



Administrator Reassures Stability at Agency and Glenn

Administrator Charlie Bolden and Deputy Administrator Dr. Dava Newman conducted an All Hands meeting, July 27, to update Glenn employees on the state of the agency. A more in-depth discussion on mission work followed during the NASA Advisory Council's public assembly, held July 28–29, at the Ohio Aerospace Institute (OAI).

Bolden reassured the audience that NASA is in good shape with a great budget. The agency received \$300 million more than President Obama requested for fiscal year 2016 and will likely spend at the same level under a continuing resolution for 2017.

"It doesn't mean that you're going to be able to do everything you used to do;

no one is. NASA is trying to evolve and build resiliency," he said. "NASA is more than human space flight and Glenn is involved in every aspect. You're woven into the fabric of NASA, so your future is incredibly bright."

Some highlights of mission directorate activities and prospects for the future included:

- The proposed 2017 Aeronautics budget includes funding for five X-planes (experimental models) over the next 10 years to help develop and validate technologies for more efficient, quieter and environmentally friendly aviation.

Continued on page 3

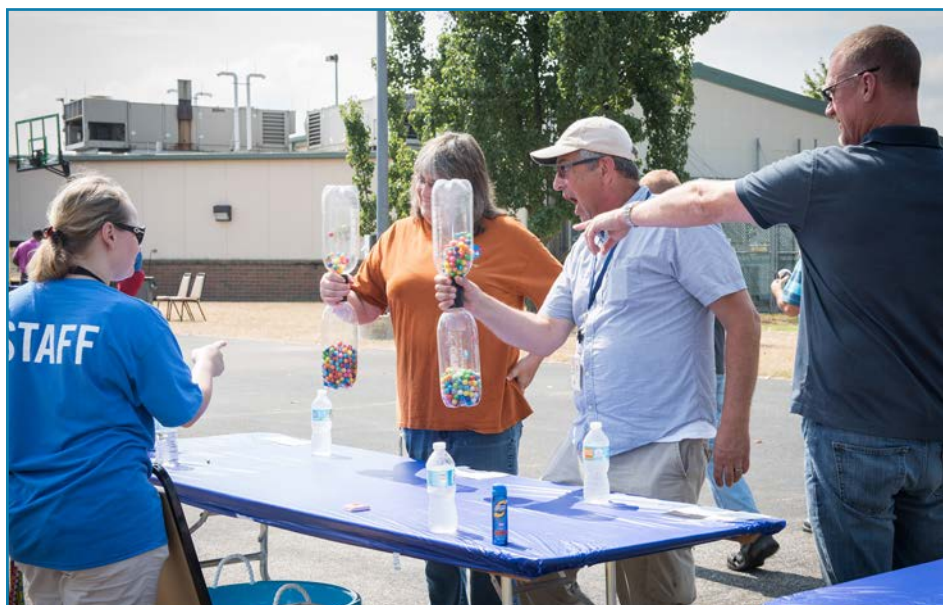


GRC-2016-C-05544

Photo by Rami Daud

Administrator Bolden and Deputy Administrator Dr. Newman took turns providing agency highlights during the All Hands.

Employees, Retirees Gather for Center Picnic



GRC-2016-C-05843

Photo by Jordan Salkin

Employees joined in on the fun during the 2016 Center Picnic at the Lewis Field Picnic Grounds, Aug. 10. Many retirees joined the activities after attending a retiree reunion in the morning at the MIC Auditorium. See page 5 for pictorial highlights.



Security Day Packs a Punch Against Crime

Do Your Part, Be Security Smart!

The Office of Protective Services hosted the center's first NASA Glenn Security Day, Aug. 2. The event raised awareness on security preparedness at work and at home.

Continued on page 8

In This Issue

Safety Culture Pride	2
Citizens Aide Research	2
OCIO Ingenuity Awarded	2
Tech Transfer Licenses	3
Picnic, Reunion Highlights	5
Developing Federal Leaders	6



Be Proud of Our Safety Culture

Thank you for participating in NASA's 2016 Safety Culture Survey. I am pleased to report that our center's participation increased by 65 percent over our last survey. Glenn received high ratings in all categories in the survey, which confirms that our safety culture is strong. Your valuable feedback showed that you appreciate the center efforts in Communication and in Leadership/Management Commitment. Many applauded our Egress Cleanup Initiative. Your comments acknowledged last year's efforts and asked for further enhancements. With your continued commitment to safety, we will reach the highest standard of safety culture at Glenn and across the agency.

