



MegaFlex Solar Array Testing Underway at Plum Brook

Preparing for Robotic and Manned Exploration Missions

NASA Glenn recently began technology readiness testing on a new solar array, called MegaFlex, in Plum Brook Station's Reverberant Acoustic Test Facility (RATF). Under development since 2012 by ATK for NASA's Space Technology Mission Directorate, the array is being considered for robotic and manned exploration missions.

"The circular array is 9.6 m in diameter to capture enough solar energy to generate about 20 kW of power when deployed—but folds up to a mere 15 cm-thick package for efficient stowage for launch," explained Carolyn Mercer, Solar Power Element manager in Glenn's Solar Electric Propulsion project. "Upon conclusion of these tests, the technology will be mature enough for consideration for flight missions such as NASA's Asteroid Redirect Mission or use on commercial satellites."

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Acoustics experts Tom Trautt from ATK (left) and Bill Hughes from Glenn stand in front of the stowed MegaFlex solar array after a successful test sequence in the RATF.



Photo courtesy of ATK

NASA Glenn Transitions to New Operating Structure

Center Director Jim Free recently announced a new organizational structure to ensure responsiveness to NASA missions, better position the center to capture new opportunities,

and perform more efficiently within budget and funding constraints.

During his All Hands Meeting on February 4, Free presented an outline

of the structure that is based on a one-directorate model. This model realigns the former Engineering

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Center Concludes Eventful CFC



NASA Glenn recently concluded its successful 2013 Combined Federal Campaign (CFC). Chair Jackie Barbetta, left, and Co-Chair Dawn Pottinger proudly display an oversized check for \$446,105.31. See page 8 for CFC Appreciation and Awards Program highlights.

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**March is
Women's
History
Month**

LESA/IFPTE Union Elects New Officers

Cantwell Hands Baton to Dr. Bailey

The Lewis Engineers and Scientists Association, International Federation of Professional and Technical Engineers, Local 28, (LESA/IFPTE), has undergone a changing of the guard.

Dr. Sheila Bailey, a senior physicist in the Space Environment & Experiments Branch, is the new president. She replaces Virginia Cantwell, a well-known advocate of her fellow federal employees and Local 28 president for the past 22 years. Cantwell resigned her post, effective Jan. 3, upon retiring after 34 years of NASA service.

The following officers assist Bailey in administering the responsibilities of LESA/IFPTE, Local 28: Executive Vice-President Patricia Dimaline, Center

Operations Directorate; 2nd Executive Vice-President, Paul Greenberg, Combustion and Reacting Systems Branch; Administrative Vice-President Sandra Zolo, Space Environments & Experiments Branch; Treasurer Grover "Barry" Hillard, Photovoltaics and Power Technologies Branch; and Legal Counsel and Chief Steward Deborah Drossis, NASA retiree. (A full listing of officers/committee members can be found on the center's internal Labor Relations website, http://www.grc.nasa.gov/WWW/OHCM/Labor_Relations.html).

The LESA/IFPTE, Local 28, which currently represents 1305 employees, was formed in 1975. Initially established to represent professional scientists

and engineers, the union since expanded its membership with the goal of becoming the exclusive bargaining unit for federal employees. The union also works to advocate and promote the center and agency to the public.

Members meet the second Wednesday of every month at noon, Small Dining Room of the Employee Center. For more information about the union, contact LESA Office Manager Sally Weiland, 216-433-5623.

—By S. Jenise Veris



Dr. Bailey

Two Employees Chosen as Glenn's New Ombuds

Marsha Nall and Mike Zernic have been selected to serve as Glenn's ombuds. They replace Kirk Seabloom who served in this role for the last 7 years.

The Ombuds Program provides the workforce (employees, contractors and students) an additional and supplemental channel of communication. Under the program, employees can raise significant issues and concerns perceived to potentially impact organizational performance, safety or mission success. Issues are handled through a confidential, neutral and informal process. In performing this mission, the ombuds serves as an information and communication resource, upward feedback channel, advisor, dispute resolution expert and change agent.

Contact Nall at 3-5374, marsha.m.nall@nasa.gov or Zernic at 3-5286, michael.j.zernic@nasa.gov. For more information on the Ombuds Program, visit <http://ombuds.grc.nasa.gov/>.



