



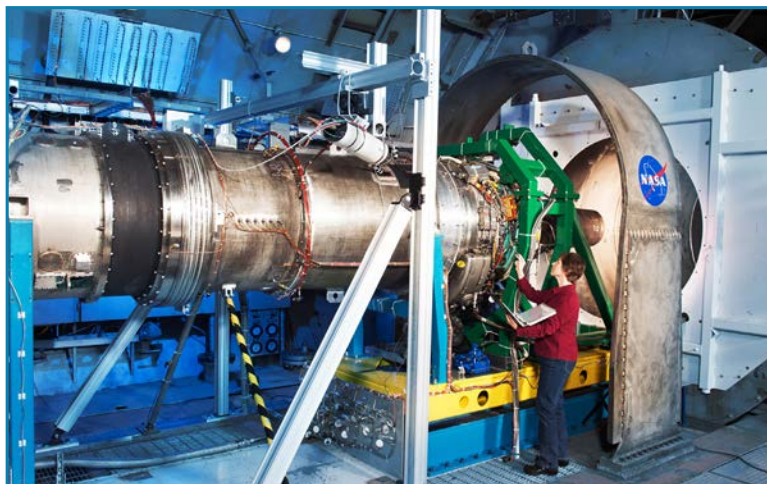
## Year-End Gathering Offers Cheers and Accolades

On Dec. 11, Center Director Jim Free, his leadership team and employees gathered to hear center accomplishments for the past year and enjoy the start of some holiday cheer. The NASA Glenn 2013 Centerwide Holiday Gathering was held in the Briefing Center at Lewis Field and broadcast live to Plum Brook Station.

In his remarks, Free thanked center employees for their hard work and commitment over the past year. He said their efforts enabled the center's many successes, despite some external challenges, such as budget uncertainty

Continued on page 3

*Pictured right: One of the notable accomplishments highlighted by Free was the first ever ground test of an altitude engine icing capability in the Propulsion Systems Laboratory (PSL). Pictured is Dr. Judith Van Zante inside the PSL test cell.*



C-2013-419

Photo by Bridget Caswell

## Next Round of "Adopt a City" Companies Announced

In early December, the City of Cleveland, Cuyahoga County and the Manufacturing



C-2013-5745

Photo by Marv Smith

*Left to right: Paul Bartolotta, Deputy Director Greg Robinson, Garnett Meador, senior vice president of Mace, and Associate Director Janet Watkins discuss technical issues at the event.*

Advocacy & Growth Network (MAGNET) announced the next round of small and medium size manufacturers that will receive no-cost technical expertise from NASA subject matter experts (SME).

Under this effort, NASA is committed to providing 40 hours of expert assistance. The SMEs will help companies solve challenges they are experiencing with one of their new or existing products.

The manufacturers selected by an independent panel of judges to receive NASA's technical assistance and be eligible for the City and County loans are: AISher APM, LLC of Cleveland • Mace Security International Inc. of Cleveland

• MegaJoule Storage Inc. of Cleveland • MesoCoat Inc. of Euclid • Skysun, LLC of Bay Village • Sterionics Inc. of Cleveland.

This joint initiative grew out of President Obama's "Strong Cities, Strong Communities," an urban revitalization initiative, which delivers tailored technical assistance to cities through federal inter-agency/community solution teams, to support local priorities and promote economic competitiveness.

Last year, Glenn's SMEs helped eight manufacturers solve technical challenges. For more details on the initiative, read page 8, August 2013 *AeroSpace Frontiers*.

—By Doreen B. Zudell

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## Dr. Whitlow Receives Retirement Tribute

Center Director Jim Free gave welcoming remarks and Director of Facilities and Test Directorate Dr. Rickey Shyne served as Master of Ceremonies during an appreciation event, Dec. 2, to recognize Dr. Woodrow Whitlow Jr.'s 34 years of NASA service. Whitlow retired as NASA's Associate Administrator for Mission Support Directorate, Sept. 10.

