NASA Glenn Research Center
AEROSPACE Frontiers
Volume 6 Issue 3 March 2004

Remembering our fallen heroes

BY S. JENISE VERIS

NASA Administrator Sean O'Keefe declared that the last Thursday in January be set aside every year as a Day of Remembrance across the Agency to honor the *Apollo I*, *Challenger*, and *Columbia* crews, and all others who have given their lives in the cause of exploration and discovery.

The date was selected to recall all three anniversaries of the crew tragedies, which all fall within the same calendar week. The *Apollo I* spacecraft fire occurred on January 27, 1967; the *Challenger* launch explosion on January 28, 1986; and *Columbia*'s explosion on February 1, 2003.

On January 29, this year's Day of Remembrance, Center Director Dr. Julian Earls addressed employees after joining Microgravity Science Division Chief Jack Salzman, and Combustion Projects Branch Chief Ann Over, to place a wreath at the base of the new astronaut memorial wall in the Lobby of the Visitor Center.

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C-2004-204 Photo by Marvin Smith

NASA's budget: a reorganization and redirection of purpose

BY S. JENISE VERIS

Recent headlines and debates surrounding President Bush's vision for U.S. space exploration suggests the President is seeing eye-to-eye with the NASA administration on what is necessary to secure long-term U.S. space leadership. But for the short term, the goal between now and October is to convince Congress to share that vision.

NASA unveiled its budget request to Congress February 4 with the release of two companion documents: "Fiscal Year 2005 Budget Estimates" and "The Vision for Space Exploration," a framework for exploration of the solar system and beyond.

"NASA's FY2005 Budget of 16.8 billion reflects the President's vision, which is to advance U.S. scientific, security, and economic interests through a robust space exploration program,"O'Keefe said. "It is fiscally responsible and consistent with the Administration's goal of cutting the budget deficit in half within the next 5 years."

NASA's budget will increase by $1 billion over the next 5 years, by approximately 5 percent per year over the next 3 years, and approximately 1 percent for the following 2 years.

For now there is nothing definitive to report on the allocation of funds and implementation of the exploration vision across the Agency.

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"The new Office of Exploration Systems is developing a transition plan and conducting an assessment of the technologies that are required for the exploration initiative. The Center expects to have more information in the July/ August time frame," said Associate Director Robert Fails.

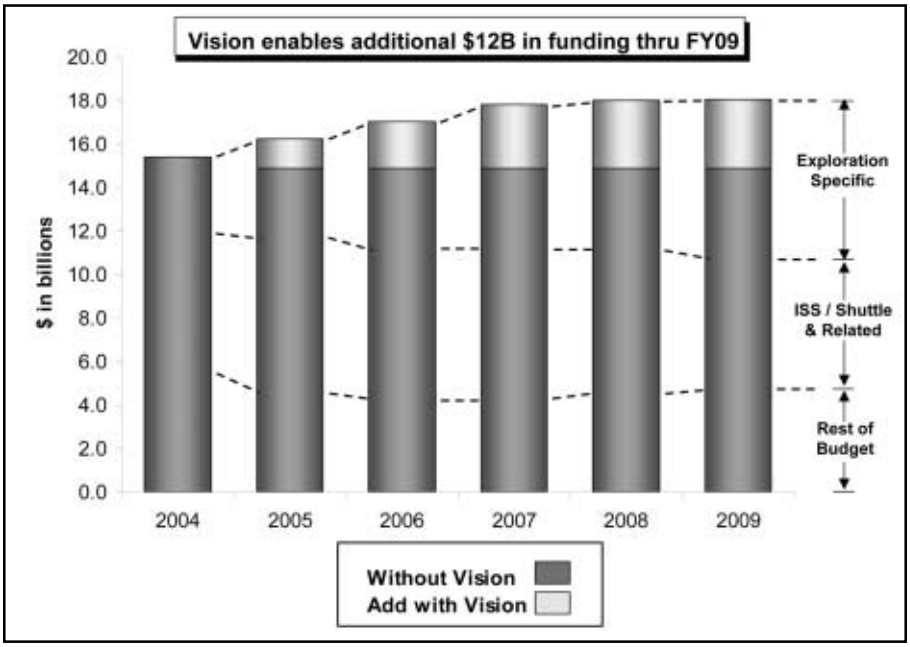
The development of new technologies and systems for exploration will come under a new Enterprise, the Office of Exploration Systems. Highlights in the budget include

- The additional $1 billion Bush plans to add to NASA's budget over the next 5 years is the result of an $11 billion reduction for programs deferred or cancelled and the addition of $12 billion for space exploration-related programs and initiatives. About $6 billion comes from cancellation of the Space Launch Initiative, an umbrella for the Orbital Space Plane (OSP), Next Generation Launch Technology (NGLT), and Mission and Science Measurement/Enabling Capabilities and Technologies (MSM).

- $636 million for Human and Robotics Technology. This represents an investment in technologies and capabilities that will make a sustainable exploration program possible.

- $428 million for Project Constellation, representing $6.6 billion over 5 years. This program replaces OSP in favor of a new Crew Exploration Vehicle, which would be the first new U.S. human space flight vehicle since the 1980s. Glenn is prominent in the technologies and capabilities needed for exploration, so it is anticipated that the new direction will be positive.

- $438 million for Project Prometheus. NASA Comptroller Steve Isacowitz said, "Project Prometheus" is one of the highest activity priorities for the Agency. It has a central role in exploring other solar systems both from the robotic and human standpoint. Last year, Prometheus development focused on the initial demo of the Jupiter Icy Moons Orbiter and now as a result of the vision, we're taking a broader look at Prometheus for application not only to robotics but also human activity whether on the surface or in propulsion. Glenn has a prominent role in this effort due to expertise in space power and propulsion to propel spacecraft beyond Earth orbit.



