



# AEROSPACE *Frontiers*

Volume 7 Issue 4 May 2005

## Jennings addresses transformation

BY DOREEN ZUDELL

James Jennings, associate administrator for Institutions and Management, stressed the necessity for cultural change and transformation within the Agency during an All Hands meeting at Glenn on March 6.

"I can't give enough credit to the Glenn team for the job they have done toward these efforts," Jennings said.

Jennings cited actions in three key areas that will help sustain a positive culture Agencywide:

- Establish a system that aligns rewards with positive behavior
- Make cultural change part of education and development programs
- Include positive behaviors as part of the criteria in selecting supervisors.

Jennings spoke on the topic of Agency transformation as it relates to jobs and facilities. He noted that it is imperative that NASA shift its current focus to achieve the Vision for Space Exploration.



Photo by Marvin Smith C-2005-432

*Jennings recently met with management and employees.*

Jennings began by congratulating Glenn employees for their pioneering efforts in the Agency's cultural change initiative, citing the value of the Center's work in the Leadership Observation Feedback Team (LOFT). He noted how the results of a second survey conducted in October showed significant progress in the way employees view the Glenn culture. A third survey will be conducted in November. It is hoped that it will reflect an even higher percentage of employees who feel that the Agency is making positive strides in cultural change.

Under the President's budget proposal for fiscal year 2006, aeronautics research was prioritized and downsized. Jennings said that efforts are being made, however, to return more research and project areas to the aeronautics portfolio.

Jennings said that the Agency is working to define projects in the area of space exploration as well. He affirmed the importance of research in achieving this vision. "We cannot shortchange development," he said. "We need to solve technology issues to get to Mars."

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## Griffin named Administrator

Michael D. Griffin reported to work on April 14 as NASA's 11th Administrator. Griffin became the leader of the Agency on the day the Expedition 11 crew launched to the International Space Station. The Administrator was confirmed on the evening of April 13 and officially sworn in the next day.



Griffin

"I have great confidence in the team that will carry out our Nation's exciting, outward-focused, destination-oriented program," said

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# Glenn receives One NASA Peer awards

Center Director Dr. Julian Earls acknowledged three individuals and one team for their demonstration of the One NASA philosophy during the Director's Leadership Team meeting on April 12. The employees, civil servants and support service contractors, recently received prestigious One NASA Peer Awards.

The new award program allows members of the NASA family to celebrate and reward One NASA philosophies demonstrated by an individual or team within the Agency. Selections must involve participation from multiple NASA centers and are based on one or more of the following themes: decisionmaking for the common good, collaborating to leverage existing capabilities, and exercising standards that demonstrate efficiency.

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C-2005-533

Photo by Marvin Smith

Center Director Dr. Julian Earls, right, presented the team award to Thomas Miller, Concha Reid, and Barbara McKissock. Not pictured are Michelle Manzo and Jacquelyn Selee.

# Michael Griffin takes the helm at NASA

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Griffin. "In the coming days, I'll be spending a good deal of my time reviewing our progress toward returning the space shuttle safely to flight. I will also be reviewing the activities of our mission directorates and our various supporting functions. I share with the Agency a great sense of privilege that we have been given the wonderful opportunity to extend humanity's reach throughout the solar system."

During his confirmation hearing before the U.S. Senate, the Administrator stated that his priorities, consistent with the President's Vision for Space Exploration, will be as follows:

- Fly the space shuttle as safely as possible until its retirement, not later than 2010
- Bring a new Crew Exploration Vehicle into service as soon as possible after the space shuttle is retired
- Develop a balanced, overall program of science, exploration, and aeronautics at NASA, consistent with the redirection of the human spaceflight program to focus on exploration
- Complete the International Space Station in a manner consistent with our international partner commitments and the needs of human exploration
- Encourage the pursuit of appropriate

partnerships with the emerging commercial space sector

- Establish a lunar return program having the maximum possible utility for later missions to Mars and other destinations

President George W. Bush nominated Griffin as NASA Administrator in March, while Griffin was serving as the Space Department Head at Johns Hopkins University's Applied Physics Laboratory in Baltimore.

Griffin was president and chief operating officer of In-Q-Tel, Inc., before joining Johns Hopkins in April 2004. He also served in several positions within Orbital Sciences Corporation, Dulles, VA, including chief executive officer of Magellan Systems, Inc.

Earlier in his career, Administrator Griffin served as chief engineer at NASA and as Deputy for Technology at the Strategic Defense Initiative Organization. He has served as an adjunct professor at the University of Maryland, Johns Hopkins University, and George Washington University.

Griffin taught courses in spacecraft design, applied mathematics, guidance and navigation, compressible flow, computational fluid dynamics, spacecraft attitude

control, astrodynamics, and introductory aerospace engineering. He is the lead author of more than two dozen technical papers, as well as a textbook, "Space Vehicle Design."

A registered professional engineer in Maryland and California, the Administrator is a fellow of the American Institute of Aeronautics and Astronautics (AIAA). He is a recipient of the NASA Exceptional Achievement Medal, the AIAA Space Systems Medal, and the Department of Defense Distinguished Public Service Medal, the highest award given to a non-Government employee. He is a certified flight instructor with instrument and multiengine ratings.