Continued on page 2

# GRC Connections Highlights New Business Initiative

The New Business Appreciation and Awareness Event, held at the Briefing Center, Nov. 21, featured key speakers and interactive activities that celebrated NASA Glenn's accomplishments in the area of new business.

Hosted by GRC Connections in coordination with NASA FIRST (Foundations of Influence, Relationships, Success, and Teamwork), the event evolved from the FIRST class's project to raise awareness of the Glenn New Business Initiative and energize the workforce to pursue new business opportunities and relationships with external partners. The project also led to the creation of an internal website called "New Business Central," where new business processes were documented during this project.

Center Director Jim Free was among the forum speakers. Via live audio stream, Jeff Rolf of Parker Hannifin, Cleveland, Ohio, shared highlights of a successful partnership between his company and NASA Glenn.



"GRC Connections is an innovative way to reach out to the Glenn community with topics of interest and exciting new activities at the center," affirmed GRC Connections Coordinator Harvey Schabes, Strategic Integration and Project Control Office.

If you have an idea for an upcoming GRC Connections, call Schabes at 216-433-5309.

—By Doreen B. Zudell

## FIRST Class Proposes Strategic Communications

FIRST, or Foundations of Influence, Relationships, Success, and Teamwork, is an agencywide 1-year development program for GS 11-12 civil servants. The program addresses personal effectiveness, business acumen and leading people dimensions of the NASA Leadership Model.



2013 Class members include, left to right, top row: Hans Hanson and Dr. Antoine Moss. Bottom row: Kristen Bury, Terri McKay and Kristin Hawkins.

## Whitlow Appreciation Event

Continued from page 1

Former Center Directors Donald Campbell and Dr. Julian Earls, and former Associate Director Vernon "Bill" Wessel, were among the leadership, employees, family and friends who gathered to share memories and show appreciation for Whitlow's leadership, support and mentorship.

Whitlow first arrived at Glenn to serve as the Research and Technology (R&T) director from 1998 to 2003, before returning to serve as Center Director from December 2005 to March 2010. He brought to Glenn his passion for NASA, a strong work ethic and a unique combination of skill and style that

engendered respect and admiration from his staff and colleagues.

Among the many honors Whitlow received was a bound volume of all the technical papers published over his distinguished career, presented by Center Operations Director Robyn Gordon. Lance Foster, Inlet Branch, and current president of the National Technical Association (NTA), Cleveland Chapter, then provided an additional highlight by presenting Whitlow with the Samuel Cheavers Award for distinguished service and support to the NTA over a period of years.

In his remarks, Whitlow reflected on his NASA career and said serving as R&T director was one of his most enjoyable positions because of his interaction with Glenn's reputable scientists and researchers. To him, getting out of the office and into the laboratories and offices to observe the development of cutting-edge technology continually fueled his enthusiasm and pride.



C-2013-5675

Photo by Michelle Murphy

Dr. Whitlow (center) and his family enjoy a laugh during NASA Glenn's appreciation event hosted for his retirement, Dec. 2.

—By S. Jenise Veris



# Director Shares Year-End Accomplishments

Continued from page 1

and a government shutdown. Free took some time to share a number of highlights of our successes over the past year. Below are some notable accomplishments from each directorate in 2013:

- Received \$43 million in reimbursable funds with an increase in non-governmental funds
- Partnered with the Department of Education through a Space Act Agreement to expand STEM programming within the Department of Education's 21<sup>st</sup> Century Community Learning Center (CCLC) Program
- Delivered S-band and Ka-band Compatibility Test Sets Relay Systems Hardware to the Space Communications and Networks (SCaN) Program
- Developed the Center's first Diversity and Inclusion Strategic Implementation Plan
- Designed, constructed and completed the Shipping and Receiving Facility (SaRF)
- Completed Space X Faring test at Plum Brook Station
- Implemented the agency's first automated performance appraisal system, Standard Performance Appraisal Communication Environment (SPACE)
- Completed first ever ground test of an altitude engine icing capability in the Propulsion Systems Laboratory (see front page photo)
- Completed Checkout/Commission of SCaN Testbed on the International Space Station and began a set of experiments
- Completed the National Quality Assurance audit; received AS9100 recertification for Quality Management System and CMMI Level 2 certification
- The Collaborative Modeling for Parametric Assessment of Space Systems (COMPASS) team completed 18 conceptual designs for 9 different customers, including the Human Architecture Team, as well as 2 external customers: DARPA and Ball Aerospace/Aerojet
- Established a \$3 million General Electric Space Act on Ceramic Matrix Composites (CMC)
- Licensed Glenn's Stirling technology to Nirvana Energy Systems leading to development of game-changing home energy system (in Cleveland)

Free's presentation is available on WING (internal only) at: <http://www.grc.nasa.gov/WWW/director/index.html>.

—By S. Jenise Veris

## Spreading Holiday Cheer



C-2013-5801

### Generous Giving for Toys for Tots

During the year-end gathering, representatives from the 3/25 U.S. Marine Corps picked up 10 boxes of toys collected at the Lewis Field and Plum Brook campuses. Mark Hyatt coordinated the effort on behalf of the Veterans Awareness Committee. Pictured: Sergeant Shawn Kitson, Corporal Andy Cesar and Staff Sergeant Lopaz Swain.



C-2013-5818

Photos by Bridget Caswell

### Calling All Ugly Holiday Sweaters

Following Center Director Jim Free's presentation, employees helped determine the winner of the "Ugly Holiday Sweater/Tie Contest." Lance Foster emceed the contest that brought laughter and cheer as nine contestants modeled their entries. Pictured above, left to right: Aaron Olmsted (1st place), Angela Surgenor, Brian Shefchuk, Craig Mehl, Associate Director Janet Watkins, Justin Niehaus (3rd place), Lindsay Hill (2nd place), Jon Arena and Center Director Jim Free.

### Remembering Our Troops Stationed Overseas

Plum Brook Station employees did not forget those who sacrifice so much to defend our country. With coordination by David Tabayoyon, employees donated items for care packages for U.S. Military personnel stationed overseas this holiday.



## News and Events

### ISS: 15 Years and Counting . . .

More than 40 Glenn-Developed Experiments Flown on Station

NASA Glenn celebrated the 15th anniversary of the beginning of the International Space Station with an informal gathering at Lewis Field, Nov. 25. Center Director Jim Free thanked employees for their critical roles in the program. ISS and Human Health Office Chief Tom St. Onge and ISS Research Project Manager Fred Kohl, pictured, gave an historic perspective and highlighted some of Glenn's past and current contributions while looking ahead to space station support in the future.



C-2013-5176

Photo by Michelle Murphy



C-2013-4949

Photo by Marvin Smith

### Touting NASA Technology to Industry

Thirty-two technology managers from Parker Hannifin came to Lewis Field on Oct. 29 to view 25 NASA Glenn and Langley technologies and one technology funded by NASA's Small Business Innovation Research program. Research experts were available at several locations across the center to discuss technologies of interest. Jeff Rolfe of Parker Hannifin said that more than 100 ideas were generated that day and they are exploring the use of NASA technologies into Parker systems. Glenn's Othmane Benafan, left, shares highlights of NASA technology with attendees.

### Rebuilding the Native American Story

How would you feel if historical references—books, television, movies and sports mascots—depicted your race as fierce savages? Marie Toledo, a Cleveland-based educator, asked this question during this year's Native American Heritage Month Observance, Nov. 20. In addition to discussing a need to repair and rebuild the contemporary Native American presence, she also moderated the documentary, "Reel Injun," which chronicles the movie industry's role in distorting Native Americans' identity and history of oppression. Pictured is Bruce Kafer, a Native American outreach coordinator with the Veterans Administration, who provided the traditional invocation.