Nall



Zernic

"Every issue is worthy of an answer;
Every issue needs to be addressed."

—unknown

MegaFlex Testing

Continued from page 1

The first set of tests performed in the RATF in early February showed the stowed solar array structure has the strength and stiffness to survive acoustic levels set to simulate launch loads. A deployment test determined the array functioned well after exposure to the harsh launch/acoustic environment, and all of the delicate solar cells survived intact. The next set of tests will determine the reliability of the deployment mechanisms

in both the very hot (+60C) and very cold (–60C) vacuum environment of space. Finally, vacuum dynamics testing in the Space Power Facility will provide data to validate analytical models to increase confidence in how these arrays will behave in space.

Critical members of the MegaFlex testing effort include Tom Kerslake, Power Systems Engineering Branch, technical representative, and Amanda

George, Exploration Systems Branch, contracting officer. Together they provide technical direction and contractual execution. Jay Warren, Langley Research Center, leads the analysis team providing independent verification. Aron Hozman, Plum Brook Management Office, and Bill Hughes, Structural Systems Dynamics Branch, provide technical leadership for the acoustic tests.

Creative Cost-Saving Measures Promote Sustainability

Facing mounting government mandates to reduce energy and water consumption, NASA Glenn needed a creative, viable funding mechanism to increase energy efficiency and improve Glenn's progress toward sustainability.

"Budget cuts have significantly affected Glenn's operations and maintenance programs," explained Glenn's Energy Manager Eric Patton, Energy and Environmental Management Office. "This has led to increased deferred maintenance and an inability to take proactive measures to improve efficiencies."

To address these challenges, the Facilities and Test Directorate initiated an Energy Savings Performance Contract (ESPC). Under an ESPC, a private energy savings company finances, designs and builds capital

Initiative could reduce energy intensity by 12 percent, water consumption by 28 percent and utility costs by \$1.8M yearly (out of a \$22M budget)

improvements that result in energy and energy-related savings. In turn, NASA repays that investment over time based upon guaranteed annual savings.

In March 2013, Chevron Energy Solutions started a preliminary assessment (PA) for a campus-wide (Lewis Field and Plum Brook Station)



An example of a vegetated (green) roof that could sprout up on the new Mission Integration Center Building.

ESPC. Chevron staff reviewed facility and systems drawings, conducted field inspections, examined data and conducted interviews to develop the assessment that they delivered in October.

Chevron identified 19 energy conservation measures (ECMs) ranging from \$1.4M worth of lighting upgrades (\$164K in annual savings) to a \$4.8M upgrade and repurposing of motors in the Engine Research Building (\$320K in annual savings). New sustainability efforts would include rainwater harvesting for cooling towers and a vegetated (green) roof over the newly constructed Mission Integration Center (MIC) auditorium.

Project Manager Adam Bihary, Project Management Branch, said the PA meets all of the goals set out at the start of the project. "When fully implemented,

the project will reduce Glenn's energy and water intensity, reduce overall utility costs, install submetering at the building level, and reduce operations and maintenance expenses," he said. "There is even the possibility that renewable energy (solar cells) may be incorporated into the project."

The Space Management Committee (SMC) recently gave its approval to proceed to the next phase of the project, known as the Investment Grade Audit (IGA). During this phase, the team will focus on refining the cost model and accuracy of projected energy savings. Pending further approval, implementation is scheduled to begin this fall starting with ECMs that have short paybacks. In a year from now, Glenn will begin realizing energy and cost savings and become an even more sustainable place to work.

—By Doreen B. Zudell

New Operating Structure

Continued from page 1

and Research and Technology Directorates, and creates the Research and Engineering Directorate that will focus on five competency based functions: power, propulsion, materials and structures, communications, and systems integration. The new structure strengthens the center's competencies and capabilities to create efficiencies, stimulate innovation and enhance integration within the technical functions.

"This reorganization is vital to helping us plan for the future of the center," Free affirmed. "It will help us build confidence in our work and ensure our work is sustainable and relevant."

The branch level organizational structure, supervisory and employee placements, and alignment of contractor tasks are slated for completion in the March/April timeframe. The center will begin

working under a virtual mode in April, transitioning between operating in the new structure and processing official actions. The center expects to conclude the transition period by mid summer.