A strong safety culture at NASA is vital to everything we do. It affects our missions, research and day-to-day activities, and it keeps safe our most valuable resource...our employees.

—Janet

Citizens Help NASA Track Lake Erie Algal Blooms

Toxic algal blooms continue to plague Lake Erie and other waterways again this year, which impacts drinking water, fishing and recreational activities.

In an effort to identify areas of concentrated cyanobacteria and warn residents about its presence in their neighborhood, Glenn's Dr. Rafat Ansari, senior scientist, has spearheaded a citizen science campaign to engage volunteer pilots to monitor water quality along Lake Erie's coastline and interior waterways.

To learn about this campaign, visit go.nasa.gov/29AbVCr.



GRC-2016-C-05810

Photo by Marvin Smith

Dr. Ansari (right) and pilot Terry Schubert use their aircraft to monitor algal blooms on Lake Erie as part of a citizen science initiative.

Center's Office of Chief Information Officer Recognized for Innovative Use of Technology

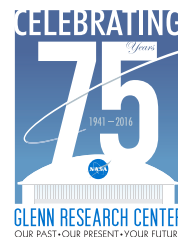
CIO.com recognized NASA Glenn as a winner of its 29th annual CIO 100 Awards program during its CIO 100 Symposium, Aug. 16. The CIO 100 awards honor organizations that have distinguished themselves by creating business value through the innovative use of technology. Specifically, the center was recognized for its Scientific Computing and

Visualization team, which made extensive use of existing gaming technology to create applications that would communicate NASA's research and enable greater advances by its scientists.



Now Available: Open House Photos

Thanks to the hard work and tireless efforts of several hundred Glenn staff members, Lewis Field and Plum Brook Station open houses were a great success!



To view a post-event summary with facts, figures, photos and positive feedback from these events, please click on the following internal URLs:

Lewis Field:

<http://events.grc.nasa.gov/OpenHouseVol/>

Plum Brook Station:

http://events.grc.nasa.gov/pbs_OpenHouseVol/

For *AeroSpace Frontiers* readers outside the gates, visit our Flickr sites:

Lewis Field:

<https://www.flickr.com/photos/nasa-glenn/albums/72157668414737832>

Plum Brook Station:

<https://www.flickr.com/photos/nasa-glenn/sets/72157669232457952>



Calling all Makers!

We're celebrating the maker movement at Glenn by introducing a new "Meet the Makers" web series. Inventors, designers, builders, technicians, engineers and tinkerers are invited to share their stories for a chance to be featured on Glenn's website. To share your story, or nominate a maker, send an email to Nikki.D.Welch@nasa.gov.

Administrator Reassures Stability at Agency and Glenn

Continued from page 1



GRC-2016-C-05537

Photo by Rami Daud

Students visiting during Take Our Children to Work Day were encouraged to participate in the Q&A at the All Hands.



GRC-2016-C-05445

Photo by Marvin Smith

Bolden and Dr. Newman join Center Director Dr. Kavandi and other members of the NASA Advisory Council that convened at the OAI.

- The Human Exploration Program is on the verge of putting humans on Mars. The agency will be working over the next 10 years in cislunar space to develop capabilities and technologies needed to travel deeper in space. NASA is building flexible systems into our new vehicles.

- NASA's Science Mission Directorate is answering important questions about the Earth's climate and observing and returning samples from other planets to help determine potential for habitation.

Speaking to her passion for the work in the Space Technology Mission Directorate, Newman stated that technology

and innovation is happening at Glenn. She cited examples of Glenn's ion propulsion and Solar Electric Propulsion (SEP) technologies, and innovative contributions to NASA in every plane, living in microgravity and life support, global exploration and unmanned aerial vehicles (UAVs), all of which point to how Glenn is well positioned for a bright future.

By S. Jenise Veris

Trending With Tech Transfer

Evaluation Licenses Seek Commercial Platforms



Chico, California-based Makel Engineering, Inc. (MEI), specializing in products related to chemical sensing and micro-electro-mechanical systems, will incorporate Glenn sensing technology into a commercial platform. Glenn licensed several technologies that apply to the measurement of core chemical species relevant to a range of commercial applications. One license was for a carbon dioxide sensor; a second license was for a suite of technologies enabling hydrogen and hydrocarbon sensing.

