National Aeronautics and Space Administration
Langley Research Center

Langley Researcher News

Biweekly Employee and Contractor Publication

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NESC Offers Initial Report

Roe: 'I Feel Very Good About What We've Accomplished'

Ralph Roe, director of the NASA Engineering and Safety Center (NESC), speaks during the NESC Leadership Briefing on May 12 at NASA Headquarters. "We've completed our first four technical assessments," he said. "We're working on several new major activities, and requests for our services keep coming in."

Photo by Renee Bouchard

By KEITH HENRY
Langley Research Center

The NASA Engineering and Safety Center (NESC), created in the aftermath of the Space Shuttle Columbia accident to serve as an independent technical resource for NASA managers and employees, reported May 12 on its initial assessments.

Results of the Center's four "Pathfinder" studies were reported to senior NASA leadership from around the country at a meeting at NASA Headquarters. The reporting approach — proactively sharing lessons learned — was modeled after a similar method used by the U.S. Navy Board of Inspection and Survey.

■ **NESC Presents Awards To Five Employees**

■ **How to Report Technical Concerns**

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The NESC was created in November 2003 to improve safety by performing in-depth independent engineering assessments, testing, analyses and evaluation to uncover technical vulnerabilities and to

Continued on Page 5

McMaster Receives Presidential Rank Award

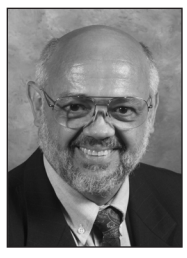
Leonard R. McMaster has been selected to receive the Presidential Rank of Meritorious Executive.

McMaster, who serves as Director of the Atmospheric Sciences Competency at NASA's Langley Research Center, was among 27 NASA executives recognized by President George W. Bush for their outstanding leadership, accomplishments and service to the federal government.

"This is a great honor," McMaster said. "As Isaac Newton said, 'It is because I have stood on the shoulders of giants.' The atmospheric scientists at Langley are unparalleled in their dedication and are making truly significant contributions to improving our understanding of the Earth's atmosphere and its impact on climate change."

Kay Coles James, director of the Office of Personnel Management, called the Presidential Rank Award recipients exemplary leaders who achieve great results and demonstrate a strong commitment to the call of public service.

"At this critical juncture in our nation's history, the American people demand and deserve only the most qualified leaders to work on their behalf," she said. "They are examples of the best and brightest the federal government has to offer."



McMaster

McMaster began working at NASA Langley after earning a bachelor's degree in physics from the College of William and Mary in 1967. His early research included work on several space programs, including Pioneer 11 and 12, and many atmospheric science programs. He also earned a juris doctorate from William and Mary's Marshall-Wythe School of Law in 1976.

McMaster went on to serve as deputy manager of the Tropospheric Air Quality Program at NASA Headquarters in 1982. He returned to NASA Langley in 1983 and served as assistant head of the Aerosol Research Branch. From 1990 to 1999, he served as assistant chief of the Aerospace Electronic Systems Division. He was appointed Chief of that division in 1999 and, shortly thereafter, was named Director of the Atmospheric Sciences Competency.

In addition to the work he does for NASA, McMaster is a member of the Virginia Bar Association and is a licensed, instrument-rated private pilot. He also has taught physics for York County High School's International Baccalaureate Program.

For more information on the Presidential Rank Awards, visit: <www.opm.gov/ses/presrankaward.asp>.

Inside This Issue:

NASA Vision: *To improve life here, To extend life to there, To find life beyond*
NASA Mission: *To understand and protect our home planet ● To explore the Universe and search for life To inspire the next generation of explorers ... as only NASA can*

Briefs

Around the Agency

NASA SELECTS NEW ISS MANAGERS

Two International Space Station (ISS) managers are taking on new positions in the program. Michael T. Suffredini has been named ISS deputy program manager at Johnson Space Center, and Mark S. Geyer will replace Suffredini as mission operations integration manager for the ISS Program. After a transition period, the assignments formally begin in August.

"I am fortunate to have these two experienced managers on the ISS team," said ISS Program Manager Bill Gerstenmaier. "I look forward to working with them in their new roles and continuing successful operation of the ISS Program and vehicle." NASA HQ RELEASE: 04-157

NASA HONORS TOP COMPANIES

Three U.S. companies recently received NASA's George M. Low Award. The Low award is NASA's highest honor for quality and technical performance. It is the nation's oldest award for organizational quality.

NASA Administrator Sean O'Keefe presented the awards at the 18th NASA Continual Improvement and Reinvention Conference. Marotta Controls, Inc., of Montville, N.J., received the award for small-business product. Lockheed Martin Space Operations, Integrated Technology Solutions, of Huntsville, Ala., was the winner in the large-business service category. Spectrolab, a Boeing Company, of Sylmar, Calif., received the award for large-business product.