For more information on the new structure, visit the Glenn Reorganization Web site [internal only] at <https://www.grc.nasa.gov/reorganize/>.

—By Doreen B. Zudell

News and Events



Photo by Libby Westlake, Ohio House of Representatives

Touting Glenn Technology at the Statehouse

The center conducted a “NASA Glenn Technology Exhibits Day at the Statehouse,” Feb. 11. Glenn subject-matter experts (SMEs) staffed 15 exhibits. The goal was to demonstrate how investments in space and aeronautics technologies that help achieve NASA’s goals may also create or improve products and services beneficial to life on Earth. The event was conducted in cooperation with Ohio Rep. Rick Perales, chair of the Aerospace Caucus, to educate Ohio General Assembly members and staff on Glenn’s aerospace research and development capabilities. Pictured: Glenn SME Dr. Paul Bartalotta explains the process of additive manufacturing and products to Rep. Perales. Center Deputy Director Gregory Robinson, far left, Glenn’s State Legislative Liaison Dr. Kim Veris, Greater Cleveland Partnership’s Nick Gattozzi and Glenn’s Director of Venture Development & Partnerships Dr. Joe Shaw, observe.



C-2014-497

Photo by Bridget Caswell

Lessons From Those Lost

During the agency’s Day of Remembrance Observance, Jan. 31, Glenn honored members of the NASA family who lost their lives while furthering the cause of exploration and discovery. Center Director Jim Free reiterated former NASA Flight Director and Space Shuttle Program Manager Wayne Hale’s “10 Enduring Lessons Learned” from the Apollo 1, Challenger and Columbia mishaps. Scott Altman, (pictured) retired astronaut and vice president of Arctic Slope Regional Corporation Federal Space and Defense, provided personal reflections of his Columbia classmates.

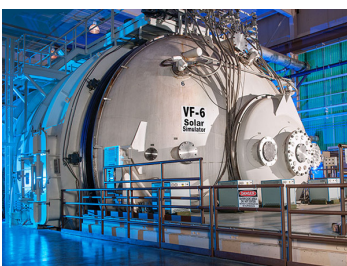


C-2014-326

Photo by Marvin Smith

Pressing Forward for Greater Possibilities

Three distinguished members of the Cleveland community served as panelists for the center’s Martin Luther King Jr. Day program, Jan. 29. NASA Glenn Deputy Director Greg Robinson joined the African Heritage Advisory Group in welcoming the panelists who discussed the program’s theme, “The Evolution of a Movement, the Realization of the Dream.” Discussion centered on accomplishments of the Civil Rights Movement and challenges that remain today. The panelists are pictured, left to right: Donnie Perkins, vice president for Diversity and Inclusion at University Hospitals; Wayne Dawson, co-anchor of “Fox 8 News in the Morning”; and Dr. Jawanza Colvin, pastor of the Olivet Institutional Baptist Church.



Saturday Tours Begin in April

The center will offer free tours of its world-class facilities at Lewis Field one Saturday a month from April through October. A tour bus departs from Lewis Field’s main gate every hour beginning at 10 a.m.; the last tour departs at 1 p.m. One hour tours begin in the Briefing Center Auditorium and include a multimedia presentation of Glenn. The April 5 tour will take place in the Electronic Propulsion Laboratory, pictured left. For more information and a complete schedule of tours, visit <http://www.nasa.gov/centers/glenn/events/tours.html>. For questions, contact Shelia Reese, 216-433-9653.



Photo by S. Jenise Veris

Book Highlights Mission

Former astronaut and Cleveland native Dr. Don Thomas gave an engaging talk to Glenn employees about experiences outlined in his new book "Orbit of Discovery—The All-Ohio Space Shuttle Mission." The book is based on his personal account of the 1995 STS-70 mission. After his presentation, he autographed copies of his book. Thomas also traveled to the Great Lakes Science Center, Feb. 22, to share highlights of his book and mission experience with hundreds of people at Glenn's Visitor Center. The book is available for purchase at the Glenn Exchange Store.