These hydrocarbon sensors have already been used in demonstration testing for in situ monitoring of engine emissions in an operating aircraft engine, but MEI plans to market them for industrial leak detection. With hydrocarbon leak detection becoming increasingly important in the production of natural gas, the use of natural gas vehicles, and the spread of natural gas refueling stations, this technology suite will prove invaluable as MEI continues to broaden its areas of expertise in chemical sensing.

Boulder, Colorado-based Special Aerospace Services, LLC (SAS), specializing in technology development and engineering services, will test the applicability of Glenn's catalytic microtube rocket ignitor with SAS's cutting-edge rocket engine design and development. The ignitor was originally part of the Propulsion and Cryogenic Advanced Development project, which sought to develop methane/oxygen technologies

to enable further exploration of the moon and Mars.

SAS will test Glenn's technology in the area of advanced manufacturing and propulsion (energetics) research. With clients such as United Launch Alliance, Sierra Nevada Corporation Space Systems and Lockheed Martin, SAS has enormous potential to shape the future of tactical engineering, including commercial human space flight.

If you want to learn more about licensing, or if you are working on a technology with potential applications beyond a NASA mission, contact Karen Bartos at grc-techtransfer@mail.nasa.gov.

Submitted by Glenn's Technology Transfer Office

Innovation Takes Flight

Glenn's John Oldham (center) and Carl Blaser (far right) helped NASA illuminate flight innovations for approximately 563,000 aero enthusiasts at EAA AirVenture 2016 in Oshkosh, Wisconsin. From July 25 to 31, Glenn staff supported the design and operations of NASA's extensive exhibit at the world's largest annual air show featuring the agency's strategic communications priorities, and elements of Glenn's 75th anniversary. Center Director Dr. Janet Kavandi spoke at several forums.



Photo by Carlos Gomez

Biomimicry: Innovation Looks to Nature

Rebecca Eagle-Malone, a University of Akron Ph.D. candidate in Biomimicry, explains the nature of an armadillo adapted to aerospace applications during the National Biomimicry Summit and Education Forum at the Ohio Aerospace Institute (OAI), Aug. 2-4. NASA Glenn, OAI and Great Lakes Biomimicry sponsored the summit, in collaboration with academia, industry and government agencies, to foster nature-inspired exploration on Earth and in space. For more information on NASA biomimicry research, visit www.nasa.gov/vibe/.



Photo by Varsha Vydyula

Kids on the Job

It was show and tell for parents during Take Our Kids to Work Day, July 27. Wes Sallee (top photo, seated) talked with his grandchildren and others about his job at Plum Brook Station. Also, the kids at Lewis Field met Center Director and Astronaut Janet Kavandi (bottom right). An ice cream social was a sweet ending to the day.



GRC-2016-C-05487

Photos by Jordan Salkin



GRC-2016-C-05331

Photo by Marvin Smith

Center Golf Outing— High Temps, Low Scores

Left to right: Kirk Seablom, retiree Jeff Swan, John Leone and Ken Fisher were among 245 golfers who showed off their drives and trick shots during the 7th Annual GRC Golf Outing at Mallard Creek Golf Course, July 22. Four-person scramble participants ended the day with a barbeque and talk about their birdies and bogeys.

2016 Center Picnic & Retiree Reunion

Glenn employees and retirees gathered at the Lewis Field Picnic Grounds, Aug. 10, to enjoy food, music, games and time together during the annual Center Picnic. Prior to the picnic, and in celebration of the center's 75th Anniversary, retirees gathered at the Mission Integration Center to look back on the past technological accomplishments and learn more about the center's current and future work. Nearly 1,500 attended the picnic, including 109 retirees.

To view more photos from the Center Picnic and Retiree Reunion, visit:

<http://events.grc.nasa.gov/centerpicnic/>

<http://events.grc.nasa.gov/75thReunion/Default.aspx>



Celebrating Four More CFCLI Graduates!

Four Glenn employees were part of the 2016 class of Cleveland Federal Community Leadership Institute (CFCLI) who graduated, June 28.

The 9-month program is designed to develop leaders committed to advancing cooperation among federal agencies in the Greater Cleveland area, while strengthening community partnerships. Completing a community service project, in one of five targeted areas, was a condition of graduation. Glenn graduates and their project include:

Lauren Brown contributed to the Yard Cleanup Day project targeting the senior citizen population of Fairport Harbor.



