



AeroSpace FRONTIERS

VOLUME 20 • ISSUE 11 • NOVEMBER 2018

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Future Gateway**

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Dialogue on Risk

It is well known that human spaceflight is a risky business, and this is a sentiment often shared by our experienced shuttle executives and managers. As we plan the Gateway vehicle, exploration missions, nonconventional aeronautical systems and challenging institutional projects, it is critical that we pause to remind ourselves of those lessons learned and how mission success depends on our ability to accurately identify, communicate and accept the residual risks as an informed decision process. Glenn's senior leaders recently engaged in a discussion on risk management at a retreat, and we ask for your engagement to effectively incorporate risk management into the planning and development of our missions.

Our success relies on the integrity of a robust risk management process.

James

AeroSpace Frontiers

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

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AN EVENING WITH THE Stars



On the Cover:

During Glenn's Evening With the Stars event, Administrator Jim Bridenstine shared his excitement in NASA returning to the Moon as a proving ground to Mars.

Photo by Marvin Smith
GRC-2018-C-07237



GRC-2018-C-07028

Photo by Rami Daud

Bridenstine and Dr. Kavandi pose by the NASA insignia at the Cleveland Rocks exhibit outside the Rock & Roll Hall of Fame.



GRC-2018-C-07220

Photo by Bridget Caswell

Dr. Kavandi addresses the guests amid the dazzling Rock & Roll Hall of Fame.

Evening With the Stars:

Building the Gateway to NASA's Future

NASA Glenn's "An Evening With the Stars (EWTS)" program, held at the Rock & Roll Hall of Fame in Cleveland on Sept. 18, was a hit! The event featured presentations by Glenn researchers and a networking reception in a venue that, like NASA, seeks to engage, teach and inspire.

For the fifth year in a row, the Ohio Aerospace Institute (OAI) coordinated sponsorship for the event that attracted sponsors and guests from more than 25 companies, universities and organizations. Dr. Dennis Irwin, OAI Board of Trustees, opened the program by acknowledging Glenn as a research asset to the community and the nation.

Center Director Dr. Janet Kavandi thanked OAI and the sponsors for their support with EWTS, which raises the center's visibility throughout Northeast Ohio. In light of NASA's 60th anniversary year, Kavandi reflected on the accomplishments of the past and goals for the future. She talked about the agency's mission to return to the Moon and then onto Mars, and affirmed Glenn's role in the journey.

"Our highly technical staff and world-class facilities will draw upon decades of space systems development and testing experience to ensure mission success," she said.

In Cleveland for his first official visit as NASA Administrator, Jim Bridenstine expressed his excitement for all he had seen thus far on his visit. He echoed Kavandi's comments on NASA's mission to return to the Moon and talked about the importance of the Lunar Gateway.

"The Moon is our proving ground to get to Mars, and NASA Glenn and Plum Brook Station are critical to accomplish this objective," he said.

Kavandi then introduced three of Glenn's rising stars—Dr. Erin Reed, Carl Sandifer and Ashlie Flegel. These presenters captivated the audience with details on the topics of Plum Brook Station, radioisotope power systems and icing research.

By Doreen B. Zudell

Dr. Erin Reed, Thermal Vacuum Test engineer. Reed walked the audience through our world-class facilities at Glenn's Plum Brook Station. She illustrated the importance of full-scale testing and how we support a variety of NASA and industry programs in the fields of aeronautics and space through simulation of high altitude and in-space environments.

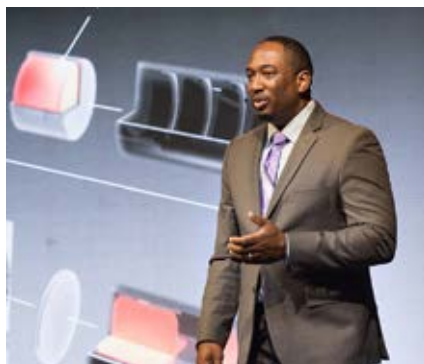
Carl Sandifer II, Radioisotope Power Systems Nuclear Fuels and Fundamental Research manager. Sandifer outlined how Glenn is advancing a broad portfolio of cutting-edge solar and radioisotope power generation systems. He explained how these systems work together to ensure that our future exploration missions have the plentiful, reliable power required to be successful.

Ashlie Flegel, Engine Icing technical lead in the Advanced Air Transport Technology Project. Flegel explained how we "Freeze to Please" at NASA Glenn. She explained how the icing team's work is advancing our understanding of aircraft engine and airframe icing, which will improve how we model, detect and prevent icing on aircraft.