He received a bachelor's degree in Physics from Johns Hopkins University; a master's degree in Aerospace Science from Catholic University of America; a doctorate in Aerospace Engineering from the University of Maryland; a master's degree in Electrical Engineering from the University of Southern California; a master's degree in Applied Physics from Johns Hopkins University; a master's degree in Business Administration from Loyola College; and a master's degree in Civil Engineering from George Washington University. ♦

## Return To Flight efforts

# Glenn wrap concept handles hot panel

BY S. JENISE VERIS

With a targeted launch date between May 15 and June 3, *Discovery* and the STS-114 crew is executing final checks for their mission to the International Space Station. During the mission, they will test new safety procedures NASA and partnering organizations have designed, developed, and tested over the past 2 years to ensure the safe return of the shuttle and crew.

*Discovery* will be fitted with several new features recommended by the Columbia Accident Investigation Board. Among these are 22 temperature sensors on each of the orbiter wing reinforced carbon-carbon (RCC) leading-edge panels to measure heat distribution across the wings.

Since a breach in panel 8 of the leading edge at liftoff was determined to be the cause of the *Columbia* accident, the Return To Flight (RTF) Program has devoted extraordinary effort to addressing the potential for panel repair on orbit. Until now, on-orbit repair plans centered on small-scale, "proof-of-concept kits," such as crack and plug repair for STS-114, tile repair for STS-115, and small-area repair for STS-116.

Beginning with the STS-117 mission, the focus will be on repair concepts over large areas (10 inches or more). Glenn's refractory metal overwrap is one of two repair plans currently under review by the RTF RCC repair team, which is managed jointly by NASA Johnson and NASA Langley.

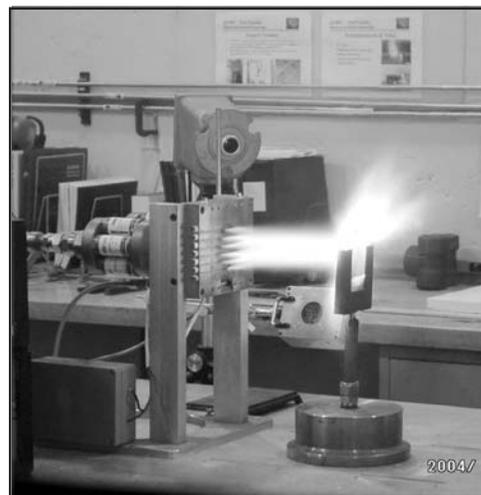
"I believe there's nothing [no concept] out there with both the flexibility and versatility that our concept is capable of addressing," said Glenn lead for the metal wrap concept, Frank Ritzert, Advanced Metallics Branch. "The wrap can be bent like a taco shell over the damaged area of a wing or used to bridge a gap across two panels."

Ritzert and Dr. James Nesbitt, Durability

and Protective Coatings Branch, identified rhenium, a rare and costly metal, as the most suitable of five refractory sheet alloys. The metal would be protected from the reentry environment by a silicide coating. The selection process involved two tests simulating the hottest possible RCC reentry temperature of 2960 °F for 15 minutes. Metal samples were prescreened with an oxygen-propane torch test, performed by Raymond "Craig" Robinson and Don Humphrey, both of QSS/Durability and Protective Coatings Branch. The most successful, coated rhenium, was shipped to the Boeing's Life Cycle Analysis Team facility in St. Louis for a more rigorous arcjet test that duplicated the temperatures, as well as the harsh reentry plasma environment. The rhenium-based material design survived the arcjet profile.

Glenn's concept repair kit would include: a large coated sheet (up to 2 by 4 feet) of the refractory metal; a low-temperature, low-melting silicate coating that could be applied in advance or on orbit; and a gasket material to seal the edges and bond the coated metal to the RCC panel.

"Integration of the material with a solution for actually adhering the wrap to the



Metal candidates were prescreened in Glenn's Quick Access Rocket Exhaust Rig before shipping to the Boeing facility in St. Louis.

orbiter wing is underway," Ritzert said. "Some design issues still remain, but we have a new budget and new milestones to achieve."

The new network of sensors and cameras monitoring the shuttle will deliver data to astronauts and ground engineers that may contribute to the development of this and other repair kits. These research efforts are further proof of Glenn and the entire Agency's commitment to reduce risks and expand the frontiers of future exploration. ♦

## Glenn to get new food service provider

Acorn Food Services, Philadelphia, PA, was recently selected for the Glenn Food Service contract following a full and open competition. A former Section (8) small minority/women-owned business, Acorn has operations from Maine to Alaska. It has extensive Federal cafeteria experience, including contracts with the Department of Defense Homeland Security, the Navy, and the Air Force.



Mark Kilkenny, cochair of Glenn's Cafeteria Improvement Team, said that the Acorn contract offers many menu options, promotions, and catering options to the Glenn cafeteria. The company is expected to come onboard later this month.

Look for *Today@Glenn* and future *AeroSpace Frontiers* issues for further information on the new cafeteria contract implementation. ♦

## News and Events

### Harvest for Hunger 2005

Glenn employees had several opportunities to participate in the Center's Harvest for Hunger (H4H) campaign, including Juan's Amazing Magic Show, a QSS Group, Inc., fundraiser, on Friday, April 1. Juan, who is the husband of QSS employee Christine Paniagua, engaged the audience in a lunch-hour performance filled with the excitement of magic, music, and comedy. Additional funds were raised at the Great American Chili-Cookoff held on April 8. The competition included three entries by External Programs Directorate members: "Bomb House Chili" by Gregory Bobbitt, Glenn's H4H campaign coordinator; "Heavenly Chili," by Anna Falcon; "Momma Mia's Chili, by Maria Torres; and one from the Office of the Chief Information Officer, "Chicken Chili," by Erline Trsek. Admission included chili samples and a chance to win one of more than 30 door prizes donated by local businesses and sports organizations. A total of 650 pounds in nonperishable food items and toiletries were collected from the Cook-off and drop-off points across the Center and at the neighboring OAI facility. Glenn's total cash contribution for the campaign was \$2,023.