Companies were evaluated for performance, cost, schedule, innovation, management leadership, customer orientation, adherence to the Total Quality Management philosophy, and alignment of organizational goals with NASA's strategic plans. NASA HQ RELEASE: 04-145

NASA SIGNS MOU TO AID HEALTH RESEARCH

NASA's Office of Earth Science has signed a Memorandum of Understanding (MOU) with the Centers for Disease Control and Prevention (CDC) to promote cooperation of U.S. agencies and departments in advancing the research and development of environmental public health.

The MOU provides the interagency mechanism to accomplish the President's Management Agenda, which emphasizes the importance of integrated performance and budget to provide solutions for U.S. citizens. The MOU enables NASA and the CDC to work together to identify areas of mutual interest, implement projects or programs that address the goals and objectives of both agencies.

NASA and the CDC will cooperate to provide services and support, conduct science and technology research and activities in the area of Earth remote sensing. NASA's unique capabilities in Earth observations, modeling, and systems engineering will help characterize the relationship between environmental hazards, human exposures to risks and potential health effects.

For information about the CDC's environmental health program on the Internet, visit: <http://www.cdc.gov/nceh/>. NASA HQ RELEASE: 04-143

Library Alliance Meets At Langley

Langley Research Center's Technical Library hosted the spring meeting of the National Research Library Alliance (NRLA) on April 30. It was the first NRLA meeting hosted by a NASA library and the first held outside the Washington, D.C., area. Pictured are (standing, left to right): Peter Banholzer of Goddard Space Flight Center, Joseph Langdon of Ames Research Center, Stephanie Bianchi of the National Science Foundation, Victoria Harriston of the National Academy of Sciences, James King of the Naval Research Laboratory, Barbara Blummer of the Institute for Defense Analyses, Susanne Oberc of Glenn Research Center, Bradley Gernand of the Institute for Defense Analyses, and Margo Young of the Jet Propulsion Laboratory. Carolyn Helmetsie of Langley is seated. The mission of the NRLA is to improve access to a common core of scientific information required by the user communities of the member libraries.

Photo by Jeff Caplan

In Memoriam

Ray E. Goodman

Ray E. Goodman died on April 29 at the age of 88. Goodman, a native of Cabarrus County, N.C., served in the U.S. Navy from 1941 to 1945. He went on to work at NASA, retiring as a quality control inspector in 1976.

Harry H. Heyson II

Harry Hamilton Heyson II died on May 9 at the age of 78. Heyson, a native of Far Rockaway, N.Y., served in the U.S. Army Air Force and was a veteran of World War II. He went on to work for NACA and NASA, retiring in 1986 after 37 years of service.

Heyson made major contributions in defining rotary-wing flow fields, on momentum theory for V/STOL aircraft, and on wind-tunnel wall effects. He received awards for his contributions to the Pegasus and Apollo programs, and he held a patent on his design work on variable-geometry wind tunnels.

He was a member of the American Helicopter Society, the American Institute of Aeronautics and Astronautics and the American Geophysical Union.

Weimer Tuovila

Weimer "Presto" Tuovila died on April 30 at the age of 84. Tuovila, a native of Overtorneo, Sweden, served in the U.S. Air Force and was a veteran of World War II. He went on to work was an aeronautical engineer for NACA and NASA.

Letter

"I would like to thank all my friends and co-workers for the nice party and generous gift given me honoring my retirement from Langley Research Center after just over 41 years of service. Over the years, Langley was a great place to work, and my being able to work and associate with such great people definitely enhanced my career. I leave the Center with many fond memories, but I will especially cherish the interactions that I had with each and every one of you. May you be blessed as we each continue our journey into the future."

John F. Wilson

Researcher News

The Researcher News is an official publication of Langley Research Center, National Aeronautics and Space Administration, Hampton, Va., 23681-2199. It is published every other Friday in the interest of all Langley staff, contractors and retirees and has a circulation of approximately 8,100. It is distributed to all Langley civil service employees, contractors, retirees and on-site university personnel, with limited distribution to NASA Headquarters, other NASA centers and, by special request, to other non-NASA individuals and organizations. Questions related to the content and distribution of the Researcher News should be addressed to Keith Henry, Mail Stop 115, (757) 864-6120. Submit contributions/SDL 026, 055, 110 changes to the editor via e-mail <j.r.roberts@larc.nasa.gov>, fax (757) 864-6477, telephone (757) 864-8150 or Mail Stop 293. Articles, photos and announcements are due at noon the Monday following the date of this issue.

Managing Editor ..... Keith Henry

Editor ..... Jim Roberts
Planners Collaborative/
Science and Technology Corp.

Assistant Editor ..... Bill Uher
Planners Collaborative/
Science and Technology Corp.

Photographer ..... Jeff Caplan
Planners Collaborative/
Science and Technology Corp.