GRC-2018-C-07260

Dr. Reed presents on Plum Brook Station.



GRC-2018-C-07280

Sandifer presents on radioisotope power generation systems.



GRC-2018-C-07308

Photos by Marvin Smith

Flegel presents on icing research.



2018 NASA Agency Honor and Center Awards



Beltran



Button



Harbaugh



Spicer



Centeno-Gómez



Arida



Hagerman



Hill



Kinkelaar



Klem



Mehl



Palac



Ponyik



Rivera



Walker



Watkins

HONOR AWARDS

OUTSTANDING LEADERSHIP MEDAL

Luis R. Beltran
Robert M. Button
Seth A. Harbaugh
Thomas A. Spicer
John E. Zuzek*

EQUAL EMPLOYMENT OPPORTUNITY MEDAL

Diana I. Centeno-Gómez

EXCEPTIONAL SERVICE MEDAL

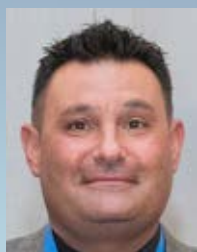
Phillip B. Abel*
Wade T. Arida
Vicki L. Hagerman
Gerald M. Hill
Michael J. Kinkelaar
Mark D. Klem
Craig I. Mehl
Donald T. Palac
Joseph G. Ponyik
Osvaldo Rivera
James W. Roeder*
Darlene S. Walker
Janet L. Watkins

*Not in attendance



WE HAVE PLACES TO GO.

More than 100 Glenn staff members earned awards for their exemplary accomplishments in science, engineering, technology, leadership and administrative services during the 2018 NASA Honor and Center Awards Ceremony, Sept. 24. David D. McBride, director of NASA's Armstrong Flight Research Center, assisted in awarding the medals and certificates.

**Doza****Hritz****Ogonek****Sprouse****Szabo****Arend****Jansen****Johnson****Smith****Stauber****Wanhainen****Yuko****Dyke****Dyson****Evans****Plachta****Tigelaar***McBride with Center Director Dr. Janet Kavandi.*

EXCEPTIONAL PUBLIC SERVICE MEDAL

Douglas O. Doza
Christopher E. Fulton*
James J. Hritz
Joseph A. Ogonek
Tracy A. Sprouse
Dean A. Szabo

EXCEPTIONAL ACHIEVEMENT MEDAL

David J. Arend
Ralph H. Jansen
Kimberly A. Johnson
Richard S. Kurak*
Lynn N. Smith
Laurel J. Stauber
Joyce S. Wanhainen
James R. Yuko

EXCEPTIONAL PUBLIC ACHIEVEMENT MEDAL

Michael D. Dyke

EXCEPTIONAL ENGINEERING ACHIEVEMENT MEDAL

Rodger W. Dyson
Richard K. Evans
David W. Plachta

EXCEPTIONAL SCIENTIFIC ACHIEVEMENT MEDAL

Dean M. Tigelaar

*Not in attendance



Blankson



Ellis



Halbig



Clevenger

EXCEPTIONAL TECHNOLOGY ACHIEVEMENT MEDAL

Isaiah M. Blankson
David L. Ellis
Michael C. Halbig
Richard C. Reinhart*



Biaggi-Labiosa



Bozak



Cooper



Flegel

EXCEPTIONAL ADMINISTRATIVE ACHIEVEMENT MEDAL

Debra K. Clevenger

EARLY CAREER ACHIEVEMENT MEDAL

Azlin Biaggi-Labiosa
John O. Bobanga*
Richard F. Bozak
Douglas A. Cooper
Ashlie B. Flegel
Eric T. Hartman
Logan J. Larson
Taylor N. Lewis
José A. Lombay-González
Leah M. Nakley
Haley A. Proszek
Francisco Solá-López



Hartman



Larson



Lewis



Lombay-González



Nakley



Proszek



Solá-López



Hubbard

EARLY CAREER PUBLIC ACHIEVEMENT MEDAL

Erin P. Hubbard
Laura-Cheri E. King-Steen
Monica N. Willbond



King-Steen



Willbond



Buchar



Chelmins

SILVER ACHIEVEMENT MEDAL (INDIVIDUAL)

Gregory T. Buchar
David T. Chelmins
Vanessa F. Easterling
Michael A. Evans*
Dale A. Hopkins
Dongwon Lee
Adabelle Narvaez-Legeza



Easterling



Hopkins



Lee



Narvaez-Legeza

*Not in attendance

**Quintile****Rakic****Roche****Bynum****Forman****Harpster****Palac****Rivera****Thomas****Micham**

Citations are reproduced from the 2018 Honor Awards Program. Photos by Marvin Smith.