Photo by Doreen Zudell

Above: Center Director Dr. Julian Earls samples Anna Falcon's "Heavenly Chili" entry, the People's Choice Award winner.

Right: Juan calls on audience participation during the magic show.



Photo by S. Jenise Veris

### Glenn ExPO

Glenn hosted an Exploration of Partnership Opportunities (ExPO) forum on April 6 at the Renaissance Cleveland Hotel. Attending were 130 guests from companies, universities, and nonprofit organizations ranging from large aerospace companies to small regional organizations. The goal of the forum was to foster collaboration between NASA, industry, and academia in preparation for upcoming competition opportunities supporting NASA's Space Exploration Vision. Presentations describing Vision architecture concepts and a poster session on Glenn technologies that contribute to the Exploration mission offered insight for collaboration with Glenn. One-on-one meetings with Glenn technologists were very popular and allowed visitors to talk about topics of direct interest to them. Arrangements for Glenn facility tours were available as well. Pictured is Eric Pencil, Electric Propulsion Branch, left, explaining electrical propulsion technology to ExPO participants.



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Photo by Quentin Schwinn

Photo by Marvin Smith

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### String theory

Dr. S. James Gates, professor of Physics at the University of Maryland, pictured, headlined a trio of String theorists, including Dr. Michael Duff, University of Michigan, and Dr. Amanda Peet, University of Toronto, who visited the Center on March 18. Gates gave a lecture on Superstring Theory, an emerging physics that attempts to unite Einstein's general relativity with quantum mechanics using the idea that incredibly tiny "strings" of energy define the very existence of matter and how matter interacts. Gates, Duff, and Peet joined several Glenn researchers for lunch, followed by a tour of Glenn's facilities that house such research as quantum entanglement for communication, fingering combustion as an example of self-organized criticality, quantum dot photovoltaics, and sonoluminescence. The event was sponsored by the Research and Technology Directorate.



## Ask the Director

The following question was chosen by the Director as a sampling from the *Ask the Director* Web site.

**Q.** We are being told that we must compete. However, at the same time most of the exploration announcements don't allow the Government to propose as the prime, that is, the Broad Agency Announcement (BAA) of last year and upcoming BAA. We are told we must run the race, but shackles are being put around our feet. Not only do we have the burden of our expensive facilities to put us at a disadvantage cost wise, but we also have to jump on the back of some contractor or university to compete. Why are we being forced to play on an uneven field? Are there procurement regulations that are forcing this upon us (Government can't compete with industry) or is the Exploration Systems Mission Directorate just playing hard ball?

**A.** (04/07/2005) No, procurement regulations are not the reason for the competition initiative. The Development Program Themes in the Exploration Systems Mission Directorate each have approaches to their portfolios that currently vary. In this answer, I am assuming you are referring to Exploration Systems Research and Technology.

The acquisition strategy and portfolio were constructed to separate competitions with Government prime proposers from competitions with industry as prime proposers. Total resources were allocated to afford about 40 Intramural (Government-led) and 70 Extramural- (Industry or Academic-led projects), with partnering encouraged in both focused on Spirals 2 and 3. As we understand it, the plan for allocating the remaining unallocated resources in the portfolio is to have both intramural and extramural components, but no commitment has been made on this yet. The reason for separating Government and industry is to foster collaboration, partnership, and enhance Government-industry interactions. When Government and industry compete directly, the experience is that barriers to cooperation are introduced. There have been two announcements so far in ESR&T, one for Government led, and One for Industry led. ♦

## News Notes

### **DISTINGUISHED PUBLICATIONS:**

Nominations for the 2004 Glenn Distinguished Publication Award, instituted to encourage and reward outstanding research and technology contributions by Glenn staff members, were due to division chiefs by 4:30 p.m. on Wednesday, May 4, 2005. If you have not forwarded your nomination, please contact your division chief immediately to ensure that your nomination will be considered. The paper must be a publication or presentation dated between July 1, 2003, through June 30, 2004. Division chiefs must submit their final selections to their directorate offices by 4:30 p.m. on Friday, June 3, 2005. Each directorate office will send one package to the chief scientist's office by 4:30 p.m. on Wednesday, June 8, 2005. For further information, contact Anthony.J.Strazisar@nasa.gov.

**LESA MEETING:** LESA/IFPTE, Local 28, will hold its next monthly membership meeting on Wednesday, May 11, at noon in the Employee Center, room 101.

**ASIAN-PACIFIC ISLANDERS HERITAGE:** Glenn's Asian and Pacific Islanders

Heritage Month Observance is scheduled for Thursday, May 19 at 10 a.m. in the Administration Building auditorium. Glenn's Asian and Pacific Islanders Advisory Council will host Lynna Lai, co-anchor of WOIO TV 19 *Action News at FIVE*, who will present the keynote address. In addition, the event will include cultural performances and cuisine sampling, as well as the traditional artifact display. The theme for this year's celebration is "Bridging the Gap Between Our Differences—Promoting Diversity."



Lai

**WOMEN RETIREE LUNCHEON:** The next luncheon for Glenn female retirees will be Thursday, May 19, noon, at Mapleside Farms Restaurant, 294 Pearl Road, Brunswick. For further information and to make a reservation, contact Gerry Ziemba, 330-273-4850.