C-2014-562

Photos by Bridget Caswell

Civil Rights: Continuing the Movement

Glenn's Black History Month Celebration, held Feb. 13, offered an agenda packed with speakers and performers to address the theme: "The Golden Jubilee of the Civil Rights Act." Keynote speaker, Dr. Marilyn Sanders Mobley, vice president for Inclusion, Diversity and Equal Opportunity, Case Western Reserve University, chronicled some of the struggles/accomplishments of Americans to gain civil rights. She also stressed the importance of maintaining those rights and continuing the movement. Proceeds from the Soul Food Cuisine, a highlight of the program, were donated to Women of Hope, a non-profit charity. Pictured, top, left to right: Vanessa Webbs, Sylvia Merritt, Stephanie Brown-Houston and Dexter Johnson support the program theme through song. Above: Mobley gives the address.



C-2014-574

New 24/7 Food Service Option Debuts at Glenn Café

The Glenn Café has expanded its food services options to offer the Lewis Field workforce 24/7 access and convenience.

Last month, through an agreement between the Glenn Exchange and the State of Ohio, the state's Bureau of Services for the Visually Impaired (BSVI) installed a Micro Market on the mezzanine level of the main dining

room, Building 15. BSVI also is replacing existing Lewis Field vending machines with new units.

Based on a convenience store format, the Micro Market offers a variety of hot and cold food items, including breakfast sandwiches and freshly ground coffee. Payment for food and drink items will be made through a self-checkout kiosk using cash, credit or debit cards with an established BSVI customer account. Employees of BSVI will be onsite to assist customers.

"We're excited for the opportunity to serve the NASA community," said Tom Neal, who oversees the Micro Market at Lewis Field.

BSVI's motto is "Purchase With a Purpose." Profits from the Micro Market and campus vending machines will help support the Opportunities for Ohioans with Disabilities Business Enterprise Program. The program provides entrepreneurship opportunities to people who are blind or visually impaired. In addition, a percentage of the profits will be returned to the Glenn Exchange to help support center activities.

Visit the Glenn Café website at <http://www.grc.nasa.gov/WWW/glenncafe/> to learn about this and other food services developments. Employees may also subscribe to the Glenn Café vendor update e-mail by contacting krasynthia.k.johnson@nasa.gov, mark.e.kilkenny@nasa.gov or francis.t.jennings@nasa.gov.



Photo by Doreen B. Zudell

Clarence Jones, PATL/Educational Programs Office, takes a snack break. Similar snacks are available in select vending machines across the center.

Resident Astronaut Returns to NASA Johnson

NASA Glenn recently bid farewell to astronaut Stephanie Wilson. She completed a 9-month detail to Glenn in January and has returned to the Astronaut Office at the Johnson Space Center.

During her detail to Glenn, Wilson served as the acting chief of the Program/Project Integration Office in the Space Flight Systems Directorate. In addition to supervising, she gained valuable experience managing programs and projects and firsthand knowledge of center business management functions and processes. Wilson also served as a Glenn representative to the agency's Program/Project Management Board.

"Having Stephanie work with us for 9 months was a true win-win situation," said Space Flight Systems Director Bryan Smith. "She gained unique experiences

Right: Wilson, far right, as a panelist on Glenn's Executive Women's Panel during a workshop at OAI. Below: Reviewing student projects at Glenn's 2013 Young Astronauts Day.



C-2013-4666

and knowledge working at another center while greatly contributing to the success of our PP&C functions and processes. We enjoyed having her with



C-2013-4893

Photos by Michelle Murphy

us and wish her the very best at Johnson and in future missions and assignments."

Throughout the detail, Wilson attended center events and made astronaut appearances to share her flight experiences and inspire local youth. She was the third consecutive astronaut to choose an assignment at Glenn since 2010.

—By S. Jenise Veris

Awards, Honors & Promotions



Baumann



Danks



Kuehn



Dr. Landis

Eric Baumann, Systems Integration Branch, provided systems engineering support as a member of the Adopt-A-City initiative team. He will join the team in accepting the Federal Laboratory Consortium award for Technology Transfer's 2014 State and Local Economic Development in April.

ASHRAE (American Society of Heating, Refrigeration and Air Conditioning Engineers) has chosen Richard Danks, chief of the Engineering and Environmental Management Branch, to receive the Distinguished Service Award. The award recognizes members who have faithfully served ASHRAE faithfully on committees and given their time and talent on behalf of the society.

