



## Glenn Hosts Headquarters Leaders in Science, Aeronautics

### **Chief Scientist Discusses Scientific Outreach**

A critical part of being NASA's chief scientist is communicating the relevance of NASA's long-term science and exploration roadmap to the nation. During her first visit to Glenn as chief scientist, March 28, Dr. Ellen Stofan discussed her goals for improving data accessibility and understanding with potential partners and the general public.

"NASA's scientific research portfolio literally spans the universe," Stofan said during her All Hands meeting at Lewis Field. "So we must be prepared to respond to the 'why's' and 'so what's' in terms of impact to the community—outward, inward and homeward."

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C-2014-1274

Photo by Marvin Smith

*In Glenn's Electric Propulsion Laboratory, Dr. Dan Herman, right, gives Dr. Stofan a tutorial on Glenn's solar electric technologies, essential to NASA's asteroid initiative. Glenn leadership and media accompanied Stofan on tour.*

## Hunting Ice Crystals Down Under

Depending on the altitude and weather conditions, in-flight ice formation in aircraft engines can be a concern year round. Glenn personnel were part of an international team that conducted 72 hours of flight research above the clouds in Darwin, Australia, to improve aviation safety.

Engineers and scientists from three NASA facilities and their North American partners supported the European Airbus-led High Altitude Ice Crystals (HAIC)/High Ice Water Content (HIWC) flight campaign from January to March 2014. The primary

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C-2014-1713

Photo by Bridget Caswell

### **Dr. Shin and Directors Talk Aeronautics**

Associate Administrator for Aeronautics Research Mission Directorate (ARMD) Dr. Jaiwon Shin and several of his program directors interacted with Glenn employees during a recent visit. Shin praised the center for its aeronautics contributions—past and present—to the nation. He challenged them to stay at the "top of the game." See story on page 2.

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# Dr. Shin's Visit Focused on Aeronautics Preeminence

During his April 10 visit to Lewis Field, Associate Administrator (AA) for Aeronautics Research Mission Directorate (ARMD) Dr. Jaiwon Shin's message was clear: "NASA is the global leader in aerospace research technology and we plan to stay there."

Shin, Deputy AA for ARMD Thomas Irvine and several ARMD program directors spent the day meeting with Glenn managers, interacting with employees and touring facilities. During the Town Hall meeting and panel discussion, they discussed the rapidly growing demand for new aircraft systems and NASA's ability to compete globally in this exploding market.

"We're not challenging ourselves because anything is broken," Shin explained. "We're doing this to make sure we [United States] remain the greatest in global [aeronautics] research and development. We need to lay the groundwork when we are at the top."

As a highlight to the visit, Shin and Glenn's Aeronautics Director Therese Griebel presented the prestigious 2013 ARMD Associate Administrator Awards to Glenn employees. *(Awards highlighted in box on right.)*

—By Doreen B. Zudell



C-2014-1732

Photos by Bridget Caswell



C-2014-1712



C-2014-1711

*Several ARMD directors visited Glenn to serve as panelists. Above, left to right: Griebel, with ARMD directors: Dr. John Cavolowsky, Jay Dryer, Michael Mastaler, Douglas Robn and Dr. Edgar Waggoner. Pictured far left: Technology and Innovation Group Award recipients. Pictured, left: Dr. Shin, Steele and Irvine.*

**Program and Mission Support Award:** Gynelle Steele, Small Business Innovation Research/Small Business Technology Transfer Portfolio

**Technology and Innovation Group Award:** High-Fidelity Tool Validation for Sonic Boom and Drag Prediction Team. Glenn employees honored as part of the Langley Research Center-led team

**Honorable Mention**

**Technology and Innovation Group Award:** Ceramic Matrix Composite Team, Team Lead: Dr. James DiCarlo

**Strategic Partnerships Award:** Christopher Hughes, Acoustics Branch

## Two Named to Leadership Roles

Lynda D. Glover has been selected as director for the Office of Diversity and Equal Opportunity (ODEO), effective March 23. She serves as Center Director Jim Free's principal advisor and advocate on matters concerning Glenn's equal opportunity policy and programs.