The privilege of listing announcements in this publication is restricted to the employees, contractors and retirees of the Langley Research Center. Articles must be offered without regard to race, color, religion, sex or national origin. All materials are subject to editing.

Read the *Researcher News* online at <http://researchernews.larc.nasa.gov>.

Letters To The Editor Policy Established

Based on feedback to Langley Research Center's Culture Kick Start team and requests from individuals, the Center will begin publishing letters to the editor in the Researcher News.

In the past, the Researcher News published thank you letters from recent retirees and from employees who benefited from NASA's Voluntary Leave Transfer Program. Now, employees, on-site contractors and retirees have a forum to express their opinions on any number of topics pertinent to NASA or, more specifically, the work and activities at Langley.

The policy: "The Researcher News accepts signed letters to the editor from Langley Research Center employees, on-site contractors and retirees. Letters are limited to 200 words and will be edited only for grammar. When necessary, letters may be edited for space, but only with the author's approval. Letter-writers are limited to one submission on a topic every six months. Questions regarding this policy should be directed to Keith Henry, managing editor, at 864-6120 or <h.k.henry@nasa.gov>."

Langley's Public Affairs Office drafted the policy after researching the policies of the Daily Press and the Virginian-Pilot and consulting with the editors of other NASA newsletters. The Researcher News is the first NASA newsletter to adopt a letters to the editor policy.

The Researcher News is published biweekly (25 times per year) for employees, on-site contractors and retirees. Distribution to other NASA facilities and industry and academic partners brings the total print audience to about 7,200. The Researcher News Online significantly increases the publication's readership. In fiscal year 2003, the web site recorded nearly 2.5 million hits.

Letters should be e-mailed to Jim Roberts at <j.r.roberts@larc.nasa.gov> or mailed to the Researcher News at Mail Stop 146.

Astronaut Candidates Introduced

Two Members Of 2004 Class Have Ties To Hampton Roads

By MELISSA MATTHEWS
NASA Headquarters

and DWAYNE BROWN
NASA Headquarters

NASA's 2004 astronaut candidate class was introduced on May 6 during Space Day activities at the National Air and Space Museum Udvar-Hazy Center in Chantilly.

Two of the astronaut candidates have ties to Hampton Roads: Mission Specialist Christopher Cassidy is a Navy SEAL based in Norfolk, and Mission Specialist Robert Satcher was raised in Hampton.

"These are the astronauts who will lead us through the next steps in the new exploration vision," NASA Administrator Sean O'Keefe said. "The class is made up of pilots and engineers who will help us develop the next generation vehicle, scientists who will do research to help humans live and travel in space and three new educator astronauts to help ensure a new generation is ready for the challenges of exploration," he said.


Cassidy


Satcher

Cassidy, 34, was born in Salem, Mass., and raised in York, Maine. He has degrees from the U.S. Naval Academy and the Massachusetts Institute of Technology. He completed two tours of duty in Afghanistan and earned a Bronze Star.

Satcher is an orthopedic surgeon at Northwestern Memorial Hospital in Chicago. He has degrees from the Massachusetts Institute of Technology and Harvard University. He performs research in muscular-skeletal oncology and has done charity medical work overseas.

The other astronaut candidates:

■ Mission Specialist-Educator Joseph Acaba, 36, of Dunnellon, Fla.; math and science teacher at Dunnellon Middle School; born in Inglewood, Ca.

■ Mission Specialist-Educator Richard Arnold, 40, of Berlin, Md.; currently lives in Bucharest, Romania; math and science teacher at the American International School of Bucharest; born in Cheverly, Md. and raised in Bowie, Md.

■ Pilot Randolph Bresnik, Major, U.S. Marine Corps, 36, an F/A-18 pilot and experimental test pilot based in San Diego, Calif.; born in Fort Knox, Ky.

■ Pilot James Dutton, Major, U.S. Air Force, 35; an F/A-22 test pilot stationed in Edwards, Calif.; born and raised in Eugene, Ore.

■ Mission Specialist Jose Hernandez, 41, of Houston; engineer and branch chief at NASA's Johnson Space Center (JSC); born in French Camp, Calif.; grew up as a migrant farm worker before settling in Stockton, Calif.

■ Mission Specialist R. Shane Kimbrough, 36, Major, U.S. Army, of Houston; flight simulation engineer at JSC; born in Killeen, Tex.; considers Atlanta his hometown.

■ Mission Specialist Thomas Marshburn, M.D., 43, of Houston; flight surgeon at JSC; born in Statesville, N.C.; raised in Atlanta.

■ Mission Specialist-Educator Dorothy Metcalf-Lindenburger, 28, of Vancouver, Wash.; science teacher at Hudson's Bay High School; born in Colorado Springs, Co. and raised in Fort Collins, Co.

■ Mission Specialist Shannon Walker, Ph.D., 38, of Houston; a manager at JSC overseeing the technical health of the International Space Station; born and raised in Houston.