C-2013-5294

Photo by Bridget Caswell



C-2013-6072

Photo by Marvin Smith

### Glenn Hosts Energy and Innovation Summit

NASA Glenn opened its hangar doors to host the Northern Ohio Energy and Innovation Summit, sponsored by Congresswoman Marcy Kaptur and the Department of Energy (DOE) National Laboratories, in partnership with NorTech and Case Western Reserve University, Dec. 9. More than 200 representative companies and universities in Northeast Ohio attended the event that showcased regional energy and manufacturing activities, highlighted federal energy resources and pursued input on strengthening regional and national energy initiatives. Kaptur is pictured, center, talking with participants during the event, along with Center Director Jim Free, left.



## Community Celebrates Centaur Anniversary Through Special Events



C-2013-5535



C-2013-5433

Photos by Bridget Caswell

The Greater Cleveland community joined NASA in celebrating the 50th Anniversary of the first successful launch of the Centaur rocket during three events, Nov. 22 and 23, at the Great Lakes Science Center in Cleveland. The celebration kicked off Friday, Nov. 22, afternoon as students participated in a Glenn-sponsored challenge to design an air-propelled vehicle with a 25-gram payload to travel along the ground from a launch site to a rendezvous point. That evening, NASA Associate Administrator Robert Lightfoot joined representatives from the aerospace community in a special dinner program organized by the Ohio Aerospace Institute. Center Director Jim Free emceed the event. The following afternoon, Nov. 23, former Center Director Larry Ross and former Chief of the Advanced Space Analysis Office Joe Nieberding shared some of their experiences as engineers working in the early days of the Centaur development at Space Saturday. Pictured, above left, former Center Director Andrew Stofan at the Nov. 22 program. Top, right: students compete in the design challenge.



Photo by S. Jenise Veris

## Enjoying Musical Treats While You Eat

More than 120 employees received an added treat when they came to the Glenn Café "Beats & Eats" event, Nov. 7. Members of the Baldwin Wallace (BW) University Conservatory of Music Classical Guitar Quartet entertained employees during their lunchtime break. The event was part of phased effort to make the Glenn Café not just a café but also a place to gather and socialize. The BW Conservatory of Music has agreed to several performances at the Glenn Café. Pictured: Food Services team member Lauren Demirjian introduces BW guitarists, left to right: William Otto, Patrick Peralta, Michael Simile and Bradley Stone.

## Diversity Day & Food Fair Embrace Inclusion

It was a time to reflect on global diversity as NASA Glenn celebrated its annual Diversity Day and CFC International Food Fair, Dec. 4, at Lewis Field. Eight vendors, offering multicultural and/or fair-trade items, provided opportunities for employees to support minority-owned businesses and/or projects in developing countries. Chrissy Stonebraker-Martinez from the InterReligious Task Force on Central America, pictured far right, enlisted help from several employees to demonstrate the cost to cocoa farmers associated with selling chocolate in developing countries. The CFC International Food Fair offered multicultural dishes prepared by the Glenn staff with funds benefiting this year's campaign.



C-2013-5986

Photo by Michelle Murphy

# Pursuing Technology Transfer at Glenn

## Four-Step Process

NASA innovations solve the challenges of living and working in space, but for many of these technologies, it is just the beginning of its possibilities. Thousands of space-based technologies such as remote sensors and communications have evolved into commercial products and services that improve our quality of life and create new jobs, right here on Earth.

Glenn's Innovation Projects Office (IPO) facilitates this technology transfer process. The IPO evaluates Glenn's emerging technologies to identify ways they may be used more broadly and then helps share these technologies with the public through collaborative partnerships, licensing and commercialization.

### The Path to Commercialization

Although no two technology transfer efforts are exactly alike, they generally follow this path:

1. **New technology reported:** Completing a New Technology Report (NTR), also known as a Disclosure of Invention, is the first step to technology transfer success. NTRs capture information about technical discoveries, improvements and innovations so that every technology can reach its full potential.