Glover previously served as the diversity program management specialist for ODEO. In her new position, Glover is responsible for leading and managing all phases of Glenn's Diversity and Equal Opportunity Program. This includes

promoting inclusive workplace practices and equal opportunity in employment; eliminating equal employment opportunity barriers and workplace conflicts; and providing reasonable accommodations to qualified individuals with disabilities.

Seth Harbaugh has been selected as the deputy director of Center Operations, effective April 6. He previously served as the deputy chief of Glenn's Logistics and Technical Information Division, managing a wide variety of institutional operations.



Glover



Harbaugh

Harbaugh joined NASA Glenn's Office of Protective Services in 2009 as the emergency management specialist. There he coordinated preparedness, response and recovery efforts related to emergency situations.



## Chief Scientist Visits

## News and Events

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She said NASA's spacecraft and technology enable us to do the amazing things we do. We look outward to explore planet formation and signs of life. Inward we analyze space science affects on the human biology. Homeward we measure the rate of change in vegetation, rainfall land use and climate to protect our planet.

"It's the people who innovate, discover, interpret the data and inspire," she stressed. "If we don't communicate in a way that makes our work accessible, we're really not doing a critical part of our job."

NASA's roadmap calls for extending the life of the International Space Station as a stable platform for Earth and space science research to blossom and expand our reach beyond low Earth orbit.

Following a tour of several facilities, Stofan met with media to discuss how the roadmap will impact the Glenn community.

Stofan's experience and familiarity with the agency has allowed her to quickly become acclimated to her new role. Her visit to Glenn marked a return to the Cleveland area and nearby childhood home in Oberlin. It also brought her back to the center where her father, Dr. Andrew Stofan, began his NASA career in 1958. He served as center director from 1982 to 1986.

Stofan noted that returning to Glenn was very moving. "You provide such a vital role for this agency—from aeronautics to power systems and across the board," she said. "I look forward to coming back."

—By S. Jenise Veris



C-2014-1255

Photo by Marvin Smith

*Dr. Stofan poses beside a portrait of her dad, Andrew Stofan, who served as center director from 1982 to 1986.*

## Hunting Ice Crystals

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goal of the ongoing campaign is to fly into weather that produces specific icing conditions so researchers can study the present characteristics.

Glenn supplied the iso-kinetic probe (IKP) that was mounted under the wing of a SAFIRE Falcon 20 research aircraft. The probe measures the total water content in clouds that have high concentrations of ice crystals in the vicinity of oceanic and continental thunderstorms.

"Data captured during the HAIC/HIWC campaign will help inform aviation regulatory agencies internationally and contribute to the development of NASA technologies and research conducted in Glenn's Propulsion Systems Laboratory (PSL). This will lead to a better understanding of ice crystal icing effects on engine operation," said Tom Ratvasky, a Glenn project scientist supporting the campaign.

During the Darwin campaign, Kurt Blankenship, deputy chief of Glenn's Aircraft Operations Office, had oversight for NASA safety and quality assurance. His knowledge of the HIWC

operational conditions, Australian Civil Aviation Safety Authority (CASA) flight regulations and Falcon 20 performance parameters was critical to establishing rapport between local air traffic control and aviation authorities. Ed Emery, also from Glenn's flight operations, participated in design reviews of the IKP and performed preflight and postflight checkouts on the IKP and other cloud physics instruments to ensure proper operation.

This research will improve aviation safety internationally through the development and utilization of technologies to detect and mitigate issues caused by ice crystal icing. Due to the importance of this effort, a follow-on to the Darwin HAIC/HIWC flight campaign is being planned for Costa Rica in the August 2014 timeframe.

*Above: Blankenship reviews flight plans with SAFIRE pilot. Right: Emery (red shirt) and Canadian partner Craig Davidson perform a preflight check on the IKP.*

More information on the HAIC-HIWC flight campaign and participants is available at [http://www.nasa.gov/aero/haic\\_campaign.html](http://www.nasa.gov/aero/haic_campaign.html).