**FREE FAMILY FUN:** On Saturday, May 21, Glenn's Visitor Center will present "Ohio Astronauts." Learn more about the

history of astronauts from Ohio and their impact on our Nation's space program. Presentations will be held at 11 a.m. and 1 p.m. Free photos will be available at the "Picture Yourself in Space" digital photo booth, "Make and Take" craft activities for kids, and plenty of handouts. For more information and reservations, call 216-433-9653 or see [visit.grc.nasa.gov](http://visit.grc.nasa.gov).

**LLF GOLF OUTING:** Lewis Little Folks (LLF) onsite child development center will host its fifth annual benefit golf outing on Friday, June 3, at Springvale Golf Course, North Olmsted. The event begins at 8 a.m. (shotgun tee-off). The cost is \$70 per golfer (\$25 tax deductible) and includes greens fees, cart for 18-hole game, dinner, golf kit, and prizes. Entry deadline is May 13. Contact Carmella Genaro, 216-433-5264. ♦

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**News Notes items for the June issue are due by Thursday, May 12, noon.**

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# Jennings visits

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Jennings admitted that it is challenging to determine the exact facilities (at Plum Brook and Lewis Field) that will be needed for the future because the work has yet to be fully defined. "Currently we have more infrastructure and people than we have work on our plate," Jennings explained. "We need to determine the skills [and positions] that we think we'll need."

Jennings said that all NASA centers—and the Agency overall—are considering alternative operation structures to ensure a competitive edge. Center Director Dr. Julian Earls noted that while the Federally Funded Research Development Center concept was mentioned, a more hybrid approach might be beneficial. He pointed to Glenn's partnerships with OAI and the National Center for Microgravity Research as examples successful collaboration.

With a variety of workforce transformation efforts underway, it may be difficult to understand the relevance of each process and how they fit together to ensure a stronger, more competitive NASA. Jennings pointed to the "NASA Transformation White Paper," which communicates the linkage and alignment of the various Agency efforts. The "NASA Transformation White Paper" and the charts are available on the Inside NASA Website at [http://www.insidenasa.nasa.gov/nasa\\_nas/ops/NASA\\_transformation/NASA\\_trans\\_wp.html](http://www.insidenasa.nasa.gov/nasa_nas/ops/NASA_transformation/NASA_trans_wp.html).

The meeting concluded on the topic of the NASA family. Both Jennings and Earls stressed the importance of embracing the values of teamwork, support, and accountability. Everyone has something to bring to the table, they agreed.

Earls said that the best way to work through the transformation is for employees to continue to give 100 percent. "During this time of transformation, it's important to perform the jobs we have today to the best of our abilities." ♦

# DIME competition makes an impact on high school students

BY DOREEN B. ZUDELL

When students participate in Glenn's Dropping In a Microgravity Environment (DIME) competition, the impact of the experience goes far beyond the experiments descending 79 feet along the 2.2-Second Drop Tower.

"DIME provides an opportunity for high school students that they cannot obtain through their school laboratories," explained program creator and coordinator Richard DeLombard, Human Health and Performance Systems Project Branch. "Participants conduct a research program from beginning to end, following the same steps that a NASA researcher follows."

Now in its fifth year, the DIME competition is open to students in grades 9 through 12. Participating five-member teams of students and advisors from science classes, clubs, and scout troops develop an experiment concept, prepare a proposal, and submit the proposal to Glenn. A panel of Glenn microgravity experts selects the top proposals. The selected teams (up to four each year) continue their experiment development and fabrication in their classrooms and then conduct their experiments in Glenn's world-class 2.2-Second Drop Tower each April. In the first 4 years, schools from Florida, Michigan, Ohio, and Pennsylvania participated, conducting experiments primarily in the areas of fluids and combustion. This year teams from Oregon, Georgia, Illinois, and Michigan are participating.

"Going to Cleveland [NASA Glenn] was one of the best experiences of my life," said Nikita Patel, part of a team from Troy Athens High School, Troy, MI, who participated in the 2004 DIME competition. "The best part of the



Photo by Doreen Zudell

Troy Athens High School's Gottlieb, far right, returned for the 2005 DIME competition with a new team of students, left to right, Christina Miceli, Kim Boyntor, Amanda Cleghorn, and Lauren Heitzer.

project was building it and testing it. It felt so good to take our ideas from paper and put them into actual hardware. It was amazing to see it all come together. And when the experiment actually worked, we were ecstatic!"

Jennifer Gottlieb, a science teacher at Troy Athens High School, served as Patel's team mentor in 2004. An advocate of the DIME competition, Gottlieb previously mentored a winning team in 2003, and returned this year with another set of students who conducted an experiment entitled "The Drag Force in Microgravity."

"The enthusiasm and creativity that the DIME competition generates in the students is incredible," said Gottlieb. "I've been able to incorporate the DIME competition into the curriculum of my advanced placement physics classes. The program is so popular that student enrollment in these classes has grown from 13 a few years ago to 55 students this school year. Each step of the process is a wonderful opportunity for the students to improve their skills and knowledge. Writing the proposal, for example, not only builds students' technical knowledge but also improves their writing abilities."

Gottlieb and other mentor-educators say

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# FIRST's vision inspires

BY S. JENISE VERIS

Sometimes motivation can be traced to a single inspirational act. This was truly the case at the 2005 FIRST (For the Inspiration and Recognition of Science and Technology) Robotics Competition, held from March 24 to 27 at Cleveland State University Convocation Center. Beyond all the "fast-moving and action-packed" demonstrations of robotic creativity, this event is more about students and mentors building relationships that lead to a sustained interest in science and technology.