Budget with approved exploration vision.

- $20 million in new funding for Centennial Challenge. This is similar to the well-known private industry "X Prize." Prizes will be awarded to individuals or teams who invest to develop an innovative approach or new technological capability that furthers the development of aeronautics.

Another major change turns Aeronautics into an Enterprise to replace the Office of Aerospace Technology. The overall financing for aeronautics is approximately $900 million per year through FY2009. Center Director Earls said that this decision shows the Bush Administration and Agency's commitment to aeronautics. However, the Center would have to become more efficient and more effective to maintain its obligations to FAA and the Nation's aeronautics industry for projects like public safety, quiet engine research, and aircraft engine fuel efficiency.

"We can't predict what is going to be needed, but we know that one thing that will be needed is creativity,"Earls said. "We will continue to do what Glenn does best, research that focuses on aero-propulsion technologies, aerospace power, microgravity science, electric propulsion, and communications technologies." ◆

NASA Scholarship

The NASA College Scholarship Fund, Inc., a Texas non-profit corporation, is accepting applications for the 2004–2005 school year. The fund was established with a substantial and unsolicited gift from Pulitzer Prize-winning author James Michener, who held the people of NASA and their work in high esteem.

Now, in the 22nd year of the program, five $2,000 scholarships will be awarded to qualified dependents of NASA and former NASA employees. These scholarships can be renewed to receive a maximum of $8,000 over 6 calendar years. Applicants must be pursuing a course of study in a science or engineering field that will lead to a recognized undergraduate degree at an accredited U.S. college or university.

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Crews named for 2004 space missions

Headquarters news release

NASA and its international partners assigned new crews to fly to the International Space Station this year. As Expedition 9, NASA astronaut Edward Michael "Mike" Fincke and Russian cosmonaut Gennady Padalka will be the next crew to live aboard the complex. NASA astronaut Leroy Chiao and Russian cosmonaut Salizhan S. Sharipov will serve as backup for Expedition 9 and as the prime crew for Expedition 10.

Fincke and Padalka have trained together as a crew since March 2002 and are set for launch April 18 on a 6-month mission. Padalka will serve as Expedition 9 commander and Soyuz commander, and Fincke will be NASA's science officer and flight engineer.

USAF Lieutenant Colonel Fincke, a native of Emsworth, PA, will be making his first space flight. He has trained as a backup station crew member for two previous missions, Expeditions 4 and 5. Padalka will be making his second space flight, having completed 198 days aboard Russia's *Mir* Space Station in February 1999. He also trained with Fincke as a backup for Expedition 4.

Chiao and Sharipov are scheduled to launch in October. Chiao will serve as Expedition 10 commander and NASA science officer, and Sharipov will serve as Soyuz commander and flight engineer. Astronaut William S. McArthur, Jr., and cosmonaut Valery I. Tokarev will serve as the Expedition 10 backup crew.

The new assignments were proposed by Russia through the Multilateral Crew Operations Panel. The decision is still subject to internal review by each partner agency. NASA anticipates that process will be completed soon.

"Fortunately, the partnership has a pool of highly qualified crew members available, which gives us the flexibility to deal with unexpected circumstances,"Chief Astronaut Kent Rominger said. "After a very thorough evaluation by our partners, I'm confident that these assignments make the very best use of our crew resources and skills and will ensure the flights' full success."

European Space Agency (ESA) Astronaut Andre Kuipers will also launch aboard the Soyuz with Fincke and Padalka in April. He will spend about a week aboard the Station conducting scientific experiments before returning to Earth with Expedition 8 crewmembers Mike Foale and Alexander Kaleri. ◆

Fincke

Padalka

Chiao

Sharipov

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Applications MUST be received at Johnson Space Center no later than March 22, 2004. For additional information and application information and deadlines, you can access the online application information at http://jscpeople.jsc.nasa.gov/ncsf.htm.

Onsite, questions can be directed to Marie Borowski at 3-5582.

NASA establishes Ombud Program

NASA Administrator Sean O'Keefe announced the establishment of NASA's Ombuds Program and Dallas Lauderdale, chief, of the Facilities Division, is Glenn's new Ombudsman.

Lauderdale

Acting in complete confidentiality,the Ombud at each center is empowered to listen to and act on NASA family members' concerns related to safety, organizational performance, and mission success.

The program was recommended by an Agencywide Action Team chaired by Goddard Space Flight Center Director Al Diaz, which applied the findings of the Columbia Accident Investigation Board to other NASA operations. The team's report and recommendations, "A Renewed Commitment to Excellence," was released in January.

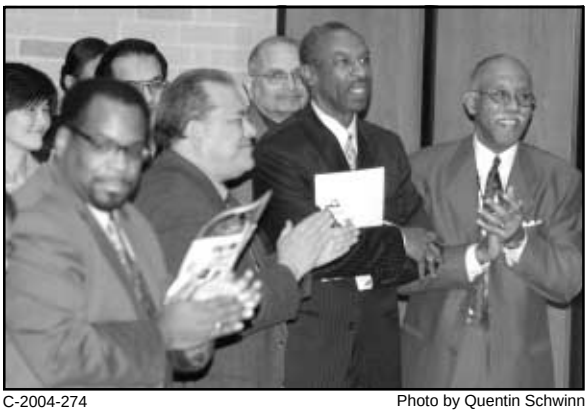
When issues are brought to the Ombuds, they may conduct informal inquiries; seek to promote a mutually satisfactory resolution of the issue or concern; or raise issues directly with Center Directors and with the Deputy Administrator at NASA Headquarters. Each Ombud will serve to ensure NASA becomes more accountable and results-oriented.

