National Aeronautics and Space Administration

The Dryden X-PRESS

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Asteroid mission targeted

By Jay Levine
X-Press editor

Bruce Willis and the simultaneous launch of two space shuttles are some of the first thoughts conjured by a mission to an asteroid. That was Hollywood's take on what such a mission would entail in the 1998 film "Armageddon."

In a departure from the science fiction film's crusade to save Earth from a wayward asteroid, NASA's ambitious plan is to develop the first-ever mission to identify, capture and relocate a 500-ton asteroid by 2025. The asteroid mission was a key highlight of President Barack Obama's proposed fiscal year 2014 $17.7 billion NASA budget, which NASA Administrator Charlie Bolden presented April 10.

To meet Obama's challenge, NASA will integrate its science, technology and human exploration capabilities to use what its missions have learned about living and working in space, Bolden said. The asteroid mission is intended to be a precursor of a manned Mars mission Obama called for by 2030, he added.

ED13-0097-13 **NASA/Tom Tschida**

President Obama's proposed 2014 budget includes $105 million to begin plans for an asteroid mission by 2025. Following NASA Administrator Charlie Bolden's presentation of the president's budget, Dryden Director David McBride, above, went through the main elements of the center's proposed funding.

The proposed budget includes $105 million for NASA to capitalize on existing efforts across the agency and begin planning the mission. For example, identification and characterization work is underway to determine candidate asteroids, according to NASA Associate Administrator Robert Lightfoot's presentation at the NASA budget briefing.

NASA's solar electric propulsion could be the method of moving a small asteroid into a stable orbit in the Earth-moon system where

Budget, page 6

Budget shows confidence in NASA, Dryden

Center Director's Column

by David McBride

President Barack Obama's proposed 2014 budget, released April 10, shows confidence in NASA and Dryden's ability to deliver.

Although we will be getting more details in the coming weeks, the initial information shows a net gain in Dryden's budget for the upcoming fiscal year.

An example of NASA's support was showcased in the video played prior to the NASA budget briefing, which is available at http://www.nasa.gov/news/budget/index.html with all of the budget documents and presentations. I was watching the video for the first time with all of you and it reflected favorably on the work we do. While Dryden accounts for just 1.5 percent of the NASA budget, it was encouraging to see Dryden activities so prominent. This really shows recognition for the work we do here and the people that make it happen.

We should also look for ways to lend our expertise to help NASA achieve its goals concerning the asteroid mission slated for 2025. There are many unknowns that will require answers and that could provide opportunities for us. Dryden is the home of a number of innovations and the center could make valuable contributions to that mission.

The president's proposed $262 million budget includes more funding for Exploration as Dryden assists with the Orion Multi-Purpose Crew Vehicle development.

Director, page 8

Swallowed whole

NASA Super Guppy takes T-38s to El Paso

By Jay Levine
X-Press editor

The NASA Super Guppy Transport "swallowed" two Dryden T-38s whole March 18, right out on Dryden's back ramp.

The Super Guppy, which is the last of its kind flying, is based at Ellington Airport in Houston, near Johnson Space Center. The aircraft was at Dryden to transport two T-38s that haven't flown in several years and are no longer airworthy. El Paso, Texas, was the destination for the aircraft that will be used for parts for other Johnson-operated T-38s.

Aside from the Super Guppy's tremendous size – it measures more than 48 feet to the top of its tail and has a wingspan of more than 156 feet – the aircraft features a hinged nose that opens 110 degrees. Once open, an aircraft cargo loader was used to load the two trainer aircraft. Its 25-foot diameter cargo bay permitted the two T-38 aircraft to be moved with only the wingtips needing to be removed, said Johnson flight engineer David Elliott, the Guppy's project manager.

The nose section of the Guppy was opened first. The T-38 aircraft had previously been hoisted onto a specially designed pallet atop a mobile transporter. The pallet containing the T-38s was loaded into the Guppy and then the nose was closed. The process took about 2.5 hours and then the Guppy departed for El Paso.