Tales of overcoming trials and tribulation were widespread among the 42 teams that competed in this year's Buckeye Regional. Even so, participants might single out the gracious professionalism exhibited by other teams on behalf of Cleveland St. Ignatius High School, as their choice of this year's most inspirational event at FIRST.

On Good Friday, March 25, the St. Ignatius team elected to sit out the qualifying heats in observance of the Christian holy day. Upon hearing this, three New York teams—Newfane, Webster, and Penfeld—volunteered to run Ignatius' robot for them. As a result of this charitable gesture, the Ignatius team advanced to the last day of competition. The excitement surrounding the "Good Samaritan matches" drew comparisons to the 1981 Oscar-award-winning movie *Chariots of Fire*, about a track star who nearly forgoes his chance for an Olympic medal by choosing not to compete on the Sabbath.

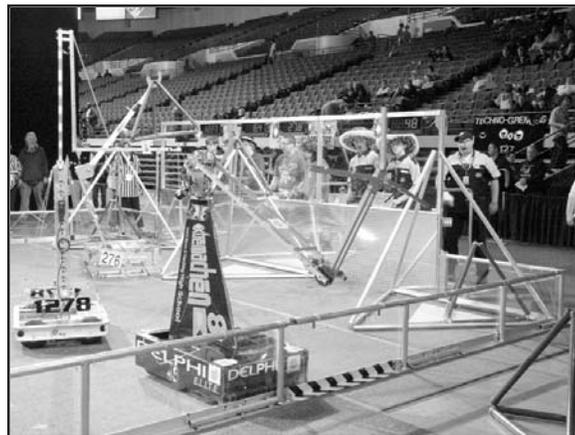
Inside the pits and on the field, team spirit and perseverance ran high and in some cases struck gold: Timken High School (Canton, OH) earned the Judges Award for Resourcefulness after producing a competitive robot, despite working with limited tools in the lobby of a partly-finished building; and Success Technology Academy earned the Rookie Inspiration Award for recruiting a new team after school district changes sent several students involved in a FIRST team to separate schools.

The winning robotics alliance—Toledo Public Schools (OH), Huron Schools (MI), and James Ford Rhodes High School

(Cleveland, OH)—and the climb to the top after 2 days of individual and joint competition was a testament to perseverance and sportmanship. And although their technical creativity stands out, an even greater occurrence is the legacy of inspired supporters.

The Chairman's Award, considered the most prestigious among FIRST awards, focuses on the most inspiring team story in which an entire community is transformed. The 2005 Regional Chairman's Award was presented to Warren G. Harding High School, Warren, OH, for their ongoing impact on fellow students, the school, and the community at large. Throughout the year, the team applied their skills to activities like volunteering for Habitat for Humanity, Adopt-a-Highway, and Operation Christmas Child. Team members have improved their grade point averages, focused their career plans on engineering and other advanced degree fields, and achieved an 88-percent college matriculation rate. In addition, Harding assisted other FIRST rookie teams with a workshop and robot demonstrations and helped spread the FIRST message through fundraising events throughout the community.

"NASA is doing its part to spread the message through team sponsorship,



Chairman Award winners Warren Harding High, are pictured in a spirited match.

which has enhanced FIRST program participation," said Carol Galica (IDI), Glenn's FIRST program manager in the Educational Programs Office. "Eleven out of 42 teams participating in the Buckeye Regional were sponsorship grants through NASA's Robotics Education Project. An additional six teams were awarded team registration from Glenn's Educational Programs Office."

So what is NASA's return on its investment? FIRST exposes students to various career choices, as they strive to solve engineering design problems in an exciting and stimulating environment. Perhaps some of these same students will enter the pipeline of talent that might one day contribute to new NASA missions in the exploration of the Earth, Moon, Mars, and beyond. ♦

## DIME effects far reaching

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that the effects of the DIME competition are far reaching for many of their students. When her teams return to school, Gottlieb says, they are on a "NASA high" for weeks. She added that many of her students who have participated in DIME competitions have gone on to college to major in engineering and science-related fields in college. Nikita Patel, for example, is completing her freshman year in Biology (pre-med) at the University of Michigan.

Gottlieb and DeLombard agree that one of the greatest benefits of the program is

how it dispels misconceptions that are often associated with careers in math and science. They say that the experience of successfully working through a research project and meeting NASA scientists, engineers, and technicians who perform this work on a regular basis provides more realistic and obtainable goals for young people.

"When the program started 5 years ago, I had hoped that it might help to inspire the next generation of project scientists and astronauts," DeLombard said. "I think that we are achieving that goal far beyond our expectations." ♦

# Employees recognized for ONE NASA efforts

Continued from page 2

The Team Award was presented to the NASA Aerospace Flight Battery Program led by Michelle Manzo, acting chief of the Electrochemistry Branch, along with Power and Electrical Propulsion Division staff members Barbara McKissock, Thomas Miller, Concha Reid and Jacquelyn Selee. The team was recognized for ensuring the quality, safety, reliability, affordability, and performance of flight battery systems for NASA missions while establishing the foundation that enables the infusion of validated technology into future missions.

This program is deemed one of the best and longest lived examples of successful implementation of the One NASA philosophy in the Agency. Its accomplishments can be attributed to successful interactions between no fewer than seven NASA centers in conjunction with other Government agencies dealing with aerospace battery-related issues.