"Our Ombuds will be empowered to perform their duties independently and in a diligent and timely manner," said O'Keefe. "The Ombuds are designed to serve as a safety valve when employees feel regular channels for raising issues and concerns are not working effectively.

I congratulate all those who helped develop this initiative, which will help strengthen NASA's commitment to safety and mission success. When it comes to open and honest communications, we get it!" ◆

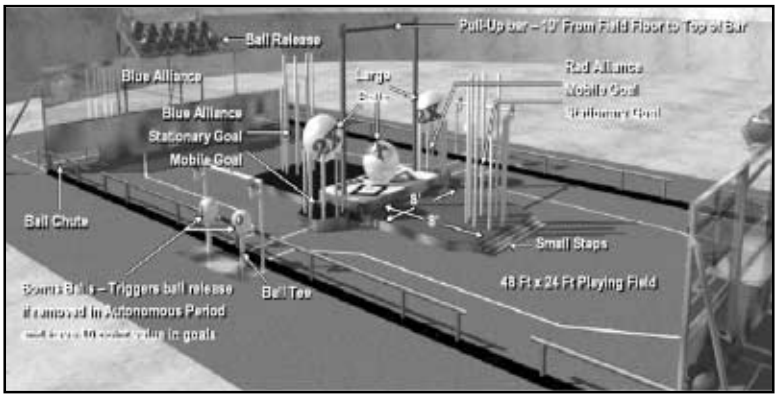
A Call to Serve

"It's time to act," was the message the Reverend Dr. Floyd Flake, president of Wilberforce University and former U.S. Congressman, shared at the annual Dr. Martin Luther King, Jr., Equality Recognition Ceremony held January 21. Supported by statistics on the number of Ph.D.'s, military officers, and medical doctors graduating from Historically Black Universities and Colleges (HBCU) cited earlier by Center Director Dr. Julian Earls, Flake discussed efforts to expand this pool of talent beginning at youth. Director Earls touted the benefits of partnerships initiated through NASA's HBCU Program, and joined Flake and Robert Romero, chief of Glenn's Office of Equal Opportunity Programs, in congratulating 62 Glenn technical monitors honored for their role in nurturing and overseeing HBCU students that will help produce research and products to meet NASA's mission needs.



C-2004-274 Photo by Quentin Schwinn

Dr. Flake, center, enjoys a standing ovation flanked by Deputy Director Christiansen, left, and Center Director Earls, right.



Graphic courtesy of FIRST

FIRST Robotics Competition

Buckeye Regional
March 26–27, 2004
Cleveland State University
Convocation Center

"FIRST Frenzy"—the actual name of the FIRST (For the Inspiration and Recognition of Science and Technology) robotics competition this year—will begin each day at 9 a.m. with opening ceremonies and conclude on Friday by 4:30 p.m. and Saturday at 3 p.m. The final award and recognition ceremony will immediately follow the competition on Saturday. Sixty teams from across the Midwest and Eastern United States will compete for scholarships, prizes, and the opportunity to attend the FIRST national competition in Atlanta. For more information, call Carol Galica (IDI/9200), 3–5112, or visit www.firstbuckeye.org

Thank You

The Glenn "Special" Children's Fund Committee would like to thank the Glenn community for generous donations received this past holiday season. As part of their charter, the Committee considers children of Center employees first before making donations to area charities. This year's recipient is 3-year-old Julia Sankovic, daughter of John (6712) and Patty Sankovic of Brecksville. The donations will enable Julia's continued progress toward independent mobility through Michigan-based TheraSuit therapy and a Hungarian-based intensive therapy program called Conductive Education, which is operated by the United Cerebral Palsy Association of Greater Cleveland. Neither of these two cutting-edge therapies are covered by health insurance. The 2004 Committee members are Timothy Hogan (7350), Helen Ceh (7000), Carol Stofka (0210), Herb Lawrence (7790), and Suzanne Aldrich (7330).

Photo by John Sankovic

Three-year-old Julia Sankovic learns how to stand independently at the Conductive Education Program hosted at United Cerebal Palsy of Cleveland.

Ask the Director

Q: There exists a great deal of interest in the announcement that the Center will be conducting a buyout. Employees in my area are asking several questions: When will the buyout details be announced, and will there be an early out associated with the buyout at Glenn? If not, why not?

This begins a series of Q&As to highlight topics of Labwide interest queried via the Director's new communication tool, "Ask the Director," now available on the Web IntraNet@Glenn (WING).

A: The Center has completed an assessment of the existing competencies and those required for the future. That review identified five competency areas where our current workforce levels exceed our projected requirements. Those competencies are Engineering and Science Support, Propulsion Systems and Testing, Research and Facilities Planning, Advanced Experimentation and Testing Technologies, and Advanced Materials and Processing Science. We are in the process of preparing a buyout plan/request for these specific areas. The plan needs to be approved by Headquarters, the Office of Personnel Management, and the Office of Management and Budget. The plan includes a request for early-out authority. We are hoping that the plan will be approved within the next 30 to 45 days. Additional information will be made available as this process proceeds.

Q: "I am 29 and I am a civil servant who works for NASA. I know other "young" people who are interested in working for NASA Glenn Research Center. We would like to know if hiring will ever increase at NASA Glenn, or should they look elsewhere?"