—Compiled by S. Jenise Veris



Photos by Tom Ratvasky



# Glenn Celebrates the Earth



Photo by Mark Honing & Co. Photography

## Center Showcased Alternative Technologies

NASA Glenn partnered with the Earth Day Coalition and more than 270 exhibitors at EarthFest 2014, April 13, at the Cuyahoga County Fairgrounds. Glenn showcased sustainable alternative energy efforts in a virtual fuel cell interactive display; International Space Station solar panel technology; Stirling engine technology; solar electric propulsion for the Asteroid Redirect Mission; alternative fuel-powered vehicle fleet; and the Tri-C-Glenn GreenLab collaboration on renewable ecosystems. NASA volunteers included Dr. Bilal Bomani, Daniel Dessauer, Dr. Carolyn Mercer, Matt Myers, Susan Bernadette Puleo and Sandy Valenti. Pictured: Mercer with Tri-C students, left to right, Sydney Pickett, David Whitehead and Charade Osborne.



Photo by Jim Free

## Earth Day Selfie

The year 2014 is a big one for NASA Earth science. Five NASA missions designed to gather critical data about our home planet are launching to space this year. NASA is marking this big year for Earth science with a campaign called Earth Right Now. Part of the campaign included a special Earth Day activity, April 22. NASA asked people to step outside, take a selfie wherever they were on Earth, and post it to social media using the hashtag #GlobalSelfie. The @NASAGlenn Twitter account featured Glenn employees who work in Earth science for the #globalselfie campaign, including Center Director Jim Free (pictured at Lewis Field). Many more participated on their own personal twitter accounts.

## STEM Activities Help Girls Take Flight at CWRU



Photo by S. Jenise Veris

Glenn employees and area university students engaged more than 100 Girl Scouts in hands-on STEM (science, technology, engineering, and mathematics) activities at the "Girls Take Flight" event at Case Western Reserve University (CWRU), March 29. Scouts in grades 2 to 5 participated in 24 different activities with a special emphasis on air and space, including parachute design and testing (pictured). The event is part of an ongoing partnership between NASA and the Girl Scouts of North East Ohio, with CWRU as a key sponsor. Glenn volunteers for the event included: Dragos Dinca, Nancy Hall, Debbie Goodenow, Alan Hylton, Dawn Jenkins, Xuan Nguyen, Daniel Raible, Diana Santiago, Matthew Smith, Laura Steen, Dennis Stocker, Jenise Veris, Valerie Wiesner and Afroz Zaman.



Photo by David DeFelice

## Yuri's Night at Visitor Center

NASA Glenn's Visitor Center in the Great Lakes Science Center provided a backdrop for the annual Yuri's Night, April 12. Special guest former astronaut Gregory "Box" Johnson (pictured, center) judged several contests and participated in the "Are You Smarter Than an Astronaut" event. David DeFelice, Community and Media Relations Office, gave a talk on "Blockbuster Technology," a NASA perspective on sci-fi movies.



## Aero Leaders Explore Collaborations

Lt. Gen. C.D. Moore II, Air Force Life Cycle Management Center Commander, Wright Patterson Air Force Base (WPAFB); C. Douglas Ebersole, director, Aerospace Systems Directorate, Air Force Research Laboratory (AFRL) at WPAFB; and Ohio State Representative Rick Perales, co-chair of the Aerospace Caucus, visited Glenn, March 31. Center Director Jim Free presented an overview of the center's mission-related research and technology activities and the impact of past and current Air Force partnerships. The guests toured several facilities and met with subject matter experts regarding current and potential collaborations.