Before reaching 2 years of service at Glenn, Jennifer Budd, Organization Development and Training Office, has developed and maintained a high level of rapport with her colleagues across the Agency to ensure the highest level of training for employees. This award recognizes her continuous involvement as colead for the NASA FIRST (For the Inspiration and Recognition of Science and Technology) Program, ensuring consistency and alignment across NASA centers by developing a curriculum for all Agency mid-level personnel.

One of the three Individual Awards was presented to Kevin Coleman, Logistics and Technical Information Division, for developing an online History Office at Glenn, as well as collaborating with the NASA Headquarters' project on the total rewrite of the program and project schedule for NPR 1441.1. Under Coleman's leadership, Glenn's History Office has become one of NASA's most productive groups, realizing such projects as the Dream of Flight Symposium, a documentary on the Plum Brook

Reactor Facility ("Of Ashes to Atoms"), and a book about the Centaur Program.

Cheryl McCallum, BTAS/Community and Media Relations Office, received her Individual Award for collaborating with NASA Headquarters and other centers to share publications, exhibits, and speakers to staff public events across the country. She also has coordinated a series of monthly spe-



Budd



Coleman



McCallum

cial programs to expand the public outreach capabilities of the Glenn Visitor Center and Speaker's Bureau. The programs have literally attracted thousands of new patrons to Glenn's Visitor Center.

For further information about One NASA Peer Awards, visit [www.onenasa.nasa.gov/Onehome.html](http://www.onenasa.nasa.gov/Onehome.html). ♦

## Author Homer Hickam visits Center

Homer Hickam, Jr., author of "Rocket Boys," spoke to a capacity crowd in Glenn's DEB auditorium during a public discussion on April 14. Glenn and the Cleveland Area Metropolitan Library System sponsored the event. Dee Perry of 90.3 WCPN radio moderated.

"Rocket Boys," the 2005 selection for the North Coast Neighbors Share a Book program and the inspiration for the movie "October Sky," is a best-selling novel-memoir based on the author's coming of age in Coalwood, WV. A coal miner's son, Hickam dreamed of launching a rocket and sending it into space. His quest began with boyhood friends and a homemade launch pad and eventually led him to an 18-year career with NASA during the shuttle era.

Attendees at Glenn's DEB auditorium included high school students from Cleveland-area schools. Two NASA Explorer Schools participated in the discussion with Hickam through videoconference. The program was also Webcast, offering students and the general public an opportunity to interact with the author through e-mail and on NASA TV.

North Coast Neighbors Share a Book is an initiative of libraries in the local and surrounding regions. Based on similar "one book" events held in other cities, the program attempts to unite the community around a common theme: reading the same good book, and sharing thoughts and ideas about it

with other people. This event marked the culmination of the 2005 Share a Book program, which featured dozens of book discussions throughout the community. ♦

Photo by Marvin Smith

C-2005-534



Perry, center left, listens as Hickam, center right, shares his memoirs with students live and via satellite.

# Flight Software Branch earns Level 2 distinction

In December 2004, Glenn's Flight Software Branch achieved a Capability Maturity Model (CMM) Level 2 rating for its software development activities. By achieving the Level 2 rating, the branch joins just four other organizations across the Agency that have achieved this distinction.

What does this mean and why does it matter? CMM, originally developed by the Software Engineering Institute for the Department of Defense, is recognized as a set of industry best practices for the development of software. The Level 2 rating indicates that an organization has established and follows a cohesive set of processes ensuring adherence to project management principles.

"The CMM-2 assessment is nice, but more importantly, we now have instituted some best practices that should make our jobs less frustrating," said Flight Software Branch Chief Kevin Carmichael. "Credit for this success goes beyond our branch and includes members of the Software Engineering Process Group (SEPG) who spent many hours building and refining the best practices."

Using CMM as a guide, the Glenn SEPG analyzed current software practices, recommended improvements, and coached the development teams in the use of these improved practices. Nine months prior to assessment, Flight Software Branch personnel from multiple software development projects piloted a set of processes that SEPG established to improve the planning, tracking, configuration management, quality assurance, requirements management, and metrics gathering associated with software development.

SEPG plans to continue these efforts as Glenn and the Agency begin the transition to the Capability Maturity Model Integrated (CMMI), a broader model that incorporates all engineering disciplines and support areas involved in development of a system—mechanical engineering, electrical engineering, software engi-

neering, manufacturing, and acquisition—for the implementation of industry best practices for engineering development. This model is already part of a new NASA-required procedure for software development Agencywide NPR 7150 NASA Software Engineering Requirements. Portions of it apply to every type of software that NASA will build or buy in the future.

NASA's Software Engineering Initiative Plan guides Glenn's SEPG efforts. The plan defines a comprehensive approach to improve software quality, safety, and

reliability throughout the Agency by improving software engineering processes. Further data about the initiative, 7150, and useful development tools are available at <http://software.grc.nasa.gov>. ♦



CMM Assessment Team, left to right, Randi Green, Joseph Ponyik, William Pierce (lead assessor, Nupit, Inc.), Charles Farrell, and Denise Varga, all of the Computing Science Division.

## Women's History Month Observance A dream deferred

Although their determination and perseverance did not earn them a trip to space, the Mercury 13—13 distinguished female flyers and military personnel—are applauded as heroes and role models for a new generation of women astronauts in Martha Ackmann's book, "The Mercury 13: The Untold Story of 13 American Women and their Dream of Space Flight." Ackmann was the featured speaker at this year's Women's History Month program. Her presentation was a celebration of these pioneering women, tempering with humor the realities of discrimination that denied them their dream. Her talk was highlighted with filmed interviews of modern-day pilots, including STS-114 Commander Eileen Collins, who said that she had found inspiration in the women's story.