A: Based on the interest and feedback we receive from our recruitment efforts at universities, colleges, and other targeted outreach efforts, both locally and across the United States, we know that there is a deep interest on the part of many to be part of the NASA "family." However, hiring at NASA Glenn and at any of the Centers depends on programs, full-time equivalents (FTE), and NASA's budget. It can vary from year to year. During FY2003, we had 77 new hires (34 percent of the new hires were recent college graduates). For FY2004, we are projecting 40 full-time permanent hires.

Your interest in being a "recruiter" for NASA is commendable. We want the best and brightest to join our NASA family and help the Agency in accomplishing its unique mission. Continue to encourage students and others to apply for advertised positions that can be found at the NASA Jobs Web site: http://www.nasajobs.nasa.gov. In addition, there is a wide variety of student positions in the Agency from summer intern to co-op positions, Federal Career Internships, Presidential Management Fellowships, and summer faculty opportunities, etc.

Submit your questions to the Center Director on the Web at "Ask the Director" by clicking the link under Corporate Focus.

News Notes

LESA MEETING: LESA/IFPTE, Local 28, will hold its next monthly membership meeting on Wednesday, March 10, at noon in the , room 101.

FINANCIAL EDUCATION WORKSHOP: Century Federal Credit Union will host its first in a series of financial education workshops entitled "Understanding Your Credit Score and Consolidating Your Debt," on Friday, March 12, 8–9 a.m. in the , room 101. Tony Coniglio, vice president in Lending, will be the speaker. For more information, contact Jeff Staats, jstaats@cenfedcu.org.

WOMEN IN AVIATION & HISTORY: Glenn's onsite Visitor Center (VC) will host two sessions during the Saturday, March 20 weekend program dedicated to the contributions of women in history. A member of the Women in Aviation History Museum will give a presentation at 11 a.m. followed by the performing arts of the Women in History troupe at 1 p.m. For details, contact the VC, 216–433–2000.

AFGE MEETING: AFGE Local 2182 will hold its next monthly membership meeting on Wednesday, April 7, at 5 p.m. at , North Olmsted. All members are encouraged to attend.

Exchange Corner

- Save 30 to 70 percent off retail on items from "Jewelry is Fun," visiting the Main Cafeteria Alcove on Thursday, March 11, from 10 a.m. to 2 p.m.
- Celebrate St. Patrick's Day, Wednesday, March 17, with our corned beef, cabbage, boiled potato, and carrots lunch special served in the Main and DEB Cafeterias from 11 a.m. to 2 p.m.
- The Exchange Store will hold a special sale at the Plum Brook Station on Thursday, March 18, and Friday, March 19, from 11 a.m. to 1:30 p.m. The sale will be held in the Engineering Building, room 123.
- Just in time for Easter! The Exchange will host an Olympia Candy Sale Wednesday, March 31, and Thursday, April 1, in the Main Cafeteria Alcove from 10 a.m. to 2 p.m. Save 10 percent off retail on most items.

In Appreciation

We wish to extend our sincere gratitude to all in the Glenn community who offered their prayers and kind words around the passing of our mother, Mary Gaunter, in December. Your donations of flowers and contributions to the Ursuline nuns of Cleveland and to the St. Charles School endowment are truly appreciated. We three, indeed our entire extended family, thank you for your support.

—Jim, Bill, and Dan Gauntner

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"It's difficult to talk about those who made the ultimate sacrifice. But as we take this day to remember and listen to the names of these 46 heroes and sheroes, it's a chance to turn the search light inward and ask if we have made anything significant happen because we were here," said Director Earls. "For a name deserves to be remembered only in relationship to the effect its owner had upon the times. The only name that deserves reverence, whether famous or not, is attached to that person who, in greater or lesser degree, in accordance with his or her talent and opportunity, changed things for the better. These astronauts, test pilots, and other colleagues made many significant contributions."

Acting Space Director Rudolph Saldana and Systems Management Office Chief Randall Furnas took turns reading names from the list of NASA's 46 test pilots, astronauts, and support personnel who gave their lives to expand frontiers in air and space. Thereafter, everyone bowed their heads for a moment of silence.

C-2004-274 Photo by Marv Smith

The interactive CM-2 exhibit features a combustion chamber, drawers, and colorful buttons that enable visitors to perform some of the work that the astronauts performed with the Combustion Module. Actual space footage is played from the Laminar Soot Processes experiment. An STS-107 preflight multimedia presentation can also be accessed in the Visitor Center's "Mission Support Center" console adjacent to the CM-2 Trainer.

Those remembered at the ceremony included Howard C. "Tick"Lilly, research pilot; Ryland S. Carter, research pilot; Eugene P. Townsend, research pilot; Herbert H. Hoover, research pilot; Rudolph D. Van Dyke, Jr., research pilot; William L. Alford, research pilot; Donovan R. Heinle, research pilot; Theodore C. Freeman, astronaut trainee; Charles A. Bassett II and Elliott M. See Jr., astronaut trainees; Joseph A. Walker, research pilot and astronaut; Crew of Apollo Virgil "Gus" Grissom, Edward H. White, and Roger B. Chaffee, astronauts; Clifton C. Williams, astronaut trainee; Michael J. Adams, astronaut; James. P. Riley, Frank J. Brasmer, Herbert V. Cross, Gaeton P. Faraone, James F. Remington, John W.Yusken, Philip R. Wilcox, Roy Adkins, C.A. Robinson, E. Forslow, and B. Sorenson, research pilots and scientists; David Barth, research pilot; Wendell W. Kelley, research pilot; Paul Coy, flight test engineer; and George Mead, designer; Richard E. Gray, research pilot; Crew of Space Shuttle Challenger Francis R. "Dick" Scobee, Michael J. Smith, Judy A. Resnik, Ronald E. McNair, Ellison S. Onizuka, Gregory B. Jarvis, and S. Christa McAuliffe, astronauts; and Crew of Space Shuttle Columbia Rick D. Husband, William C. McCool, Michael P. Anderson, Kalpana Chawla, David M. Brown, Laurel B. Clark, and Ilan Ramon, astronauts.