Paul Kuehn has been selected Senior Project Manager of the Project Management Branch, Facilities Division. Kuehn brings 14 years of private industry experience as well as 4 years with NASA in several high-profile projects at Lewis Field and Plum Brook Station. He currently manages the \$11M Water Distribution Phase I project.

Glenn physicist and science fiction writer Dr. Geoffrey A. Landis, Photovoltaics and Power Technology Branch, earned the 2014 Robert A. Heinlein Award. The award, sponsored by the Baltimore Science Fiction Society, is bestowed for outstanding published works in science fiction and technical writings that inspire the human exploration of space. The award recognizes Landis' 4 books, 83 short stories and 76 poems, as well as more than 375 NASA technical publications.

Tomaro Named Chief, Protective Services

Christi Tomaro has been appointed Glenn's chief for the Office of Protective Services. She served as deputy chief for the office since 2012. In this new position, Tomaro oversees the planning, development, review, execution and management of NASA Glenn's security program.



Tomaro

Retirements

Virginia Cantwell, IFPTE, Local 28, LESA Union, Center Operations Directorate, retired Jan. 3, 2014, with 34 years of NASA experience.



Cantwell



More Than a Memory

James W. Gauntner, 76, who retired in 2000 with 38 years of federal service, died Jan. 23. He was a senior aerospace engineer in the Supersonic Propulsion Office, who contributed to a 3-D in viscid code, critical to airplane engine analysis. Gauntner was a Silver Snoopy award winner and two-time Manned Flight Awareness honoree. He also won a 1995 FEB Wings of Excellence award for charitable service. His brother Dan, a retired NASA division chief (2009), survives him.

Theodore E. Klonk Jr., 85, who retired in 1974 with 27 years of federal service, died Jan. 7. Klonk was a U.S. Navy veteran of World War II, who joined NASA in 1949 as an apprentice and graduated as a flight propulsion mechanic. He became a work leader in several facilities at Plum Brook Station before heading the Experimental Service Unit, Reactor Division. After the reactor was put in standby mode, he became head of Unit-A, Rocket Service Experiment Section in the Facilities Division until retirement.

James E. Martz, 83, who retired in 1986 with 31 years of federal service and nearly two decades as a contractor, died Jan. 20. Martz served in the U.S. Air Force prior to beginning his NASA career as a senior reactor operator at the Plum Brook Station Reactor Facility. He transferred to the Power Technology Division at Lewis Field, where he earned two NASA Group Achievement awards for his contributions to installation of more than 80 stand-alone solar-electric power systems in remote areas of the United States and Africa (1976-1990). The systems brought clean water and electricity to those areas.

Donald A. Ohlemacher, 88, who retired in 1986 with 26 years of federal service, died Jan. 25. He was a U.S. Army veteran of World War II. Ohlemacher worked at Plum Brook Station in the Reactor and Space Power facilities as an electronic unit supervisor before transferring to Lewis Field. He was a member of the Phase I development team that earned a NASA Group Achievement award for the Systems Integration, Test and Evaluation Project.



Gauntner



Klonk



Martz



Ohlemacher

News and Events

Calendar

FIRST ROBOTICS COMPETITION: Come see more than 1500 students from Ohio and across the nation show off their engineering design talent at the 13th annual Buckeye Regional FIRST (For the Inspiration and Recognition of Science and Technology) competition, March 20-22, at Cleveland State University's Wolstein Center. Admission is free and open to the public. For more information and a schedule of events, visit <http://www.oai.org/firstbuckeye/>.

Emergency and Inclement Weather Lines

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

WOMEN'S HISTORY MONTH OBSERVANCE: Glenn's Women's History Month Program will be Thursday, March 27, noon to 2 p.m., Administration Building Auditorium. The Federal Women's History Program Awards will be presented during the event. POC: Amy Stalker, 3-3703.

NASA SCHOLARSHIP CALL: Applications are being taken for The NASA

College Scholarship Fund (NCSF), established by noted Pulitzer Prize winning author James A. Michener. The fund awards scholarships to qualified dependents of current and retired NASA employees who are planning to major in science or engineering fields. Up to five \$2,000 scholarships will be awarded during the 2014-2015 school year. The scholarship is renewable. For application information visit <http://nasapeople.nasa.gov/nasascholarship/index.htm> or call Vanessa Webbs, 216-433-3768. The deadline is March 31, 2014.