*Glenn's Jim Demers, right, briefs Gen. Moore, left, on MAMI-II (Minor Area Motion Imagery), a flight project with the AFRL.*



C-2014-1419

Photos by Marvin Smith



C-2014-1409

*Ebersole, left, in the 10- by 10-Foot Supersonic Wind Tunnel with Glenn's Paul Bartalotta.*

## Forms: They're Changing!

Need to ship an item, host an international visitor or conduct a hazard analysis for a safety permit? Fill out an electronic form. Glenn forms support hundreds of business processes across the center—but forms are changing.

### Forms Transition

On June 30, Glenn will be decommissioning its Forms Search Server, and all links to “C-xxx” forms will be broken. Glenn employees should immediately begin to access Glenn forms via the NASA Electronic Forms (NEF) website: <http://nef.nasa.gov>.

“Glenn forms on the NEF are named as GRC-xxx, replacing the C-xxx designation,” explained Glenn Forms Manager Dennis Dubyk, Logistics and Technical Information Division. “Therefore, if you have Web page content or documentation that currently links to a Glenn C-xxx form on the Glenn Forms Search Server, you need to redirect these links to the NEF.” Additionally, all references to the Glenn Forms Search Server should be removed.

After June 30, NASA forms, including Glenn forms, will be accessed in the

NEF (the agency's centralized forms solution). Hosting services for the NEF are managed by the NASA Enterprise Applications Competency Center and the Enterprise Service Desk provides user support.

“Using the NASA forms site rather than a local Glenn server eliminates redundancies and operating costs associated with duplicate services,” Dubyk said.

### New eForms Software

Forms software is changing too. NASA's current FileNet Desktop eForms application is no longer supported by the vendor (IBM), and does not run on the latest Mac Operating System. As a result, the agency is replacing the outdated application with the Adobe PDF format. All center forms are being recreated as Adobe LiveCycle PDF forms.

Once FileNet becomes unavailable, employees cannot open previously completed forms in the FileNet format (\*.ifm). In order for employees to preserve previously completed forms, the forms must be opened in FileNet and saved as a PDF file. This PDF will be read-only format. Employees should begin saving FileNet forms as PDF files,



Illustration by Lisa Liuzzo

including all attachments if their forms are records subject to NASA Records Retention Schedules (NPR 1441.1). Viewing and completing the PDF forms requires Adobe Reader (version 10 or later) to be installed, which is included in ACES standard load.

“There currently is no set date for decommissioning FileNet Desktop eForms,” Dubyk said. “However, once FileNet becomes unavailable, employees will be unable to open FileNet files.”

If you have questions regarding the decommissioning of the Glenn Forms Search Server or Adobe LiveCycle, please send them to [grc-forms@lists.nasa.gov](mailto:grc-forms@lists.nasa.gov).

For center forms design services, call 3-5788.

—By Doreen B. Zudell

# Eight Employees Earn FEB Wings of Excellence Award

The Cleveland Federal Executive Board (FEB) honored eight Glenn employees with a Wings of Excellence Award, May 2. The award recognizes employees from federal agencies across Northern Ohio for their outstanding government service and outreach to the community and/or nation.

Congratulations to the following Glenn honorees:

**Jacqueline Barbetta**, Center Operations Support Branch, for contributions in improving NASA accounting and procurement systems, including leading efforts in consolidating travel orders and purchase requisition business processes at Glenn; and for leading Glenn's successful 2014 Combined Federal Campaign, which included several special events.

**Michael W. Goin**, Office of Human Capital Management, for serving as director of the Cleveland Federal Executive Board since 2004. He successfully led several programs, some of which include the North Coast Combined Federal Campaign, Harvest for Hunger and the Cleveland Metropolitan School District Tutoring Program.

**Mark J. Hyatt**, Program and Project Assurance Division, for serving as an officer and supporting several fundraisers over the past 8 years, i.e., Help for Heroes, a local charity for homeless veterans; and leading other outreach activities for organizations such as Toys for Tots and Cub Scouts.

**James B. Jackson**, Audits and Assessments Office, for contributions to NASA's Safety and Mission Assurance



*Barbetta*



*Goin*



*Hyatt*



*Jackson*



*LaSalvia*



*Dr. Raible*



*Robinson*



*Surgenor*

Program through leadership of the Quality Audit, Assessment, and Review Program where he defined how NASA's quality requirements are audited for compliance; and his involvement as a leader and member of Glenn's Advisory Group for Native Americans.