An equally poignant part of Glenn's ceremony was the dedication of a new public exhibit in memory of Columbia's STS–107 crew. The Combustion Module-2 (CM–2) Crew Trainer exhibit was unveiled by Glenn Deputy Director Richard Christiansen and Over, who served as the CM–2 program manager and oversaw the crew's ground training at Glenn.

"This is a replica of the actual flight systems that all the members of the STS–107 crew trained on. They conducted over 80 experiments during the 16-day mission, including the three CM–2 experiments," said Over. "I know the STS–107 crew would appreciate this [interactive display] because it exemplifies what they were all about: educating the public about the important science and experiments conducted in space. I encourage my colleagues and friends, as well as the entire Glenn family, to be proud of the exhibit and bring your families to see it."

In closing remarks, Deputy Director Christiansen echoed Administrator O'Keefe's sentiments on the risks inherent in space exploration, and repeated his pledge of mission safety as the Agency's number one priority.

"These men and women have given their lives in service to the Agency. There are many things we do that are risky and sometimes deadly, but it's important to remain diligent in our work, and to watch out for one another."

Editor's note: All three crews were also honored on Mars through the recent triumphs of NASA's rovers Spirit and Opportunity. Opportunity's landing site was named Challenger Memorial Station, Spirit's landing site was named Columbia Memorial Station, and three hills visible from Spirit's site were named for the Apollo I crew. ◆

New STS–107 History Web Site Now Available

The NASA History office is pleased to announce a new Web site devoted to the STS–107 (Columbia) mission. This site contains a wealth of photos, news releases, documents, timelines, related links, and other information. It also contains a great deal of information about the Columbia Accident Investigation Board (CAIB) including the multiple volumes of its report.

URL: http://history.nasa.gov/columbia/index.html

Columbia Memorial Dedicated at Arlington

The families of the Space Shuttle Columbia STS–107 crew and NASA Administrator Sean O'Keefe unveiled a monument commemorating the astronauts and their mission at Arlington National Cemetery, Arlington, VA, on February 2.

"This memorial will remind us of the dedication and sacrifice made by those brave individuals willing to risk their own lives to further humanity's knowledge about space exploration. Our obligation is to ensure their loss was not in vain. We will return the Space Shuttle to flight as safely as humanly possible, and we will continue to lead humanity into the unknown,"Adminstrator O'Keefe said.

In April, President Bush signed into law the Columbia Orbiter Memorial Act (PL 108–11). The Secretary of the Army, in consultation with NASA and Arlington National Cemetery, coordinated the design and creation of the memorial. The Vermont marble memorial is 66 inches tall and 48 inches wide. It bears two bronze plaques portraying the Columbia's crew and the shoulder patch worn by the astronauts on their mission. The new memorial is located just a few feet from the one honoring the crew of the Space Shuttle *Challenger*.

Photo by Bill Ingalls

Caption: Sandy Anderson, wife of Columbia astronaut Michael Anderson, looks at the memorial along with astronauts Carlos Noriega, left, and Steve Robinson, right.

Committment to safety rewarded

A record 100 nominations were submitted to Glenn's Safety Office (GSO) for this year's Safety Awards Recognition Program held in February. A "Special Recognition" award was presented to honor the valor of **John Setlock** (CWRU/5130) and **Stephen Sofie** (QSS/5100) for their role in rescuing and administering first-aid care to an injured researcher until Glenn's First Responders arrived, following a laboratory fire in building 106 in December. Glenn Safety Awards were established to recognize individuals and organizations for their outstanding efforts to ensure that the Center remains a safe workplace.

Photo by Marv Smith

Safety and Assurance Director Vernon "Bill" Wessel, center congratulates Safety's Special Recognition Award winners Stephen Sofie, left and John Setlock.

All nominees are recognized for exceptional efforts; the following are 2003 Safety Award recipients: **Paul Starner** (7310) won the "Outstanding Support of a Civil Servant award" for his support of the Security Management and Safeguards Office as project manager of the Access Control Systems for installations Labwide; **Belinda Seljan** (IDI/7600) won the "Outstanding Support of a Service Contractor" (individual) award for her clerical support to Area 4 and Process Systems Safety committees and overall commitment to make safety work at Glenn; the **Logistics and Technical Information Division** won the "Outstanding Support of a Division/ Organization" award for their participation and implementation of GSO processes and support for GSO programs and publications; **Call Henry, Inc.**, won the "Outstanding Support of a Service Contractor" (group) award for the high-voltage crew's lost workday rate (zero per 100 occurrences over a 2-year period); HCI, Terrace, and Triad won the "Outstading Support of a Service Construction Contractor" award for no lost time accidents over a 4-year period of construction of the $10-million sewer system repair project, Phases 1,2, 3, and 4; and **Todd Strawser, Jeanine Hanzel, and James Gallagher** (IDI/0620) won a "Outstanding Support Team Safety "award for their contributions to GSO's rollout of the Center's hazards analysis procedure. ◆

Awakening young minds to technical possibilities

BY S. JENISE VERIS

Mark Rokoff, a civil-geotechnical engineer with URS Corporation, offered some tips for success in classroom presentations during the National Engineers Week (N.E.W.) Speaker Workshop hosted by Glenn's Educational Programs Office: "You have to get close to your audience—get the names of the students before responding to questions, be enthusiastic and intersperse some humor, but more importantly, get the message across that you like what you do; that you're passionate about your work!"