IFPTE LOCAL 28, LESA MEETING: LESA will hold its next membership meeting Wednesday, April 9, noon, Employee Center's Small Dining Room.

YURI'S NIGHT: Join the party at Glenn's Visitor Center in the Great Lakes Science Center for the annual Yuri's Night, April 12, 8 p.m. to 1 a.m. The event recognizes Soviet cosmonaut Yuri Gagarin as the first human to journey into outer space and celebrates all human

space exploration. Astronaut Greg Johnson will make a special appearance. For more information and tickets, visit <http://www.greatscience.com/>.

NATIONAL LIBRARY WEEK: Glenn's Science and Engineering Library will observe National Library Week, April 13-19. Look for more information on *Today@Glenn*.



To Reach the Unreachable Stars

The Cleveland Pops Orchestra is dedicating their April 25th concert at 8 p.m. as a special tribute to the 25 NASA astronauts from Ohio. Astronauts Mike Foreman and Dr. Don Thomas (retired) will be participating in this special program that will include NASA video footage. NASA also will provide lobby exhibits for pre-concert and intermission opportunities for the astronauts to interact with the audience. Watch *Today@Glenn* for information about discount tickets.



National Aeronautics and Space Administration

John H. Glenn Research Center at Lewis Field

21000 Brookpark Road
Cleveland, Ohio 44135

www.nasa.gov

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Editor: **Doreen B. Zudell**, SGT, Inc.

Assistant Editor: **S. Jenise Veris**, SGT, Inc.

Managing Editor: **Kelly R. DiFrancesco**



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

Glenn Concludes Eventful 2013 CFC

NASA Glenn's 2013 Combined Federal Campaign (CFC) Committee celebrated its successful campaign with an Appreciation and Awards Program, Feb. 7. Employees exceeded the monetary goal by donating/pledging a total of \$446,105.31. The funds will benefit thousands of nonprofit charities throughout Northeast Ohio and beyond.

The CFC Committee faced particular challenges this year with the government shutdown occurring shortly after Glenn's CFC kickoff. Thus, the team (and employees) had to keep the theme "Serving Our Country, Supporting Our Community" in their mind and hearts until they returned to work. The committee then had the task of rescheduling events and restarting the campaign, explained CFC Chair Jackie Barbetta.

"A successful campaign under normal conditions requires a team commitment," Barbetta affirmed. "However, the 2013 campaign required that and more in the way of perseverance and passion."

The campaign included a variety of special events, from the traditional to the new, to raise \$15,089.39 in donations, a \$3,000-plus increase from last year. Two of the new events included a competition between NASA

Glenn and Langley Research Center and an agency fair at Plum Brook Station.

"The commitment, spirit and determination of the keyworkers and directorate chairs was tremendous in 2013," said Center Director Jim Free, who also served as 2013 North Coast Chairperson.

A CFC core committee of 32 directorate chairs and co-chairs met weekly throughout the campaign. This called on their time and talents as leads—with support from 120 keyworkers—on each major CFC event.

Barbetta and Co-chair Dawn Pottinger thanked employees for their support and the opportunity to lead NASA Glenn in the North Coast Combined Federal Campaign. Pottinger, who will chair the 2014 CFC, encourages employees who may not have served in a CFC leadership role, to consider participating this year.

"Being part of the CFC is hard work, but it's an invigorating, impactful and fun intersection of the personal and professional," said Pottinger. "It's a leadership development opportunity that hones your project management skills and cross-functional engagement. Most importantly, it is an opportunity to make a positive difference in those lives served by charities."



C-2014-512

Photo by Bridget Caswell

2013 North Coast Chairperson Center Director Free thanked employees for their commitment to the campaign.

High Achievers

Highest Participation (Large Organization): Space Flight Systems Directorate

Highest Participation (Small Organization): Office of Chief Counsel (100 percent)

Chairperson of the Year: Dr. Jennifer Xu, Research & Technology Directorate

Keyworker of the Year: Kathryn Dunlap, Center Operations Directorate

—By Doreen B. Zudell