenn Center Awards event, and flying to Cleveland to be guest speaker when the event speaker was unable to attend due to Hurricane Dorian.

**Stephen J. Barsi**, Chemical and Thermal Propulsion Systems Branch, for leadership and dedication to resolve the Orion European Service Module propulsion subsystem anomalies and make progress towards the Artemis 1 flight.

**James R. Griffin**, Institutional Services Branch, for developing and implementing an efficient and effective process for the review of contracts payment claims resulting from the government shutdown.

**Glen M. Horvat**, Chief Engineer Office, for contributing to a systems approach in support of our programmatic priorities to the fiscal year 20 Staffing Call and Hiring Guidelines documentation.

**Linda J. Moore**, Avionics Branch, for engineering efforts to develop, validate and test the flight software algorithms designed to overcome the helium gas valve anomalies on the Orion European Service Module.

**Ronald A. Mullenax**, Strategic Solutions Division, for the development, implementation and continuous improvement of the Glenn Workforce Tools.

**Frank D. Quinn**, Fluid and Cryogenic Systems Branch, for outstanding technical contributions to help resolve the helium gas valve anomalies on the Orion European Service Module.

By Doreen B. Zudell

**Congratulations to these individuals for demonstrating Glenn's 7 Expected Behaviors and being a role model to us all!**

## Emergency and Inclement Weather Lines

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

## Connect With Glenn