Photo by Jenise Veris

Dr. Bailey displays solar blanket used to dazzle students about exciting projects in engineering.

Rokoff was one of three veteran speakers invited to share their experiences for the "Key Points for School Presentations/ Discussion Session." Glenn's Dr. Daniel Paxson, aeronautics engineer, Controls and Dynamics Technology Branch, gave examples of how he engages children in grades K–6 with common, inexpensive objects to grasp the complexities of wind-tunnel testing and measurement. Dr. Sheila Bailey, electrical engineer, Photovoltaic and Space Environments Branch, presented her psychological approach to career planning that engages students in grades 9–12 to consider a career in engineering above other vocations.

"Improving proficiency test scores is high-priority among area schools, so workshop topics presented were targeted in response to teacher surveys that accompanied requests for N.E.W. curriculum-enhancing resources and visiting engineers," said Linda Little, N.E.W. program manager. "This year, we will send 82 speakers, including non-NASA employees; to fill 89 classroom requests."

EPO staff prepared and distributed N.E.W. packets, complete with speaker ideas and resources, student activities, and teacher handouts for workshop participants, who were also encouraged to stay for two concurrent breakout sessions to illustrate hands-on activities and demonstrations. Session I, "Environmental/Earth Science Hands-On Activities: Grades K–6" was presented by Marge Lehky, Aerospace Education Services program specialist. Session II, "The Microgravity Demonstrator: Grades 8–12" was presented by Nancy Hall, aerospace engineer and project scientist, Microgravity Fluid Physics Branch, and Malcolm Robbie (ANLX/6724), design engineer. ◆

Photo by Jenise Veris

Nancy Hall assisted by Malcom Robbie demonstrates part of a presentation on Mars: measuring the planet's distance from Earth.

Tacina earns N.E.W. award

The Cleveland Area National Engineers Week (N.E.W.) Committee presented the "Young Engineer of the Year" award to Glenn's Dr. Kathleen Tacina at an awards reception held at the Great Lakes Science Center, February 27. Tacina was selected for her outstanding accomplishments in the field of aerospace engineering and ongoing involvement in the community.

Dr. Tacina

A former NASA summer intern from 1993 to 1995, Tacina became a member of the Inlet Branch in the Turbomachinery and Propulsion Systems Division in 2001, where she performs pioneering research toward understanding the flow phenomena associated with the pulse detonation engine, a key to adapting this revolutionary technology to advanced propulsion systems.

Although still a relative newcomer herself, Tacina has already demonstrated strong leadership skills by mentoring a Glenn co-op and high school summer intern. The Brunswick native's leadership also extends to her community where she volunteers as a tutor, science fair judge, and teacher to students with disabilities at her parish's religion school. She is also an active member of the American Institute of Aeronautics and Astronautics, and Toastmasters, an organization that helps members to develop their communication skills. Those skills have enabled Tacina to represent the engineering profession with confidence.

Mark your calendars for

Glenn's Technology Showcase and Open House on June 11, 12, and 13.

Women's History Month

In recognition of Women's History Month, the second in a series of Heritage and Awareness month activities that will be featured in AeroSpace Frontiers, we polled several employees on this question:

What person or event inspired and/or empowered you to pursue a career in science and engineering, which up to the last decade was considered a nontraditional field for women?

Cooper

Beth A. Cooper, acoustical engineer and manager of the Acoustical Test Services, Engineering Design and Analysis Division. I intended to study music education in college, but my high school calculus teacher helped me to feel comfortable enough with math to consider an interdisciplinary engineering curriculum in music and acoustics. My college advisor later convinced me to channel my interest in acoustics into a career in mechanical engineering.

Dr. Dempsey

Dr. Paula J. Dempsey, mechanical engineer, Structure and Acoustics Division. The passage of Title IX prohibited discrimination on the basis of gender in any federally-funded education program. This legislation allowed me to take an industrial arts course in mechanical drawing, instead of the traditional home economics course required for female junior high students. I was encouraged by the instructor to take additional drafting courses and to apply to a mechanical engineering program.

Diem

Priscilla Diem, mechanical engineer and executive director of the Great Lakes Industrial Technology Center, NASA's Midwest Technology Transfer Center. I met Dr. Valerie Lyons, currently chief of the Power and On-board Propulsion Technology Branch, in church one Sunday. She told me that she worked at NASA and casually added—as an engineer. I was totally impressed! Valerie mentored me by first arranging for interviews with (then branch chief) Stuart Fordyce and then, providing me a personal loan to go back to school.

Johannsen

Rebecca Johannsen, health physics technician for the Reactor Decommissioning Project at Plum Brook Station. My mom was my source of inspiration. She took on the challenge of going back to school along with all her other responsibilities to become a nurse in her forties. When I was unsure of pursuing a career in radiation protection, she taught me to believe in myself and follow my dreams.