2. **Technology Assessment:** Glenn IPO evaluates technology readiness and market potential. Innovators are encouraged to report all new devices, materials, techniques or systems,

ideally at an early stage of development. Reporting also is appropriate when an improvement on an existing technology/process has made it faster, stronger, more efficient, smaller, lighter or less expensive to manufacture. This gives Glenn's IPO team and legal counsel the opportunity to fully protect the intellectual property (IP) and position the innovation in the best possible way to benefit the innovator, NASA and society.

3. **IP Protection:** Legal counsel evaluates the technology's IP strength and may file a patent application right away or may wait to allow for further development. Because the NTR also enables NASA to protect IP, an NTR should be submitted before any information is publicly disclosed in a presentation or publication. This gives the legal team adequate time to file for patent protection, if applicable.

4. **Partnerships and Licensing:** IPO seeks partners to further develop and/or commercialize the innovation.

### Benefits of Technology Transfer

Partnerships and licenses generate new products and services. Innovators who report their new technologies have the opportunity to engage with industry to help solve meaningful issues in our society. Glenn's innovations have been used to support humanitarian efforts around the world, improve flight safety, restore precious artwork, bring medical



expertise to rural and remote regions of the world and much more.

As Glenn researchers develop promising new technologies, the IPO stands ready to help transform these innovations into valuable products and services that benefit all. For more information, contact Kim Dalgleish-Miller, IPO chief, at [kimberly.a.dalgleish@nasa.gov](mailto:kimberly.a.dalgleish@nasa.gov) or visit <https://technology.grc.nasa.gov/>

—Contributed by Glenn's IPO\*

## Patents Fuel Technology Transfer, Commercialization

Filing a patent is a key step in the path to commercialization, and NASA Glenn has experienced an exceptional year with regard to its fiscal year (FY) 2013 year-end patent metrics and spending efficiency. According to Glenn's Patent Attorney Robert Earp, the center showed a significant increase in patent applications filed over last year.

"The total number of utility and provisional patent applications increased significantly—from 24 to 60—based largely on the change in the U.S. Patent system from first-to-invent to first-to-file," Earp explained. "While this rule change has forced Glenn to file more provisional patent applications, it provides a 1-year grace period to more systematically review and consider those inventions before filing the costly utility patent application. In

essence, we can do more with less because we can plan for and review each technology more thoroughly."

It takes an average of 2 to 5 years for a patent application to become an issued patent. Still Glenn showed a slight increase, from 12 to 14, in patents granted for FY13. According to Earp, Glenn anticipates continued increases in patents issued despite some challenges going forward.

Earp believes NASA Glenn expertise and patents will continue to play a significant role in promoting opportunities for technology transfer that benefits the public sector, private sector and the center itself. For more information on how Glenn is positioning itself for success by creating and using intellectual property, contact Earp at 216-433-3663.

—By S. Jenise Veris



## NASA Ranked Best Place to Work—Again!

For the second consecutive year, the Partnership for Public Service has ranked NASA The Best Place to Work among large agencies (15,000 or more employees) in Government. The survey revealed that participants among the nearly 18,000 federal employees at NASA believe the agency's leaders have sought to enhance job satisfaction by stepping up their focus on innovation, leadership development, work-life balance and other workplace issues. A list of the 2013 rankings is available at <http://bestplacetowork.org>. The Partnership for Public Service is a nonpartisan, nonprofit organization working to revitalize our federal government by inspiring a new generation to serve and by transforming the way government works.

### Retirements



*Baker*



*Kennemuth*



*MacKay*



*Torres*

Bradley Baker, Procurement Division, retired Jan. 1, 2014, with 41 ½ years of NASA service.

Dan Bulzan, Aeropropulsion Division, retired Jan. 3, 2014, with 36 years of NASA service. (Not pictured)

Jerald Kennemuth, Office of Chief Counsel, retired Dec. 28, 2013, with 36 years of NASA service.