Suzanne M. Quintile
Desa Rakic
Joseph M. Roche

SILVER ACHIEVEMENT MEDAL—GROUP

Full-Scale Exercise Design
and Planning Team

Glenn Engineering and
Research Support (GEARS)
Source Evaluation
Board (SEB)

Glenn Hologram Team

Graphics and Visualization
Outreach Team

Magnetic Materials
Development Team

Orion Launch Abort System
(LAS) Ogive Hatch Test Team

Space Communications
and Navigation (SCaN)
Testbed Experiments and
Operations Team

Solar Electric Propulsion
(SEP) Testbed Team

Turbulent Heat Flux (THX)
Test and Analysis Team

GROUP ACHIEVEMENT AWARD

Autonomous
Power Control Team

Combustion Science Team

DGEN380 Aeropropulsion
Research Turbofan Team

Exercise
Countermeasures Team

Glenn Scientific and Technical
Information (STI) Team

Glenn Website Improvement
Project Team

Kilopower Project Team

Lead Assessment
Program

Multi-User Droplet
Combustion Apparatus
(MDCA) Operations Team

NASA Electric Aircraft
Testbed (NEAT) Team

NASA's Executive Safety
Leadership Program Team

Quiet SuperSonic
Technology (QueSST) Team

Revolutionary Vertical Lift
Technology Team

Total Eclipse Events Team

FORTY-YEAR SERVICE AWARD

Carmela Bynum

Cynthia D. Forman

Gary E. Gorecki*

George R. Harpster

Heriberto M. Medina*

Donald T. Palac

Osvaldo Rivera

Denise L. Ryant*

Robin H. Strohacker*

Queito P. Thomas

Nicholas C. Varaljay*

FORTY-FIVE-YEAR SERVICE AWARD

Michael A. Micham

FIFTY-YEAR SERVICE AWARD

Mack G. Thomas*

FIFTY-FIVE-YEAR SERVICE AWARD

Albert J. Juhasz*

Peter M. Sockol*

*Not in attendance



Steven V. Szabo Engineering Excellence Award



Craftsmanship Award—Assembly and Build-Up Technologies



Craftsmanship Award—Assembly and Build-Up Technologies

CENTER AWARDS

ABE SILVERSTEIN MEDAL

Othmane Benafan

STEVEN V. SZABO ENGINEERING EXCELLENCE AWARD

Orion Firing Pyrotechnic Bolt Preload Loss
Investigation and Redesign Team

Christopher Dellacorte

Richard A. Manco

Thomas W. Goodnight

Daniel Rakes

Samuel A. Howard

Linda H. Yoon

Kevin E. Konno

CRAFTSMANSHIP AWARD

Assembly and Build-Up Technologies

Hollow Cathode Fabrication and
Assembly Team

Kevin A. McCormick

Michael R. Pastel

Assembly and Build-Up Technologies

Low-Speed Axial Compressor Build-Up Team

Thomas A. Bollinger

Joseph J. Hujo

Michael Perez

Manufacturing Technologies

Multi-Probe Traversing System (MPTS) Team

Brian A. Brandenburg

David Cotton

Derick L. Espenschied

Joseph F. Kerka

Robert S. Tomsic

2017 DISTINGUISHED PUBLICATION AWARD

Advanced Noise Abatement Procedures
for a Supersonic Business Jet

Jeffrey J. Berton

Scott M. Jones

Jonathan A. Seidel

Dennis L. Huff

**Not in attendance*



Benafan



Lacy



Havenhill



Turner



Flowers



Wiener



2017 Distinguished Publication Award



Photos by Marvin Smith

Safety Award—ACF

DIVERSITY LEADERSHIP AWARD

Dovie E. Lacy

SAFETY AWARD (CIVIL SERVANT)

Maria Theresa A. Havenhill

SAFETY AWARD

Emergency Management Specialists Team

Brian Laney*

Allen R. Turner

Aerospace Communications Facility (ACF)
Hazards Analysis Team

Jeffrey A. Chambers	Christopher J. Mong
James M. Downey	Ryan J. Munro
Michael D. Dyke	Jennifer M. Nappier
Timothy J. Fiorilli	Marie T. Piasecki
Gregory P. Frederick	Jeffrey T. Reilly
James J. Hritz	Robert R. Romanofsky
Joyce A. Jordan	Mordecai Scheckter
Evan J. Katz	Kevin J. Stiles
Kevin M. Lambert	Sarah A. Tedder
Elizabeth A. McQuaid	Larry Verdier
Félix A. Miranda	Colman M. Zsiros

