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National Aeronautics and Space Administration



AeroSpace

Glenn's Shining



A New Year of Remembrance

Happy New Year and welcome back! I am looking forward to an exciting 2023 as we pursue our center priorities in aeronautics, space, mission support, and external partnerships. As we move forward, let us not forget those who made the ultimate sacrifice in the pursuit of exploration and discovery, including the crews of Apollo 1, Challenger, and Columbia. Let us honor them by integrating the tough lessons learned through their sacrifice in all that we do with a culture of safety and excellence.



AeroSpace Frontiers

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

Submit short articles and calendar items to the editor at doreen.b.zudell@nasa.gov.

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Celebrating Glenn's Beginnings and Beyond

"An Evening With the Stars," held Nov. 30 at Windows on the River on Cleveland's historic waterfront, provided a fitting forum to highlight this year's theme "From Beginning to Beyond." The event featured presentations by Glenn subject matter experts and a networking reception.

The Ohio Aerospace Institute (OAI) organized the event that attracted sponsors and guests from more than 50 companies, universities, and organizations. OAI President John Sankovic opened the program, followed by Glenn Center Director Dr. Jimmy Kenyon. He provided welcoming remarks and highlights of Glenn's technological efforts, including the Artemis I launch.

"It's great to see you all here tonight—especially so soon after making history with the launch of Artemis I. NASA's Glenn Research Center has been critical to the Artemis I mission from the very beginning," Kenyon said. "It's thanks to the support from our employees, our partnerships with government and international partners, American industry and academia, and our local community that we were able to achieve this."

Kenyon then introduced the presenters—the stars of the evening—and their topics.

Mills told the story of how the center came to be the thriving organization it is today.



NASA Glenn started from humble beginnings. Anne Mills, records manager and former history officer, discussed Glenn's history and told the story of how the center came to be the thriving organization it is today.

Often when you think of NASA, you imagine launching rockets, exploring distant planets, and colonizing the Moon. "Aeronautics" is the first "A" in NASA, and our work impacts you every time you fly. Mary Wadel, acting director of Technology Incubation and Innovation, revealed how some of our nation's most significant accomplishments in aeronautics have come from our center, which has created an incredible legacy.

NASA Glenn has a storied history of contributions to the agency's most successful space exploration missions, from Mercury and Apollo to Perseverance and Artemis. John Hamley, associate director of Facilities, Test, and Manufacturing, shared the history of space exploration at Glenn and explained how the road to the Moon has always gone through Ohio.

In his closing remarks, Kenyon said, "Tonight, you've seen merely a glimpse of the incredible past, present, and future of NASA Glenn. We are proud of where we've come from and eager to see where we're going-whether that be to the Moon, to Mars, or beyond."

By Doreen B. Zudell



GRC-2022-C-11098

Photo by Bridget Caswell Hamley shared the history of space exploration at Glenn and how the road to the Moon has always gone through Ohio.

On the cover:

Glenn's shining stars and An Evening With the Stars presenters, left to right: John Hamley. Anne Mills. and Mary Wadel at the scenic Windows on the River. Photo by Bridget Caswell GRC-2022-C-10862



GRC-2022-C-11056 Wadel revealed how some of our nation's most significant

Photo by Jef Janis accomplishments in aeronautics have come from Glenn.



Dr. Kenyon welcomed sponsors and guests.

Photo by Jef Janis

New Research Aircraft Comes Aboard

When researchers test communications technology for the national airspace, they will be using a newly acquired tool at NASA Glenn. A Pilatus PC-12 aircraft will take on a key role in the agency's investigation of how to manage the emerging advanced air mobility ecosystem.

After retiring two aging aircraft in the last year, Glenn's flight operations experts conducted a detailed study to find the perfect replacement.

"We needed an aircraft that had the ability to fly at high and low altitudes, was fuel efficient and had the cargo capacity to carry researchers and monitoring equipment," said James Demers, manager of Glenn's Flight Operations. "It also needed to take off and land in a variety of challenging airport situations."

The new PC-12 offers the versatility NASA Glenn needed. This 2008 turboprop has a pressurized cabin and can fly at altitudes from 4,000 to 30,000 feet for long flights at a cruising speed of 322 miles per hour. This allows it to go long distances for testing in many environments.

The PC-12 can land on short, unpaved runways if necessary. It is so versatile that the Royal Flying Doctor Service of Australia uses it in the punishing extremes of the Outback.

After NASA makes modifications to the interior to accommodate teams of researchers and their equipment, the aircraft will be used for a variety of aeronautic research missions.

Initially, the aircraft's primary research will evaluate commercial communications technologies that will allow highly automated transportation systems to operate and move passengers or cargo at lower altitudes within urban and suburban areas.

"We plan to evaluate the performance of a NASA partner prototype radio system, cellular services, and satellite technologies for critical information exchanges between aircraft and air traffic service providers during flight in an urban environment," said Rafael Apaza, associate project manager for the Air Traffic Management eXploration (ATM–X) project. "The PC–12 allows

The Pilatus PC–12 aircraft will help researchers evaluate communications systems for the emerging advanced air mobility ecosystem.



GRC-2022-C-05914 Photo by Bridget Caswell Demers, chief of flight operations at NASA Glenn, looks over the PC-12 aircraft when it arrives at the center.

us to put these technologies through good, rigorous tests in optimal locations and at altitudes where new urban vehicles will likely operate."