Pictured are NASA Glenn's 2016 graduates and center personnel who provided CFCLI support. They include, left to right: Ryan Brown, Nola Bland, Vicky Hagerman, Brian Motil, Lauren Brown, Mina Mankbadi, Janet Watkins, Melissa Holodnak, David Friedlander; Dimeta Hughes, Sally Saltzman, Bhim Singh, Lisa Hicks and Michael Goin.

David Friedlander and Mina Mankbadi contributed to a STEM education outreach project focused on an underserved population.

Melissa Holodnak contributed to A Showcase of Careers at John Marshall School of Civic and Business Leadership targeting at-risk youth.

By S. Jenise Veris

Awards

During a ceremony at the Orbital ATK facility, June 27, Astronaut James Kelly and NASA's deputy associate administrator for Exploration Systems Development Bill Hill presented a Space Flight Awareness (SFA) Honoree Award to Glenn's Matthew C. Bielozer. Bielozer was recognized for his leadership and contributions to the Propulsion Qualification Module, a critical test program to help validate the European Service Module.

Glenn members of the Evolvable Cryogenics (eCryo) Radio Frequency Mass Gauge (RFMG) Team celebrated a NASA SFA Team Award, July 13, during a ceremony, followed by a picnic. Center Director Dr. Janet Kavandi presented the



Astronaut Kelly, left, and Hill, right present the SFA award to Bielozer.

awards and applauded their example of working across other organizations and centers to develop hardware supporting the Goddard Space Flight Center-led Robotic Refueling Mission 3 project.



GRC-2016-C-04989

Photo by Marvin Smith

The Evolvable Cryogenics (eCryo) Radio Frequency Mass Gauge (RFMG) Team posed for a photo with Center Director Kavandi and Deputy Director Dr. Marla Perez-Davis following the ceremony.

The Federal Laboratory Consortium for Technology Transfer awarded Kim Dalglish-Miller, chief of Glenn's Technology Transfer Office, with its Regional Coordinator's Excellence Award. She was recognized for her leadership leading to numerous innovative developments in technology transfer that are also applicable to other member laboratories.



Dalglish-Miller and John Dement, FLC Midwest Regional coordinator.

Connect With Glenn



More Than a Memory



Crnobrajka

Mike "Scorp" Crnobrajka, 86, a 1982 NASA retiree with 31 years of government service, died May 20. Crnobrajka was an aeronautical engineer, who contributed to the design of the reentry systems for the Centaur rocket and Mercury, Gemini, Apollo and Space Shuttle programs, which kept astronauts safe during reentry into Earth's atmosphere. Crnobrajka was a U.S. Army veteran of the Korean Conflict and active member of AMVETS Post #47 in Lorain.

Manuel P. Narcizo Jr., 91, a 1974 NASA retiree with 26 years of government service, died May 28. Narcizo was a U.S. Air Force veteran of World War II and the Korean Conflict. He joined NASA in 1960 after serving at Wright-Patterson Air Force Base and the Holloman Air Force Missile Test Center in New Mexico. He served as a Plum Brook Station senior reactor operator and later served as a facility equipment mechanic in the Experiment Section of the Rocket Systems Service Branch.

Welcome to the NASA Family



GRC-2016-C-03357

Photos by Bridget Caswell

Glenn welcomed 18 new employees who reported for orientation on May 2. They include front, left to right: **Max F. Cbaiken**, Thermal Energy Conversion Branch; **Christine C. Staschiak**, Environmental Management Office; **Maria M. Wendling**, Procurement Division; **Amanda Darmosaputro**, Program Management and Planning Office; **Susanab R. Kowalewski**, Diagnostics and Electromagnetics Branch; Middle row: **Jason Jeng-Jye Ho**, Procurement Division; **Lauren McIntyre**, Information and Applications Office; **Diana Chan**, Engineering Management Branch; **Deborah Lockhart**, Office of Communications & External Relations; and **Samaun Nili**, Turbomachinery and Turboelectric Systems Branch; Back row: **Connor P. Pate**, Risk Management and IT Security Office; **Francisco J. Guzman**, Engine Combustion Branch; **Marc Abadie**, Exploration Systems Project Office; **Michael Marsden**, Architectures, Networks and System Integration Branch; **John R. Rice**, Data Systems Branch; **Noah Garrison**, Procurement Division; **Omar M. Gad**, Fluid Physics and Transport Processes Branch; and **Austin Wright**, Wind Tunnel and Propulsion Test Branch.