Ackmann fielded questions about her book before handing over the spotlight to Zelma Watson George and Rear Admiral Grace Hopper, as performed in vignettes by members of the local Women in History Troupe. George was a leader in the Cleveland community and former director of the city's Job Corps Center for Women, while Hopper is best known as an inventor and computer pioneer who helped develop Common Business-Oriented Language (COBOL) for computers. A reception with refreshments followed in the DEB cafeteria, where Ackmann

joined employees for a book signing conducted by the Glenn Exchange. The Glenn Women's Advisory Group and the Office of Equal Opportunity at Glenn sponsored the event. ♦

Photos by Marvin Smith

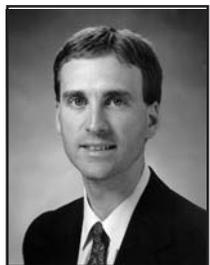
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Pictured left, Ackmann autographs her book for Dr. Sasi Pillay, Glenn's chief information officer. Above, members of the Women in History Troupe in costume as Hopper and George.

## People



Dr. DellaCorte



Dr. Lyons



McMillen



Dr. Zaman

## Awards

**Dr. Valerie Lyons**, chief, Power and Electrical Propulsion Division, and **Linda McMillen**, computer specialist, Office of the Chief Information Officer, are the recipients of the 13<sup>th</sup> annual Glenn Federal Women's Program Award presented on March 24 during Women's History Month. The award honors two male or female civil servants (supervisor and nonsupervisor) based on contributions to the advancement of women at Glenn and participation in community service organizations. Lyons won for her leadership as an accomplished scientist and senior executive manager for one of the Center's three core competencies; mentorship and inspiration to young aspiring women; activity in several professional organizations; and genuine care, encouragement, and support for members of her staff. The nonsupervisory award was presented to McMillen for her leadership and motivation through commitment to improving her own performance and identifying opportunities for others; contributions as a team member in several Glenn organizations as well as for special projects benefiting the local community; and loyalty, sensitivity, and compassion for her friends and coworkers.

The Cleveland Chapter of the National Technical Association (NTA) honored **Dr. Afroz Zaman**, Antenna, Microwave and Optical Systems Branch, for outstanding technological achievement during the recent 2005 NTA Nsoroma Awards luncheon at Windows on the River in Cleveland. Zaman was recognized for her sustained contributions to the advancement of antenna technology, which have been essential in maintaining Glenn's leadership in the field not only within NASA, but also across the professional community at large. Zaman was among five recipients of the Nsoroma Award that recognizes local women of color who demonstrate a significant scientific, technological, or educational accomplishment.

The Society of Tribologists and Lubrication Engineers (STLE) has selected **Dr. Christopher DellaCorte**, Tribology and Surface Science Branch, for the prestigious 2005 Al Sonntag Award. Established in 1983, the award honors the STLE member(s) authoring the best paper on solid lubricants published in the Society's *Tribology Transactions* during the year preceding the STLE annual meeting. DellaCorte will be recognized on May 17 at the President's Luncheon for his paper, "The Effects of Substrate Material and Thermal Processing Atmosphere on the Strength of PS304: A High Temperature Solid Lubricant Coating." DellaCorte will receive the honor of becoming the STLE Fellow during the luncheon.

## Community Outreach

NASA Glenn Business & Professional Women, through American Legion Post 421 of Fairview Park, is sponsoring two students, daughters of Glenn employees, to attend Buckeye Girls' State Program in Ashland through Bowling Green State University from June 12 to June 18. Buckeye Girls' State Program is designed to educate Ohio's young women in the duties, privileges, rights and responsibilities of good citizenship.

The 1-week program activities include government workshops, legislative sessions, campaigning, party rallies, debating, and voting. Student **Lucinda Allen** (daughter of Lucille Rhodes, Educational Programs Office) attends Success Technology Academy in Cleveland. She was selected as a delegate for the 2003 Model United Nations Program at Case Western Reserve University. Another student, **Kathy Oprea** (daughter of Janeal Oprea, CIO Business Office), attends Berea High School. She attended the Junior State of America Symposium on Leadership and Politics at Ohio State University. She started her own chapter at Berea High School and is also on the Ohio River Valley Region cabinet. ♦



Allen



Oprea

*AeroSpace Frontiers* is an official publication of Glenn Research Center, National Aeronautics and Space Administration. It is published the first Friday of each month by the Community and Media Relations Office in the interest of the Glenn workforce, retirees, Government officials, business leaders, and the general public. Its circulation is approximately 6700.

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DEADLINES: News items and brief announcements for publication in the June issue must be received by noon, May 12. The deadline for the July issue is noon, June 10. Submit contributions to the editor via e-mail, [doreen.zudell@grc.nasa.gov](mailto:doreen.zudell@grc.nasa.gov), fax 216-433-8143, phone 216-433-5317 or 216-433-2888, or MS 3-11. Ideas for news stories are welcome but will be published as space allows. View us online at <http://AeroSpaceFrontiers.grc.nasa.gov>.

WINNER



# Called to duty

As Memorial Day approaches, *AeroSpace Frontiers* takes this opportunity to introduce a section that will be reserved to announce our coworkers who have been called to protect our Nation.