**Robert LaSalvia**, Educational Programs Office, for spearheading NASA Education's first reimbursable interagency agreement with the U.S. Department of Education to pilot a series of engineering design challenges for middle-school students. The pilot addressed two of the five Administration's Five-Year STEM Education Strategic Plan goals.

**Dr. Daniel E. Raible**, Antenna and Optical Systems Branch, for his leadership in establishing the Integrated Radio and Optical Communications terminal, which spearheaded the advancement of optical communications from deep space to Earth; and for educational

outreach efforts aimed at inspiring students to excel in STEM areas.

**Calvin R. Robinson**, Information and Applications Office, for his contributions to collaborative software development and as a developer of open-source Multidisciplinary Design Analysis and Optimization framework; and for sharing software development skills through educational outreach for Explorer Post 631 and Young Astronaut Day.

**Angela D. Surgenor**, Educational Programs Office, for her roles as project manager and coordinator of the 2013 FIRST Buckeye Regional Robotics Competition and the 2013 Centaur Design Challenge created by Glenn; and for numerous other educational outreach efforts aimed at inspiring students to excel in STEM areas.

Photos by Barbara Breen, VHACLE

## Promotions



*Simonovich*

**Del R. Simonovich** has been selected as the deputy chief, Office of Protective Services. He brings a thorough background in and comprehensive knowledge of NASA security programs and operations with his 26 years at NASA Glenn. Simonovich is well versed in a variety of functions within the Office of Protective Services, and also has a network of professional contacts within the center, agency and external law enforcement.

## Retirements



*Bilardo Jr.*

**Vincent J. Bilardo Jr.**, Space Flight Systems Directorate, retired April 25, 2014, with 32 years of NASA service.



## More Than a Memory

Porter J. Perkins, 91, a 1980 retiree with 36 years of NACA/NASA service, died March 7. Perkins was an aerospace engineer and pioneer of icing research. Some of his many contributions include the icing rate meter, a tool for measuring the frequency and strength of icing during flight; a program to compile statistical data to define icing; and methods for insulating long-term cryogenic propellant storage tanks. He also co-authored a book highlighting 50 years of icing research at the center.

Richard J. Priem, 85, a 1982 retiree with 31 years of NASA service, died Dec. 25, 2013. Priem was renowned for helping

develop the F-1 engine for the Apollo Program. His advanced rocket combustion experience was critical to technical assessment on "rocket screaming," a phenomenon caused by strong resonant pressure waves, which can destroy a rocket engine in seconds. Priem was on the Basic Research Advisory Board, formed to promote, review, evaluate and guide research at the center.



Priem

Roy G. Stabe, 83, a 1990 retiree with 32 years of federal service, died Jan. 4. Stabe was a U.S. Air Force veteran, who served NASA for 28 years in the area of turbine engine design. He retired from the Aeropropulsion Facilities and Experiment Division. He supported the building and operation of the Small Engine Components Test Facility for developing fuel-efficient small gas turbines, and the Integrated High Performance Turbine Engine Technology initiative to double turbine engine propulsion capability.



C-2014-1829 Photo by Bridget Caswell

McDonald, left, and Richards.

## Welcome to the NASA Family

Two new student trainees reported for Orientation and the start to their NASA career on April 21. They are Candice McDonald, Office of Protective Services, and Bradley Richards, Durability and Protective Coatings Branch.

The *AeroSpace Frontiers* misidentified two new employees in last month's issue. Curtis Rimer and Wesley Johnson's names were accidentally switched under their photographs. The error was corrected in the online version. The editors apologize and welcome Rimer and Johnson again to the NASA family.

## Calendar

**IFPTE LOCAL 28, LESA MEETING:** LESA will hold its next membership meeting Wednesday, May 14, noon, Employee Center's Small Dining Room.