Rebecca “Becky” MacKay, Structures and Materials Division, Research and Technology Directorate, retired Jan. 1, 2014, with 32 years of NASA service.

William Torres, Space Combustion and Materials Branch, Facilities and Test Division, retired Jan. 3, 2014, with 43 years of federal service, including 37 with NASA.\*

### Calendar

**DAY OF REMEMBRANCE:** Mark your calendar for Thursday, Jan. 30, when Glenn will recognize NASA's Day of Remembrance. This event commemorates and honors those who have died in America's space program.

**IFPTE LOCAL 28, LESA MEETING:** LESA will host its next membership meeting on Wednesday, Feb. 12, noon, Employee Center's Small Dining Room.

**ASTRONAUT TALK AND BOOKSIGNING:** Astronaut Donald Thomas, an Ohio native and veteran of four space shuttle missions, recently wrote a book about the STS-70 mission called “Orbit of Discovery—The All-Ohio Space Shuttle Mission.” He will be at Glenn, Thursday, Feb. 20, at 1 p.m. in the Ad Building Auditorium to talk about the mission and sign his book that is now on sale in the Exchange Store. He will also appear at the NASA Glenn Visitor Center at the Great Lakes Science Center, Saturday, Feb. 22.

### Correction

IN THE DECEMBER 2013 ISSUE, PAGE 3: “Ribbon Cutting Ceremony Highlights...” article, the outgoing Brook Park Mayor, Mark Elliott, was incorrectly identified in photo C-2013-4747 as newly elected Mayor Tom Coyne.

### In Appreciation

“I would like to sincerely thank my many NASA Glenn friends and colleagues who offered kinds words of sympathy and support after the passing of my mother. Your thoughts and prayers have meant a lot to me.  
—Paul McMasters

“I would like to express my sincere thanks to my Glenn co-workers for their support after the passing of my mother. Your cards and flowers were greatly appreciated during this difficult time.”  
—Tom Vasek

#### Emergency and Inclement Weather Lines

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



### More than a Memory



*Reese*



*Shernock*

Frank J. Reese, 71, a NASA volunteer for more than 13 years, passed suddenly, Dec. 8. Reese was a U.S. Air Force veteran and retired American Airlines mechanic, who actively volunteered as a ham radio operator and weekend tour guide for Glenn's Saturday Facility tours. Reese was a tremendous asset, who brought a smile and aerospace knowledge to many visitors and employees, alike.

Joseph A. Shernock, 83, who retired from NASA in 1982 with 30 years of federal service, died Dec. 6. Shernock was a veteran, who joined NASA in 1955 as a technician. He spent his entire career working in various branches of the Facilities Operations Division, including the Propulsion Systems Laboratory, Supersonic Tunnels and Cryogenics Operations.

## National Aeronautics and Space Administration

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

## CFC: Fun & Fundraising

NASA Glenn's 2013 Combined Federal Campaign Committee held several fundraising events during the months of November and December. Here are a few highlights: **1** CFC Basket Raffle at Lewis Field. **2** Manager Pie-in-Face at Lewis Field: Jon Arena pies Center Director Jim Free. **3** Lewis Field Chili Cook Off winners: left to right, Best Presentation: Trudy Kortez and Nicole Smith's "Sequestration Chili," Best Chili: Quynhgia Nguyen, "NY Strip Chili." **4** Plum Brook Station Chili Cook Off winner: Best Chili, Dawn Schneider with Glenn CFC Loaned Executive Francine McWhorter. **5** Plum Brook Station Best Dessert Bake Off, "Irish Stout Cupcakes" by Brian K. Jones with McWhorter. **6** Manager Pie-in-Face at Plum Brook Station: Stan Grisnik pies Plum Brook Director Dave Stringer. **7** Overview of Chili Cook Off at Lewis Field.



C-2013-5699



C-2013-5731



C-2013-5120



C-2013-5108