Senior Master Sgt. Air Force Reserve **Ralph Fekete**, mechanical engineering technician, Prototype Development Branch; Sgt. Army Reserve **Joseph Morgan**, (KPSI) Security Management and Safeguards Office, security officer; Lt. Marine Reserve **Kenneth Roth**, (KPSI)

"... Although many miles may separate us, there's one thing I hope that they'll find, our soldiers will never be forgotten, though out of sight, they're not out of mind."

(used with permission, 2004 Linda Lee Wolovich)

Security Management and Safeguards Office, security officer; Sgt. Army Reserve **Ward Souders**, (LMI) Environments Branch, senior technical specialist.



Souders

The following employees have safely returned from duty: **Erick Lupson**, contract specialist, Services and Construction Branch; **George Saad**,

mechanical engineering technician, Prototype Development Branch; and **James Williams**, electronics technician, R&D Labs Technical Branch.

*Editor's note: Information for this column was coordinated through Glenn's Veteran's Awareness Committee. Photographs are published upon availability. Lupson, Saad, and Williams were featured with photographs in the November 2004 AeroSpace Frontiers. ♦*

## In Appreciation

Sincere thanks to my friends for all their kind thoughts and support on the passing of my brother.  
—**Nick Varaljay**

## In Memory

**Robert R. Godman**, 87, who retired in 1973 after 33 years of Federal service, recently died. Godman was serving as director of Engineering Services at his retirement. During his tenure at NASA/NACA, he helped to design jet engines used in World War II and the space shuttle engine.

**James Zimmerman**, 78, who retired in 1981 after 30 years of Federal service, recently died. He was serving as supervisory contract specialist at his retirement.

## Omission noted

In the "News and Events" section of the April *AeroSpace Frontiers*, Ruben Ramos' name was inadvertently omitted from the photo caption on the 2005 Combined Federal Campaign. Ramos served as a loaned executive with the Northeast Ohio Combined Federal Campaign.

**Retirees wishing to receive home delivery of the *AeroSpace Frontiers* must complete a NASA C-431 form, which is available through Glenn's Retirement Office.**

## Retirements

**Steve DeBarr**, Research Testing Division, retired on April 3, 2005, with 34 1/2 years of Federal service, including 30 1/2 with NASA.

**James Dudenhoefer**, Power and Electrical Propulsion Division, retired on April 3, 2005, with 39 1/2 years of NASA service.

**Wayne Gardner**, Research Testing Division, retired on April 3, 2005, with 39 years of Federal service, including 35 with NASA.

**Terry Gabel**, Facilities Division, retired on April 3, 2005, with 26 years of Federal service, including 14 with NASA.



Dudenhoefer

**Klaus Gumto**, Computing Science Division, retired on April 3, 2005, with 41 years of NASA service.

**Craig Horak**, Research Testing Division, retired on April 3, 2005, with 34 years of Federal service, including 30 1/2 with NASA.

**Gary Thomas**, Research Testing Division, retired on April 3, 2005, with 38 1/2 years of NASA service.

**Kathleen Webb**, Procurement Division, retired on April 3, 2005, with 38 1/2 years of NASA service.

**Ken Weiland**, Research Testing Division, retired on April 3, 2005, with 36 1/2 years of NASA service.

**David York**, Computing Science Division, retired on March 31, 2005, with 14 1/2 years of NASA service.



Gumto



Webb



Weiland



York

# Cultural transformation welcomes new leadership

BY DOREEN ZUDELL

In March, Glenn's original Cultural Change Implementation Team passed the baton to a new team of employees who will carry on the important task of helping to create a stronger future by supporting the Center's cultural change and transformation goals.

"The way we relate to one another is vital to the way we do business," said Kenneth O'Connor, Glenn Safety Office. O'Connor and Calvin Ramos, Satellite Networks and Architecture Branch, have assumed the duties of cochairs, replacing Leslie Greenbauer-Seng, Durability and Protective Coatings Branch, and Dr. Rickey Shyne, Safety and Mission Assurance Directorate, who led the process since June 2004. The process was designed for team members to serve for a period of time and then return fulltime to their respective roles at the Center.

A charter member of the team, O'Connor knows the importance of maximizing communications between managers and employees and has been intricately involved in the Leadership Observation and Feedback Team (LOFT), one

component of the cultural change process. He and Ramos lead a new team of 10 LOFT members, who are from both staff and management positions and represent multiple Glenn organizations. Observers attend meetings across the Center to identify and encourage positive leadership behavior and promote constructive dialogue among all levels of employees and organizations. He said fostering these positive behaviors (communications, decisionmaking, management credibility, and supporting employees in the organization) at all levels of the Center will be essential to support the Agency transformation.

Over the past year, LOFT observations have been focused primarily on regular staff meetings. At this point, however, the team is interested in branching out to observe business and research project-based meetings where high-profile decisions are made. As with all meeting observations, the leaders (supervisors) should be communicating



Photo by Doreen Zudell

Greenbauer-Seng, center, transitions as a Cultural Change Implementation Team cochair with new cochairs, O'Connor, left, and Ramos.

the observation feedback information to the meeting attendees (employees) for the process to work most effectively. In turn, all employees need to understand that their feedback counts.

Ramos can attest to the need for the LOFT effort to foster critical leadership behaviors and to support the Center and Agency transformation and culture change efforts. "As a cochair, I'm committed to ensuring that the process is value-added and not an impediment to achieving the Center and Agency goals."

For further information on the cultural change activities, visit the Web site at <<http://www.grc.nasa.gov/WWW/GRCculture/index.htm>>. ♦

National Aeronautics and Space Administration

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Lewis Field**

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Cleveland, Ohio 44135

Volume 7 Issue 4 May 2005

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