■ *Full biographies and still photos of the astronaut candidates are available at: <http://www.nasa.gov>.*

Doug Peterson of Johnson Space Center also contributed to this story.

Gregory Inducted Into Astronaut Hall Of Fame

By MELISSA MATTHEWS
NASA Headquarters

NASA Deputy Administrator Frederick D. Gregory was one of five explorers inducted into the U.S. Astronaut Hall of Fame on May 1 at the Kennedy Space Center Visitor Complex.

Gregory logged more than 455 hours in orbit on three missions and was the first African-American to command a Space Shuttle mission. He has served in a number of key NASA posts, including Associate Administrator for Safety and Mission Assurance and Associate Administrator for Space Flight. He became Deputy Administrator in 2002.

He earned a bachelor's degree from the U.S. Air Force Academy and a master's degree from George Washington University. He served 30 years in the U.S. Air Force and retired as a colonel in 1993.

Gregory served as a research test pilot at Langley Research Center from 1974 until he was selected as an astronaut in 1978.

"The opportunity to serve this country as an astronaut has always been honor enough for me," Gregory said. "I appreciate the recognition from the Astronaut Hall of Fame, and I feel proud to be in the company of the other remarkable explorers being inducted this year."


Gregory

Other inductees were:

■ **Richard O. Covey**, who piloted the first Space Shuttle mission following the Challenger accident and commanded the 1993 Hubble Space Telescope repair mission. He is leading the task group making an independent assessment of NASA's current Return to Flight efforts.

■ **Francis R. Scobee**, commander of the 1986 Challenger mission that ended in disaster 73 seconds after liftoff.

■ **Kathryn D. Sullivan**, NASA's first female spacewalker in 1984. She also helped launch the Hubble Space Telescope in 1990.

■ **Dr. Norman E. Thagard**, the first American to live on Russia's Mir space station. He spent 115 days working on Mir in 1995.

Biographical information on the Hall of Fame inductees is available on the Internet at: <http://www.jsc.nasa.gov/Bios/astrobio_former.html>.

With this year's inductees, the U.S. Astronaut Hall of Fame has honored 57 people.

Andrea Farmer of the Kennedy Space Center Visitor Complex also contributed to this story.

Hampton University Selected To Lead AIM Mission

By DONALD SAVAGE
NASA Headquarters

Two NASA missions to explore the boundaries of Earth's atmosphere with space are scheduled for launch in 2006. Both have recently completed preliminary design phases and are ready to proceed with hardware fabrication, integration and testing.

The Aeronomy of Ice in the Mesosphere (AIM) Small Explorer will determine the causes of Earth's highest-altitude clouds, which occur on the very edge of space.

These clouds form in the coldest part of the atmosphere, about 50 miles above the polar-regions, every summer. Recorded sightings of these silvery-blue, noctilucent or "night-shining" clouds began in the late 1800s at high latitudes. They have been increasing in frequency and extending to lower latitudes over the past four decades.

Scientists have hypothesized the more frequent occurrences may be an indicator of global warming, but until now they have not been able to test this idea. Since similar thin high altitude clouds have been observed at Mars, what AIM teaches us about Earth's noctilucent clouds should help us understand the similarities and differences between the martian and terrestrial atmospheres.

AIM will measure all the parameters important to understanding noctilucent cloud formation. This will help determine the connection between the clouds and their environment and serve as a baseline for the study of long-term changes in the upper atmosphere. James Russell III of Hampton University leads AIM as Principal Investigator.

The second mission is the Time History of Events and Macroscale Interactions during Substorms mission (THEMIS). A Medium Explorer mission, it will fly five small spacecraft through explosive geomagnetic disturbances to solve the mystery of what triggers the colorful eruptions of the Northern and Southern lights.

These violent "substorms" reflect major reconfigurations of near-Earth space and have significant implications for space weather, affecting satellites and terrestrial communications.

Over the years several different hypotheses have been proposed to explain this phenomenon. THEMIS will use five probes, strategically placed in different regions of the magnetosphere, to determine which explanation is correct. THEMIS is led by Vassilis Angelopoulos of the University of California, Berkeley.

The Explorer Program is designed to provide frequent, low-cost access to space for physics and astronomy missions with small to mid-sized spacecraft. Goddard Space Flight Center manages the Explorer Program for NASA's Office of Space Science.

■ *For more information and artists' concepts of the AIM mission on the Internet, visit: <http://aim.hamptonu.edu/>. For more information about the Explorer program on the Internet, visit: <http://fpd.gsfc.nasa.gov/410/index.html>.*

NASA Honored For Women-Owned Contracts

By MARTA METELKO
NASA Headquarters

NASA's Office of Small and Disadvantaged Business Utilization (OSDBU) received the 2004 Diversity Innovator Award on May 11 at the National Womens Business Center Annual Entrepreneurial Visionary Awards Gala.