SUPERVISOR AWARD

Gwendolyn D. Flowers

SUPPORT ASSISTANT/CLERICAL AWARD

Leslie A. Wiener

GRC SMALL BUSINESS PRIME CONTRACTOR OF THE YEAR

Peerless Technologies Corporation

To view the 2018 Honor and Center Awards
Ceremony booklet with award citations
and team members, visit

<https://events.grc.nasa.gov/honorawards/>

*Not in attendance

The Moon is a Proving Ground for Mars

New Administrator Visits, Focuses on Vision for the Space Agency

During his first official visit to Northeast Ohio and NASA Glenn, Administrator Jim Bridenstine emphasized sustainability when he described the United States' effort to return to the Moon. "This time we're not going to leave flags and footprints," he said. "We're going to build an architecture to go back and forth, and every piece of the architecture needs to be reusable."



During his Town Hall with Glenn employees, Administrator Bridenstine shared his enthusiasm for establishing an orbiting outpost on the Moon.



Lance Foster, front left, describes to Bridenstine and others on tour how researchers mount models into the 10- by 10-Foot Supersonic Wind Tunnel.



Brittany Wilkewitz briefs Bridenstine on the capabilities of the thermal vacuum chamber within the Space Environments Complex at Plum Brook Station.

During his Town Hall meeting with Glenn employees on Sept. 19, Bridenstine said his priority is implementing the president's new vision for the space agency. That vision includes space policy directives, with the first directive targeting the Moon followed by missions to Mars.

The proposed architecture, known as the lunar gateway, is an orbiting outpost that will serve as the staging area for the agency's next phase of exploration. Powered by the propulsion and power element developed at NASA Glenn, the gateway will open up human and robotic exploration and breakthrough science on the Moon and in deep space. The gateway will be developed, serviced and utilized in collaboration with commercial and international partners.

During the Town Hall, he also touched briefly on Space Policy Directives 2 and 3. Space Policy Directive 2 covers streamlining regulations on commercial use of space and Space Policy Directive 3 centers on national space traffic management. He concluded with several questions from the audience and through an internet-based question tool.

Bridenstine called his 2-day visit to the Cleveland area "a fantastic experience." He toured test facilities at Plum Brook Station and Lewis Field, met with local leaders at the Great Lakes Science Center and toured the Visitor Center there. He also attended Glenn's Evening With the Stars reception at the Rock & Roll Hall of Fame and Museum (see article on page 3).

"There's a bright future for NASA Glenn," Bridenstine said, during a news conference with local media in the Electric Propulsion Laboratory at Lewis Field. "NASA Glenn is advancing some of the president's most critical policies."

To view more photos of Administrator Bridenstine's visit, go to Glenn's Flickr page at <https://www.flickr.com/photos/nasaglenn/>.

By Doreen B. Zudell

Glenn's 2018 Holiday Gathering

Tuesday, Dec. 4, from 2 to 3:30 p.m.

MIC Auditorium

Watch *Today@Glenn* for details!

RETIREMENTS



Meredith

Sin-Chung Chang, Inlets and Nozzles Branch, Propulsion Division, retired Sept. 30, 2018, with 39 years of service.

Antoinette M. Cosari, Human Capital Management and Consulting Division, Office of Human Capital Management, retired Sept. 29, 2018, with 31 years of service.

Roger D. Meredith, Smart Sensing and Electronics Systems Branch, Communications and Intelligent Systems Division, retired Aug. 3, 2018, with 35 years of service.

MORE THAN A MEMORY



Esgar

Jack B. Esgar, 97, a 1980 retiree with over 35 years of NASA service, died Sept. 11. A former Director of Engineering Services, Esgar earned the agency's Exceptional Service Medal for his technical skill and major contributions to the technology of gas turbine engines, particularly in the areas of turbine cooling, full-scale engine behavior, low-emission combustors, global atmosphere air sampling, plug nozzles and advanced instrumentation. He held several patents. His wife, Genevieve, also a NASA retiree, survives him.