**RETIRED WOMEN'S LUNCHEON:** The NASA Retired Women's Lunch will be Thursday, May 15, 1 p.m. at Bucci's J Bella Restaurant, 12201 Pearl Rd., Strongsville. It's not too late to make your reservation. Call Gerry Ziemba, 330-273-4850.

**NASA-WIDE WALKING CHALLENGE:** Show your center pride and join the NASA-Wide Walking/Counting Steps Challenge. All NASA civil servant and support service contractors are invited to walk, run, skip or shuffle—and record your steps, May 18 through May 31.

### Emergency and Inclement Weather Lines

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

A trophy will be awarded to the center with the most participation. Visit <http://ohp.nasa.gov/health4life/> for details. POC: Glenn Fitness Center, 3-6313. Conversion charts are available to transfer workout activities into steps.

MEMORIAL DAY: MAY 26



**ASIAN PACIFIC AMERICAN OBSERVANCE:** The Asian Pacific American Heritage month event will be Thursday, May 29, from 1:30 to 3:30 p.m. in the Briefing Center. This year's theme is "Diverse Leadership + Expanding Opportunity: An Imperative For America."

**JUNE PUBLIC TOUR:** The next Saturday tour, June 7, will highlight the Flight Research Building (hangar). Tours are open to U.S. citizens and

lawful permanent residents. Space is limited and reservations are required for admission. To register, call 216-433-9653 or send an email to [sheila.d.reese@nasa.gov](mailto:sheila.d.reese@nasa.gov). For more information and a complete schedule of Glenn's tours, visit <http://www.nasa.gov/centers/glenn/events/tours.html>.

**NASA SPINOFF MAGAZINE:** The 2013 edition of *Spinoff* magazine is now available. This magazine documents the many practical uses of NASA technologies and their impact on Northeast Ohio, the State and across the nation. You can read about 10 of Glenn's contributions in this issue. Visit, <http://Spinoff.nasa.gov/> for the electronic version.

### Connect with Glenn



## National Aeronautics and Space Administration

### John H. Glenn Research Center at Lewis Field

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

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Read *AeroSpace Frontiers* online at <http://aerospacefrontiers.nasa.gov>

# Removal of Aging Bunkers Reduces Ecological Footprint

The Facilities Division (FD) is overseeing a deconstruction project to remove 28 storage bunkers at Plum Brook Station. Leveling the aging buildings addresses costly maintenance issues and reduces NASA's ecological footprint.

Formally called "magazine bunkers," the units were previously used by the Plum Brook Ordnance Works to secure munitions produced at the plant during World War II. The concrete shelters, buried partially underground, were part of the real estate purchased by NASA's predecessor, the National Advisory Committee for Aeronautics (NACA), in 1956. In the 1960s, Plum Brook reopened some of the structures to serve as storage units for inactive NASA records and other miscellaneous items.

"Removal of these structures, built in 1942, will help Glenn toward meeting Presidential mandates for infrastructure reduction and reduce the overall footprint by almost 55,000 square feet," affirmed Construction of Facilities Program Manager Christopher Williams, FD Program Management Office.

The center inspected all the bunkers a few years ago. Construction Project Manager Kevin Meredith, FANS/FD, said those most structurally sound underwent renovations so they could be used for safe storage, primarily records. The bunkers, sometimes called igloos, measure approximately 27 feet wide



Photo by Kevin Meredith



C-2009-1178

Photo by Marvin Smith



C-2013-179

Photo by Marvin Smith

*Top: A bulldozer levels an aging bunker. Above, left: Structurally sound bunkers can hold up to 2,300 boxes of records. Above, right: A front view of a bunker.*

by 65 feet deep. The bunkers can hold between 1,400 and 2,300 boxes of records, depending on how shelving is arranged.

Meredith said bunkers that showed the most deterioration during the inspection were earmarked for removal. After the structures are leveled, the concrete, steel and dirt would be recycled. Deconstruction is underway and will conclude this summer.

—By Doreen B. Zudell