The National Women's Business Center and the Ivy Planning Group LLC sponsor the Diversity Innovator Award. The competitive award recognizes excellence in diversity and honors companies and organizations that have implemented innovative diversity initiatives.

"I'm proud that we've been given this award," said Ralph Thomas, NASA's Assistant Administrator for the OSDBU. "We have made every effort to reach out to small, minority- and women-owned businesses and others in some of the most critical NASA missions. Although OSDBU received this award, we had a lot of help from the small business specialists our 10 field centers and from the whole NASA family. NASA supports small business, and the work we do couldn't be done without the atmosphere that NASA gives."

Vernon Vann, Langley Research Center's small business specialist, said the Center has exceeded its goal for women-owned businesses for the last four years. In fiscal year 2003, Langley had contracts with 18 women-owned businesses. Combined with approximately 100 purchase order procurements, the Center's obligation to women-owned businesses was $14.2 million.

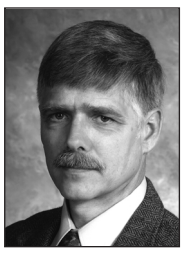
The OSDBU recently released a collection of profiles illustrating the diverse and important work performed by women-owned contractors as well as the outstanding women leading the companies.

The publication, titled "Women Contractors at NASA: Selected Profiles of Women-Owned Small Businesses," is available on the OSDBU web site: <http://www.osdbu.nasa.gov>.

Colloquium and Sigma Series Lectures

McClinton On 'Scramjet-Powered Vehicles'

Charles R. McClinton will present a Colloquium lecture titled "Scramjet-Powered Vehicles: Force or Fiction" at 2 p.m. June 1 in Langley Research Center's H.J.E. Reid Conference Center. A Sigma Series lecture titled "X-43: Breaking the Hypersonic Barrier" will follow at 7:30 p.m. at the Virginia Air & Space Center in Hampton.


McClinton

The Lecture

NASA interest in Hypersonic, Air-Breathing (HAB) Systems for earth-to-orbit started in the 1960s. During the '60s and early '70s, Langley was organized to address this vision. As NASA focus shifted toward rockets, Langley maintained the agency lead for a modest program for HAB technology development during the '70s, '80s and early '90s, when HAB technology leadership was transferred to the Space Launch Initiative at Marshall Space Flight Center.

This briefing will highlight accomplishments by NASA over the last four decades and present a vision for the future. Highlights and implications of the recent successful X-43 flight, the first scramjet-powered vehicle, will be discussed.

The Speaker

McClinton is a senior researcher at Langley, where he has worked since 1967. He received a bachelor's degree in aerospace engineering from Virginia Polytechnic Institute in 1967 and a master's degree in mechanical engineering from George Washington University in 1971.

For the last four years, McClinton has been instrumental in various planning capacities for several HAB technology development programs. In 1996, he was selected as Technology Manager for the Hyper-X Program. In this role, he is responsible for the Hyper-X vehicle definition to meet mission requirements, delivery of government-furnished items to the contractor team, wind tunnel testing and hypersonic technology development.

Prior to that, McClinton was selected to form and lead the Numerical Applications Office of the National Aero-Space Plane (NASP) Office. He is the past chairman of the JANNAF (Joint Army, Navy, NASA, Air Force) Air-breathing Propulsion Subcommittee.

Future Lectures

- **July 13:** Mark Jones on "Electronic Textiles"
- **Aug. 3:** TBD
- **Sept. 14:** Ranji Vaidyanathan on "Advanced Materials Research"

For more information about the lecture series, visit <http://shemesh.larc.nasa.gov/Lectures/> on the Internet.

McClinton has 18 years of experience in wind tunnel testing of scramjet engines and components, has authored numerous publications and has received several national awards.

Integrated Financial Management (IFM) Program Update

Team Is Improving Reimbursables Process

Langley Research Center's senior staff will hear recommendations of the Center's Reimbursables Re-engineering Team on May 28.

"The team has been extremely diligent in their pursuit of a process that meets customer needs in a timely and proactive manner," said Jorge Otero, the Office of the Chief Financial Officer (OCFO) employee who leads the team. "I am confident that their recommendations will decrease the amount of time needed to complete the Reimbursables process by eliminating unnecessary steps and ensuring user knowledge through training and education."

The term "Reimbursables" refers to new or existing Langley customer relationships that require reimbursement for the use of government facilities, services and materials provided to the customer pursuant to a Space Act Agreement (i.e., the direct costs, indirect costs and General and Administrative (G&A) costs associated with the agreed upon work to be performed).

The implementation of "full-cost" accounting at Langley Research Center led to costly process delays and a loss of Reimbursables-funded business opportunities. Langley's senior staff called for a review of the Reimbursables process last year, and, following workshops in December and January, recommended a "re-engineering" of the process.