LaPlant

Gerald "Jerry" M. LaPlant, 80, a 1994 retiree with 32 years of NASA service, died Sept. 19. LaPlant served 3 years in the U.S. Navy as an aircraft mechanic prior to joining the NASA workforce. He thrived in his career working in the Test Installations Division where he served on various projects/programs as a machinist, model maker and research laboratory mechanic. He earned a 1991 Group Achievement award as a member of the Lewis Advanced Concentrator R&D Lab Team.



Nussle

Ralph Nussle, 85, a 1994 retiree with 33 years of NASA service, died Sept. 9. As the Zero-G project manager, Nussle oversaw flight testing of combustion research experiments using NASA's Learjet in preparation for future shuttle research on the effects of weightlessness on flammability of various gases. He later redirected his efforts with the Advanced Gas Turbine Project team, funded by the Department of Energy, developing fuel-efficient high-temperature turbine alternative engines for automobiles. Nussle was a U.S. Navy veteran.

NASA RETIRED WOMEN'S LUNCHEON

The next luncheon is Thursday, Nov. 15, at 1 p.m., at Square 22 Restaurant, 13485 Pearl Road, Strongsville, Ohio. Please reserve your place by calling Gerry Ziemba, 330-273-4850 or email gto64gerry@yahoo.com

OPEN SEASON HEALTH FAIR

The National Active and Retired Federal Employees (NARFE) Chapter 470 is sponsoring an Open Season Health Fair on Friday, Nov. 16. It will be held at the Fairview Park Gemini Center, Oak Room, 21225 Lorain Road, Fairview Park, from 1 to 3 p.m. All current and retired federal employees are invited to attend.

GSEL MOBILE LIBRARIAN

The Glenn Science and Engineering Library (GSEL) Mobile Librarian will be visiting building 110 from Nov. 27 to Dec. 6; and building 162 from Dec. 11 to 20. 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 an audible siren test on the "emergency condition" tone on Saturday, Dec. 1, at Lewis Field. An outdoor mass notification "voice" test will be conducted at buildings 100 and 302 on Wednesday, Dec. 5.

POC: Allen Turner, 3-6826

IFPTE LOCAL 28, LESA MEETING

LESA will hold its next membership meeting, Wednesday, Dec. 12, noon, in the Glenn Employee Center's Small Dining Room.

CORRECTION: Richard "Dick" Woollett, highlighted in the September issue of *AeroSpace Frontiers*, served several terms as **president** of the Lewis Engineers and Scientists Association (LESA) prior to retiring in 1992. He continued his support to Glenn as a contractor through the LESA union for 20 years.

Deadline for next calendar section is **Nov. 19, noon**. News and feature stories require additional time.

National Aeronautics and
Space Administration

John H. Glenn Research Center

Lewis Field

21000 Brookpark Road
Cleveland, Ohio 44135

Plum Brook Station

3597 E. Scheid Road
Sandusky, Ohio 44870

www.nasa.gov

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



Glenn Icing Technology 2018 Software of the Year Runner-Up

Air vehicle icing is a dangerous meteorological phenomenon in which ice can accrete on the airframe or inside the engine of an aircraft. This ice buildup can lead to loss of performance, control and/or power of the aircraft, posing a serious safety threat.

The runner-up in NASA's 2018 Software of the Year (SOY) Award competition, LEWICE3D, is a Computational Fluid Dynamics (CFD) post-processor developed at NASA Glenn that can integrate with a wide variety of commercial or in-house CFD software. It simulates where and how water drops and ice crystals of varying sizes will impact external aircraft surfaces or navigate into the engine core.

In addition, the software simulates how the liquid water will run back and freeze on the vehicle surfaces, resulting in predictions of the ice shape itself. One of the key strengths of LEWICE3D is that it is one of the most publicly validated, ice-accretion prediction tools available. Most U.S. airframe manufacturers and many original equipment manufacturers have requested LEWICE3D for use in design and certification.

This software was developed by Colin Bidwell (deceased). Special thanks is given to Christopher Porter, the current point of contact for LEWICE3D, for representing the software during the SOY Award application process on behalf of Colin Bidwell.

LEWICE3D is available for request online via the NASA Software Catalog:
<https://software.nasa.gov>.



2018 Combined Federal Campaign Now Through Jan. 11, 2019

Agency Fair, Nov. 14, Cafeteria Upper Level—games, vendors and more!

To donate, visit ohiocfc.org.

Emergency and Inclement Weather Lines

Lewis Field: 216-433-9328 (WEAT)

Plum Brook Station: 419-621-3333

Connect With Glenn