GRC-2016-C-03158

Glenn welcomed five new employees for orientation on May 31. They are pictured, left to right: **Geoffrey M. Andrews**, Propulsion Systems Analysis Branch; **Christine Schmid**, Mission Architecture and Analysis Branch; **Peter Psaras**, Chemical and Thermal Propulsion Systems Branch; **Kevin P. Hannigan**, Flight Software Branch; and **Aretba L. Carr**, Office of Diversity & Equal Opportunity.

Emergency and Inclement Weather Lines

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

Calendar

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

GLENN HALL OF FAME: The second class of inductees will be inducted into Glenn Research Center's Hall of Fame during a ceremony on Wednesday, Sept. 14, from 1 to 3 p.m. in the MIC Auditorium. All are welcome to attend. POC: Anne Mills, 3-8715

FARMERS MARKET: The Farmers Market will be returning to Glenn one last time this year. Mark your calendar for Tuesday, Sept. 27, from 10:30 a.m. to 1:30 p.m. Rain or shine...the market

will go on! Stop by the Picnic Grounds to check out the new vendors and some of your favorite vendors from the past! POC: Bianca Gatto, 3-6313

HISPANIC HERITAGE OBSERVANCE: Mark your calendar for Thursday, Sept. 29, for the National Hispanic Heritage Month Observance. Former astronaut and current Director of Johnson Space Center Dr. Ellen Ochoa is the keynote speaker. The event takes place at 1:30 p.m. in the MIC Auditorium, Bldg. 162. POC: Avis Hudson-Burnette, 3-6072

OCTOBER SIREN TESTING: The Emergency Management Office staff will

conduct an audible siren test at Lewis Field on Saturday, Oct. 1, focusing on the "Severe Thunderstorm" tone. On Wednesday, Oct. 5, the outdoor "voice" test will occur at building 39. POC: Allen Turner, 3-6826

SATURDAY TOURS AT LEWIS FIELD: Glenn offers the last 2016 free tour of its world-class facilities at Lewis Field on Oct. 8. Tour buses depart from the Main Gate every hour starting at 10 a.m. One-hour tours begin with a multimedia presentation in the Briefing Center Auditorium. The tour features Glenn's Ballistic Impact Facility. For more information, visit <http://www.nasa.gov/centers/glenn/events/tours.html>.

National Aeronautics and Space Administration

John H. Glenn Research Center at Lewis Field

21000 Brookpark Road
Cleveland, Ohio 44135

www.nasa.gov

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 via e-mail to the editor: doreen.b.zudell@nasa.gov or 216-433-5317.

October 2016 Calendar section deadline is Sept. 21, noon
News and feature stories require additional time

Editor: **Doreen B. Zudell**, ATS

Assistant Editor: **S. Jenise Veris**, ATS

Managing Editor: **Kelly R. DiFrancesco**



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

Glenn Security Day Packs a Punch

Continued from page 1

U.S. Deputy Fire Administrator, Dr. Denis Onieal, opened the session with a discussion on civil unrest and the future of emergency services. Local police then joined Glenn's Protective Services and Counterintelligence/Counterterrorism teams in leading interactive educational breakout sessions, which centered on espionage, dangerous items hidden in teens' rooms, an escape room that tested participants' NASA security knowledge and first responder training.

"The event was very successful and we look forward for the opportunity to host a Security Day annually; to provide a great security experience for the



GRC-2016-C-05753

Photo by Jordan Salkin

Dr. Onieal spoke with local first responders about professional development in fire and safety services.

employees and our community partners," said Christi Tomaro, chief, Office of Protective Services.

By Doreen B. Zudell



GRC-2016-C-05736

Photo by Rami Daud

Escape Room participants, Stefanie Hirt and John Wolter, successfully followed security-related clues to solve the mystery of the missing special agent.



GRC-2016-C-05710

Photo by Rami Daud

Do spies really exist? Glenn Security Specialist Darrell Williams talked about the dangers of espionage as it relates to U.S. college students and public servants.



GRC-2016-C-05704

Photo by Rami Daud

Dr. Onieal engaged an audience of employees, interns and local first responders.