> *"The recommendations of this team should provide a dramatically improved process that is simpler and much more efficient."*
>
> **Pete Jacobs**

Langley's OCFO assumed responsibility for the effort and assigned Otero to formulate a Reimbursables Re-engineering Team to evaluate the issues associated with the current process and propose an improved procedure to be used in its place.

The team — comprised of Marilyn Aldrich, Rebecca Bales, Joyce Bartlett, Rick Buonfigli, Chris Chromik, Pete Jacobs, Kevin Love, Laurie Roberts, Ray Turcotte and Booz Allen Hamilton consultants Mike Harris, Michael Kimener, Nicole Lee and Lynn Waters — began meeting on a regular basis in February. As word of the effort spread, it was placed under the purview of the Business Processes, Tools & Techniques Kick Start Team, led by Ed Waggoner.

The team identified multiple issues and potential solutions by conducting interviews with Center personnel in March and off-site benchmarking visits at Ames Research Center, the Jet Propulsion Laboratory and the Lawrence Berkeley National Laboratory.

Since March, the team has met regularly to develop their final recommendation, which will be presented to senior staff by Ed Waggoner of the Business Processes, Tools & Techniques Team.

"This effort is too important to the future of the Center for me to sit on the sidelines," said team member Pete Jacobs. "The recommendations of this team should provide a dramatically improved process that is simpler and much more efficient."

***Note:** The Business Processes, Tools & Techniques Kick Start Team is still soliciting input relative to the Reimbursables process. To provide feedback, contact Ed Waggoner at 864-5058 or <edgar.g.waggoner@nasa.gov>.*

■ *For more information on the IFM Program at Langley, visit: <http://ifmp.larc.nasa.gov>.*

NESC Presents Awards To Five Employees

By KEITH HENRY
Langley Research Center

The first NASA Engineering and Safety Center (NESC) awards were presented to NASA employees representing four centers at the NESC Leadership Briefing on May 12.

Four award categories have been established to recognize individual employees for "outstanding contributions to NESC's sponsored activities and to encourage critical examination of engineering problems."

The NESC Leadership Award was presented to Luat T. Nguyen of Langley Research Center and Michael G. Ryschkewitsch of Goddard Space Flight Center. Nguyen was honored for exceptional leadership in responding to a dissenting opinion regarding the modified Pegasus/X-43A launch vehicle aerodynamics. Ryschkewitsch was honored for exceptional leadership in promoting an environment in which technical concerns are brought forward and appropriately addressed.

The NESC Engineering Excellence Award was presented to Timothy R. Jett of Marshall Space Flight Center for extraordinary leadership that contributed to engineering excellence in support of the Rudder and Speed Brake Independent Assessment Team.

The NESC Director's Award was presented to Richard M. Wood of Langley and Erwin V. Zaretsky of Glenn Research Center. Wood was recognized for his personal commitment to advocating further assessment of the aerodynamic risks associated with the flight of the modified Pegasus/X-43A launch vehicle. Zaretsky was recognized for his exemplary contributions and personal leadership in advocating further inspection and testing of the Space Shuttle Orbiter Rudder and Speed Brake actuators.

The fourth award category, the NESC Group Achievement Award, was not presented.

Bryan O'Connor (left), NASA's Associate Administrator for the Office of Safety and Mission Assurance, and STS-114 Astronauts Charles Camarda (second from left) and Eileen Collins (right) pose with the five NASA employees who received NASA Engineering and Safety Center (NESC) awards on May 12: Luat T. Nguyen, Michael G. Ryschkewitsch, Timothy R. Jett, Michael Gilbert (for Richard M. Wood) and Erwin V. Zaretsky. Nguyen and Wood work at Langley. The awards were established to recognize individual employees for "outstanding contributions to NESC's sponsored activities and to encourage critical examination of engineering problems."

Photo by Renee Bouchard

NESC

Continued from Page 1

recommend appropriate preventative and corrective actions for problems, trends or concerns within NASA's programs, projects and institutions.

"I feel very good about what we've accomplished in our first six months," said Ralph Roe, NESC director, based at Langley Research Center. "We have a talented core of people working within NESC and an outstanding group of people matrixed to NESC that we can call upon when needed. We have positive feedback from the partnerships we've begun with industry and academia. We've completed our first four technical assessments; we're working on several new major activities, and requests for our services keep coming in," he added.

The initial assessments were related to four research projects: Cloud-Aerosol LIDAR and Infrared Pathfinder Satellite Observation (CALIPSO) spacecraft, an earth science satellite set to launch in 2005; X-43A, a hypersonic research vehicle that made news with a successful flight in March; the Space Shuttle orbiter rudder/speed brake system; and the Mars Exploration Rovers, now exploring the surface of Mars.