Apaza and his team will mount commercially manufactured antenna designs to the belly of the aircraft to evaluate configurations and data transfer rates and exchanges to radio ground systems.

"Flight research trials take concepts out of the lab and into the national airspace to help us make great strides toward a better understanding of communications technology for future flight," said Apaza.

This work supports the NASA Advanced Air Mobility plan to map out a safe, accessible, and affordable new air transportation system alongside industry and community partners and the Federal Aviation Administration. These new capabilities would allow passengers and cargo to travel on-demand in innovative, automated aircraft across town, between neighboring cities, or to other locations typically accessed today by car.

"Adding this new aircraft to our fleet will allow us to tackle a vast array of aeronautics research programs for NASA," said Demers. "We are excited to provide those opportunities for many years to come."

By Nancy Smith Kilkenny

Glenn Unveils PC–12 Aircraft

Local media received an up-close view of NASA Glenn's Pilatus PC–12 research aircraft during a briefing in the center's aircraft hangar on Nov. 22.

Glenn's Bryan Smith, director of Facilities, Test, and Manufacturing; Tim McCartney, Director of Aeronautics; James "JD" Demers, chief of Flight Operations; and Kurt Blankenship, research pilot who flies our new PC–12 aircraft, provided remarks and answered questions. Smith discussed the importance of modernizing Glenn's fleet, and McCartney delved into the Advanced Air Mobility mission. Demers and Blankenship spoke to the plane's specifications and research mission.

Reporters had the opportunity to step inside the PC-12 aircraft with Blankenship.



22-C-05490 Photo by Bridget Caswell Blankenship, left, highlighted the significance of the new research aircraft, while, left to right, Demers, McCartney, and Smith look on.

Congresswoman, Cleveland Mayor Visit

Glenn's Phil Abel and Erin Rezich briefed Congresswoman Shontel Brown and Mayor Justin Bibb on work in the Simulated Lunar Operations Laboratory (SLOPE), including lunar tire research, during a visit to NASA Glenn on Nov. 10. The tour and center overview provided them key information on Glenn's mission and technology. Pictured, left to right: Center Director Dr. Jimmy Kenyon, Rezich, Brown, Abel, and Bibb. Background: Glenn Protocol Officer Kathy Zona.



GRC 2022-C-09944

Photo by Marvin Smith

Charities and Chili Inspire Giving

Glenn employees learned about important causes from representatives of 14 local charitable organizations, while enjoying free chili during the Combined Federal Campaign's Agency Fair and Chili Cookoff in the MIC Auditorium on Nov. 9. Many employees also participated virtually, as the Agency Fair program was streamed to the workforce. Acting Deputy Director Dawn Schaible and Ohio CFC Regional Manager

Michelle Wooddell participated in the event. Fifteen employees entered the cookoff. First place went to Tyler Holdsworth's "Smokehouse Chili," and Anabel Falcon took second place with her "Out of Our League" recipe.

Visit https://nasa.sharepoint.com/sites/grc-cfc/ for a complete list of charities, the weekly cause, directorate representatives, keyworkers, and how to give.



GBC-2022-C-10030

Photos by Bridget Caswell Holdsworth, back left, and his Smokehouse Chili took first place among many tasty chili choices.



GRC-2022-C-10069

Schaible joined other employees who talked with representatives from local organizations.

Glenn Teams Earn NASA Awards

Congratulations to Glenn recipients of the prestigious NASA Blue Marble Awards. These awards, presented by the Environmental Management Division of NASA's Office of Strategic Infrastructure, recognize excellence in environmental and energy management in support of NASA's mission.

The Director's Award was presented to the Glenn-led Radioisotope Power Systems National Environmental Policy Act Improvement Team for improving processes resulting in significant cost and schedule savings to missions. The Excellence in Resilience or Climate Change Adaptation Award was presented to the Glenn Fleet Management and Transportation Team for the management of Glenn's sustainable fleet by strategically including underground infrastructure for electric vehicle charging stations during construction of facilities projects. This reduces the installation costs of charging stations as Glenn moves toward electrifying its fleet.



GRC-2022-CN-00060

Photo by NASA

Director's Award winners, left to right: Charlotte Bertrand; Denise Thaller; Tina Norwood; Glenn's June Zakrajsek (retired) and Bethany Eppig; and Dr. Joel Carney. Not pictured: Peter McCallum (AERO).



GRC-2022-CN-00059

Photo by NASA

Excellence in Resilience or Climate Change Adaptation Team Award winners, left to right: Charlotte Bertrand; Denise Thaller; Andrew Deenanauth, Glenn's Vehicle Fleet Operations Officer; and Dr. Joel Carney. A large team of employees across Center Operations, Facilities, Test and Manufacturing, and Armstrong Test Facility participated in this project.

Retirements

Richard Kurak, Office of Chief Information Officer, retired Dec. 30, 2022, with 38 ½ years of NASA service.

Heidi D. Shaw, Management Support and Integration Office, retired Dec. 2, 2022, with 43 years of NASA service.

Mark A. Woodling, Facility Project Management Branch, retired Nov. 3, 2022, with 41 years of NASA service.

TREMEN



Kurak





Shaw

Woodling Look for more retirements in

the February AeroSpace Frontiers!

CELEBRATING THE HOLIDAYS

Glenn's MIC Auditorium transformed into Lew-ville on Dec. 12, packed with holiday music, cheer, and more during the 2022 Center Holiday Gathering. The event was hosted by the Office of the Director and sponsored by the NASA Glenn Exchange.







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