Women's History Month Event

Patty Hunt, director of Research, Hathaway Brown School, Guest speaker
Thursday, March 25, 9:30 – 11:30 am,

"Women Inspiring Hope and Possibility" is the 2004 National Women's History Month theme, and local teacher Patty Hunt is a great example. Hunt, formerly a research geochemist at British Petroleum, switched careers to become a science teacher at Hathaway Brown School, where she has become an exceptional role model for other young women. In 1998, Hunt initiated Hathaway Brown's Student Research Program, which has gained national prominence as an outstanding program to enable high school girls to perform research at the most prestigious institutions in the Cleveland area, including Glenn Research Center.

Hunt

The program will also feature the acting troupe "Women in History," who will give a glimpse at historical events through the eyes of Underground Railroad conductor Harriet Tubman and Helen Keller's mentor, Annie Sullivan. Glenn Federal Women's Program awards will be presented, and refreshments served immediately after the program, which is sponsored by the Women's Advisory Group.

NASA Workforce Flexibility Act

On February 24, 2004, President George W. Bush signed the NASA Workforce Flexibility Act into law. The bill, sponsored by U.S. Senator George Voinovich, provides new human resource flexibilites key to the Agency's future missions.

"We are very excited about our human capital legislation. With a quarter of our workforce eligible to retire in the next few years, fewer students graduating with degrees in science, engineering, mathmatics and technology, and an increased demand for technical talent, the flexibilities contained in this bill will give us additional tools to address the challenges of the 21st century and enhance our ability to recruit and retain the exceptional talent that NASA's mission requires," said Vicki Novak, assistant administrator for Human Resources at Headquarters.

You will receive more detailed information soon through representatives at your Center regarding this legislation. Meanwhile, we encourage you to visit our Human Capital Legislation Web site at http://nasapeople.nasa.gov/hclwp index.htm to learn more about the specific provisions, what they may mean to you, and our plans for implementing these new tools.

In Memory

Tadeusz Guzik, 79, who retired with 33 years of Government service in 1979, recently died. Guzik served as a model fabrication manager for the Fabrication Division.


Guzik

George Repas, 65, who retired with 35 years of Government service, including 31 to NASA until 1995, recently died. Although he was employed as an aerospace engineer at the Lab and gave his all for the Agency, Repas also offered his boundless energy to the local community.

Repas' name is listed on the National Wall of Honor at Dulles International Airport, Reston, VA, for his contributions to the aerospace industry, including design, fabrication, and installation of complex chemical propulsion test hardware, in addition to his engineering assistance to the U.S. Department of Defense. He was one of the test engineers who brought fame to the Cleveland Center's Rocket Engine Test Facility, a historic monument that had to be demolished last summer for Cleveland Hopkin's Airport expansion.


Repas

More recently, Repas supported Glenn's Space Combustion and Microgravity Test Engineering Branch as a part-time employee of QSS, an onsite contractor providing test engine services, and mentored many of the new hires. He also consulted on the major renovation of Purdue University's Rocket Lab, a one-of-a-kind-propulsion facility, to perform full-scale testing for NASA, the U.S. Air Force and U.S. Army, and other Federal agencies and aerospace companies.

Perhaps Repas' friends will remember him most of all for the enthusiasm, creativity, and talent that he lavished on the Center's Children's Holiday Show for more than 30 years. He served as organizer and chairperson, wrote plays, organized practices, encouraged other participants, decorated sets, sang, and contributed all the other intangible things that went into creating magic and lifetime memories for Center employees, their families, and guests.

Dr. Zeng-Guang Yuan (NCMR/6700) and **Dr. Uday Hegde** (NCMR/6711) recently received the American Institute of Aeronautics and Astronautics (AIAA) Best Paper Award in the microgravity discipline for their paper entitled "Recent Advances in Electric Field Effects on Diffusion Flames in a Spherically Symmetric System, "(AIAA 2003–0812) that was presented to the 41st Aerospace Sciences Meeting and Exhibit in Reno. It discusses the interaction between electric fields and flames based on results obtained from tests in NASA Glenn's 2.2-Second Drop Tower. These tests demonstrated that, contrary to the commonly believed notion that flames move toward the negative electrode, flames actually move toward the positive electrode under certain conditions. Yuan and Hegde's findings are intended to help in devising new flame control methods and guidance for computer modeling.


Dr. Yuan


Dr. Hegde

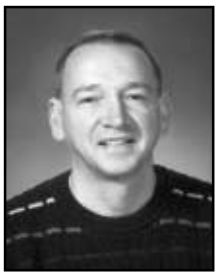
People

Glenn was the only multiple award winner at the annual NASA Procurement Training Conference awards dinner. The three Glenn employees recognized among nine Agency award recipients included **Ron Sepesi** (0616) for Supervisor of the Year, for his outstanding support to branch customers, the Procurement Division, Glenn, and the Agency; **Tim Pierce** (0612) for Contract Manager of the Year, for his outstanding support of the Next Generation Launch Technology Program, a major Agency initiative; and **Kurt Straub** (0613) for Policy Person of the Year, for his dedication, initiative, analytical and problemsolving skills, and cooperation and leadership as a Glenn Core Financial Module Super User.


Sepesi


Pierce


Straub


Dr. Gayda

Dr. John Gayda (5150) photo was omitted as a member of the team for U.S. Patent No. 6,647,809, titled "The Dual Microstructure Heat Process," published in the February 2004 issue of *Aerospace Frontiers*.

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.

Editor.....Doreen B. Zudell
InDyne, Inc.
Assistant Editor.....S. Denise Veris
InDyne, Inc.
Managing Editor.....Lori J. Rachul

DEADLINES: News items and brief announcements for publication in the April issue must be received by noon, March 12. The deadline for the May issue is noon, April 16. Submit contributions to the editor via e-mail, doreen.zudell@grc.nasa.gov, fax 216–433–8143, phone 216–433–5317 or 216–433–2888, or Ideas for news stories are welcome but will be published as space allows. View us online at http://AeroSpaceFrontiers.grc.nasa.gov.