While the NESC's current focus is on a successful Space Shuttle return to flight and the International Space Station, it is involved in other activities across NASA. For example, NESC is providing independent expertise for the Cassini Saturn Orbit Insertion critical events readiness review.

The initial study topics were picked because of their importance, their manageable size and because of their potential to teach the NESC how best to organize itself and conduct independent analyses of critical technical issues.

In the case of CALIPSO, a joint science mission that includes NASA and the French space agency, a concern about possible leaks of the spacecraft's highly-reactive fuel from joints in the fuel lines during ground processing led to multiple recommendations to minimize risk to personnel, the mission and the environment.

The record-breaking hypersonic X-43A did not fly until a dissenting opinion by one X-43A team member was properly addressed. The employee contacted the NESC with a concern that the research vehicle's aerodynamic characteristics could potentially lead to a loss of vehicle control, resulting in failure to achieve mission objectives. The NESC worked in conjunction with the X-43A project to ensure that the employee's concern was properly addressed.

During renewal of hardware in a Space Shuttle orbiter rudder/speed brake system, a concern was raised about the effectiveness of grease in the gear set of the replacement hardware that had been retrieved from long-term storage. NESC conducted extensive tests and analyses to determine that the grease is still effective. A lesson learned was that programs should periodically review hardware components to ensure that qualification and certification limits are not exceeded.

Prior to the two Mars Exploration Rover landings on Mars in January, the NESC participated in two program reviews. One review dealt with the very human challenge of supporting round-the-clock staffing for a mission to Mars, where the Martian day is 40 minutes longer than an Earth day. The second review looked at entry, descent and landing data from the first rover landing as a guide to fine-tuning the entry, descent and landing of the second rover. While both landings were highly successful, the review revealed that current spacecraft instrumentation was not designed to adequately record the aerodynamic environment encountered during descent.

Summaries of the four Pathfinder reports, a video clip, publication quality images and additional information about NESC are available on the Internet at: <http://nesc.nasa.gov>.

Keith Henry works in Langley's Public Affairs Office.

How to Report Technical Concerns

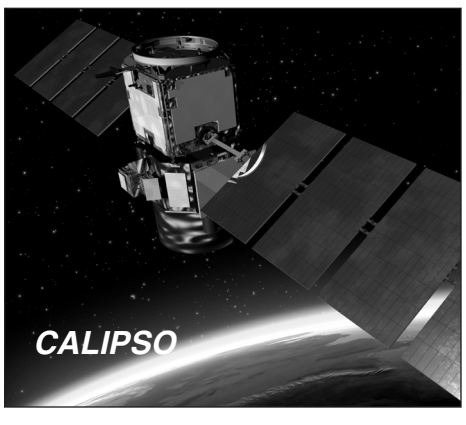
The NESC provides an independent line of communication to ensure that all NASA employees have an alternate path to report technical concerns and to encourage consideration of all points of view on critical technical issues.

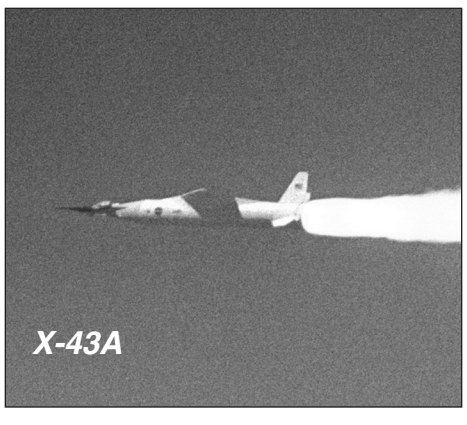
All general questions and requests for NESC technical reviews should be e-mailed to <NESC@nasa.gov>. Anonymous technical requests may be made by mailing them to NESC, NASA Langley Research Center, Mail Stop 118, Hampton, VA 23681.

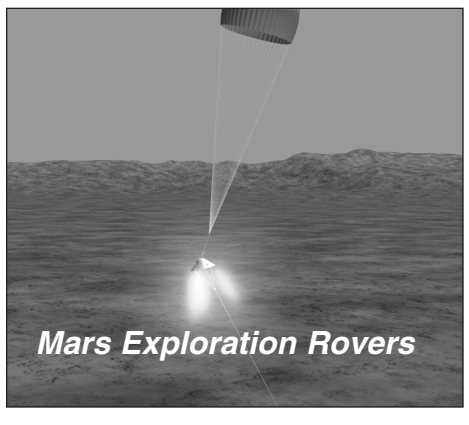
Each NASA field center and Headquarters has a local NESC representative who serves as a point of contact for center-based issues related to the NESC. Find information for your local contact through the NASA X.500 directory.

Langley's contact is Michael G. Gilbert. Other center contacts are: NASA Ames, Michael S. Freeman; NASA Dryden, Michael W. Kehoe; NASA Glenn, Derrick J. Cheston; NASA Goddard, Michael Hagopian; NASA Headquarters, John E. Tinsley; Jet Propulsion Laboratory, Matthew R. Landano; NASA Johnson, David A. Hamilton; NASA Kennedy, Timmy R. Wilson; NASA Marshall, Danny Johnston; and NASA Stennis, T. Randy Galloway.

The Four 'Pathfinder' Studies







AdVentures

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The deadline for the June 4 edition is May 24. Send submissions to <j.r.roberts@larc.nasa.gov>.

Langley Air Show From May 21-23

Langley Air Force Base will host the annual "Air Power Over Hampton Roads" air show from 5 to 10 p.m. **May 21** and from 9 a.m. to 5 p.m. **May 22-23**.

This year's highlights will include a concert by country singer Aaron Tippin, a nighttime air show and a fireworks display on May 21 and a performance by the U.S. Air Force Thunderbirds at 4:30 p.m. May 23.

Langley Research Center employees, contractors and retirees will be on-hand staffing NASA exhibits.

For more information about the event, visit: <http://www.langleyairshow.com/>.

Hyper-X Celebration Planned

Langley Research Center will host a Hyper-X Team award celebration at 2 p.m. **June 2** in the H.J.E. Reid Conference Center. Center Director Roy D. Bridges Jr. will present an award to the NASA X-43A Team for its successful flight of an airframe-integrated scramjet-powered vehicle at the world speed record of Mach 7.

All civil servants, contractors and retirees are invited to attend.

Drell To Speak At ODU Symposium

Sidney D. Drell, a senior fellow at the Hoover Institution and professor emeritus of theoretical physics at the Stanford Linear Accelerator Center (SLAC), will speak at 8 p.m. **June 4** in Old Dominion University's Mills Godwin Jr. Building.

The talk, which is free and open to the public, is part of the third international symposium on the Gerasimov-Drell-Hearn Sum Rule, hosted by ODU's physics department and the Thomas Jefferson National Accelerator Facility from June 2-5.

For more information, contact Sebastian Kuhn at <gdh2004@physics.odu.edu> or visit: <www.physics.odu.edu/GDH2004>.

Researcher Now Available In PDF

The Researcher News is now available in portable document format (pdf) format on the Researcher News web site: <http://researchernews.larc.nasa.gov>. The pdf file, like the hard copy, is tabloid-size (11 inches wide by 17 inches tall) but can be scaled to fit on a standard printer. Adobe Reader is required to view the file. It can be downloaded for free at: <http://www.adobe.com/ products/acrobat/ readstep2.html>.


National Aeronautics and Space Administration
Langley Research Center
News Researcher
The Right Tool For The Job
Langley's GIS Web Site Offers A Wealth Of Information
By JIM ROBERTS

J-Lab Hosting Summer Physics Fests

Jefferson Lab will host "Summer Physics Fests" from 10 a.m. to noon **June 9, June 30, July 28, Aug. 11** and **Aug. 25** in the CEBAF Center auditorium in Newport News.

The "Physics Fests," designed for families and student groups, include an interactive summary of the research conducted at the Jefferson Lab followed by the popular "Deep Freeze" and "Hot Stuff" presentations.

The presentations are free and open to the public, but reservations are required. For reservations or more information, contact Stacy Ring at 269-7560 or <ring@jlab.org>.

Blood Drive On July 14

The American Red Cross will host a blood drive on **July 14** in Langley Research Center's H.J.E. Reid Conference Center. Langley employees, contractors and retirees are invited to participate. Civil servants may charge their time to FCS 23-090-20-BE.

Future blood drives are scheduled on **Sept. 15** and **Nov. 24.**

For more information, contact Connie Small at 864-2564 or <Connie.J.Small@nasa.gov>.

'Aero' Art Show Moves To D.C.

The "Aerospace Design" art show that was featured last year at the Art Institute of Chicago has moved to the Octagon Museum in Washington, D.C., and will remain on display through **Dec. 5**.

The exhibit, subtitled "The Art of Engineering from NASA's Aeronautical Research," explores the power and beauty of aerospace design, from early wind tunnel models to modern aeronautical engineering. It features 65 NASA artifacts, including many from Langley Research Center.

The Octagon Museum is open from 10 a.m. to 4 p.m. Tuesday through Sunday. For more information, visit: <http://www.archfoundation.org/ octagon/>.

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Photo by Jeff Caplan

Center Snapshot

Lonnie Combs works as an engineer technician machinist in Langley Research Center's Research Hardware Development Section. He grew up and still lives in York County — in fact, he is the fourth generation to live in the same house — and he learned his trade from his father and uncle. He attended Thomas Nelson Community College for two years and and then went to NASA's Apprentice School. He has been at Langley ever since, nearly 28 years. What does he like about working at Langley? "The versatility of the job," he says. "I get to work on many different projects."