WINNER 2002 APEX AWARDS FOR PUBLICATION EXCELLENCE

Retirements

Louis Goldman, Turbomachinery and Propulsion Systems Division, retired January 3, 2004, with nearly 42 years of service to NASA.

John Kaminski, Facilities and Test Installations Division, retired January 2, 2004, with 33 years of Government service including 25 to NASA.

William Klein, Engineering and Technical Services Division, retired June 28, 2003, with 39 years of NASA service.

William Nyerges, Educational Programs Office, retired January 31, 2004, with 38 years of Government service including 21 to NASA.

Martin Pietrasz, Test Installations Division, retired January 3, 2004, with 37 years of NASA service.

Richard Scheske, Jr., Facilities and Test Engineering Division, retired January 2, 2004, with 43 years of Government service including 39 to NASA.

Nancy Shaw, Microgravity Science Division, retired January 3, 2004, with 25 years of service to NASA.

Robert Solomon, Computer Services Division, retired January 3, 2004, with 37 years of service to NASA.

Goldman

Kaminski

James S. Sovey, Power and On-board Propulsion Technology Division, retired June 28, 2003, with 40 years of service to NASA.

Geraldine Ziemba, Aircraft Operations Office, retired January 3, 2004, with 34 years of service to NASA.

Nyerges

Scheske

Shaw

Solomon

Sovey

Ziemba

Behind the Badge

a closer look at our colleagues

Lisa E. Madden

Job Assignment: Senior information management specialist with Lockheed Martin Information Technology, Macintosh software support.

Time at NASA (years of service): 6 years.

Describe your family: I am divorced with two grown children. My daughter is a junior at . My son is 23 and on his own since age 19. We are close and enjoy vacationing together. They call me often and, of course, whenever they need computer help. I have two brothers and one sister, all younger. They are now going through the small children stage, and I can be the aunt who spoils the children! My mother died when I was 3, but my dad remarried. He and my stepmom live in

Dream job: Developing software for Apple Computer, preferably on a laptop near the ocean.

Most embarrassing moment: When my then 2-year-old son leaned over at an otherwise all-adult party to take a big bite out of the green pepper dip bowl, and all conversation stopped.

Social activities at Glenn: Secretary and newsletter editor for the Glenn Macintosh User Group.

Hobbies/interests outside of NASA: I like to play in clay every chance I get! I am a potter and have a kiln at my home with a 1700-sq.-ft. basement for a studio. I enjoy decorating my pottery, so it tends to be more on the dysfunctional side than a functional casserole would be. I am represented in two galleries on the west side of Cleveland, plus do commission work (hand-painted tiles), and try to be in several art shows per year. Another hobby of mine is graphic design. I publish several books a year in a sort of vanity press. I do all the editing of manuscripts, design and layout of the text and covers, some inside artwork, and handle all sales via my Web site and through an agent in England. I also enjoy sewing, knitting (have a knitting machine), working on computers, reading, and really anything creative.

Food temptations: Chocolate, Chocolate, Chocolate, what else is there?

Favorite Web site: http://junior.apk.net/~lisaeve, which is my Web site for the books I sell.

Unoffical coworkers build camaraderie

BY DOREEN ZUDELL

It all started in 1996 with a kidnapping in Publishing Services.

A photocopy of five blindfolded Pez candy dispensers belonging to Caroline Rist (IDI)—accompanied a ransom note: "ALL SAFE, WILL CONTACT SOON." After a series of ransom notes that demanded cookies, Tweety Bird, Bugs Bunny, Batman, Kermit, and Garfield were returned home safely, and the culprit, Patty Figula (now JDDI), was apprehended.

"With that little drama, the Pez family took on a life of its own," explained Pat Webb, IDI/Publishing Services. As the current caretaker, Webb oversees a collection that has grown to 111 dispensers.

While the Pez menagerie is impressive—with characters ranging from Muppets to Star Wars to Looney Toons—its uniqueness doesn't stop there. In 1997, Rist started a trend when she took the dispensers on her Oregon vacation. A trip to Cedar Point, the Grand Canyon, and Disneyland soon followed for the Pez travelers, who caught rides inside suitcases and purses of other employees.

Since those early adventures, the plastic figures have traveled to such exotic locations as Las Vegas, Greece, Hawaii, and Alaska. Along the way, they have gone hiking, horseback riding, swimming, dancing, and rock climbing—they have even visited Santa—sharing these experiences with their friends back at Glenn.

"The neatest part about the phenomenon is that coworkers often send postcards and bring back photographs of the Pez on the trips, which I preserve in a photo album," Webb explained. "This has made for great lunchtime chatter about our travels—through the perspective of these characters, and some pretty creative photographs."

These unofficial Glenn workers have transcended branch, division, and directorate lines. Several employees outside Publishing Services have taken the characters on trips as well. Their experiences are also included in the album.

"Some people may think the Pez collection is silly, but they have added a dimension of camaraderie to our group that is not easily duplicated," Webb said.

Several members of the Pez family traveled with Jim Lucic (IDI/0620) to Las Vegas, Nevada.

National Aeronautics and
Space Administration

John H. Glenn Research Center
Lewis Field
21000 Brookpark Road
Cleveland, Ohio 44135

Volume 6 Issue 3 March 2004

AeroSpace Frontiers
NASA Glenn Research Center

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