Dryden has seen the Super Guppy Transport before during the delivery of X-38 Vehicle 131R on July 11, 2000. The X-38 was a prototype of a crew return vehicle that had successfully been air launched from the NB-52B that flew at Dryden in the late 1990s and early 2000. The

Super Guppy, page 7

ED13-0074-83 **NASA/Jim Ross**

Two retired NASA T-38 trainers mounted on a transport pallet atop a mobile transporter are positioned for loading aboard NASA's Super Guppy.

ED13-0011-74-41 **NASA/Jim Ross**

***Above**, the second retired T-38 joins its companion on the special transport pallet before the aircraft are loaded on to the NASA Super Guppy. **At right**, the T-38s are positioned inside the Super Guppy and secured for the flight to El Paso.*

ED13-0074-105 **NASA/Jim Ross**

Emery selected for top 25

By Jay Levine
X-Press Editor


Katrina Y. Emery

Dryden's Katrina Y. Emery is a "Woman You Should Know."

That's what Diverse: Issues in Higher Education magazine identified in selecting 25 leading women in U.S. higher education. The magazine's second annual selection of women in higher education is included in its March 14 Women's History Month edition and includes Emery, who is director of Dryden's Education Office.

"We here at Diverse are thrilled to once again highlight the exceptional work of outstanding women in leadership. Their example is an inspiration to many," said David Pluviose, Diverse executive editor.

Diverse is the second largest higher education trade publication in the country. Current selectees include university presidents, athletic directors and non-profit directors who "stand out for their ability to forge solutions to the unprecedented challenges facing the nation's high education community," according to the magazine. Emery was the sole federal government employee featured.

"Once the shock subsided, I felt honored and extremely humbled," she said. "I realized my peers are honoring me for a role that I've been pleased to fulfill, but I did not expect any national recognition for doing what I love to do. I also am humbled to be included in a listing that contains so many other dynamic and exceptional women. I have deep respect for their work and leadership."

One of her accomplishments was broadening the scope of activities at higher education institutions across the country, especially at minority serving institutions. She has focused on providing Science, Technology, Engineering and Mathematics, or STEM, education and career opportunities to underserved and underrepresented groups, including women and minorities.

She also said she has been a catalyst by bringing people together and providing a strategic vision for minority institutions to focus on partnerships and obtaining contracts. As a result, the Minority Serving Institutions Research Partnerships Consortium was organized. That organization has hosted five conferences and regional activities throughout the country and included partners from a number of federal agencies.

Emery also is credited with revitalizing the NASA University Research Centers project in her previous position as its project manager. The URCs are multi-million-dollar multidisciplinary research units designed to achieve broad-based and competitive aerospace research capability among the nation's minority education institutions.

As Dryden Education Office director, Emery is responsible for the development and implementation of the center's education programs

Award, page 8

Two complete L.A. Marathon

By Beth Hagenauer
Dryden Public Affairs


Claudia Herrera


Bob Curry

All those hours spent logging mile after mile in training paid off for Dryden employees Bob Curry and Claudia Herrera, who both finished the 28th Los Angeles Marathon March 17 in just over four hours and 30 minutes.

Claudia, 30, a mechanical engineer at Dryden, finished the 26.2-mile "Stadium to the Sea" course in 4:31.47, placing 6,076th overall and 314th in her 30-34 female age group.

Curry, 56, Dryden's chief scientist, crossed the finish line along Ocean Avenue in Santa Monica in 4:43.25, which placed him 7,431st overall and 198th among his 55-59 male peers.

Their overall places in respect to the 19,521 finishers listed on the marathon's website placed Herrera at the 31st percentile, while Curry placed at the 38th percentile. More than 23,000 persons had registered for the marathon, 50 percent of whom were attempting a marathon for the first time.

That wasn't the case, however, for either Herrera or Curry. Herrera ran her first marathon last year at Los Angeles, finishing in 5:20, so her 50-minute improvement this year "was an improvement I was very excited to see," she said. Curry, a veteran of five marathons, said his finish time was "as good as I could have hoped for," noting that the weather in Los Angeles on race morning was perfect for running a marathon.

The point-to-point "Stadium to the Sea" course began at Dodger Stadium and worked its way through many of Los Angeles' iconic neighborhoods and suburbs before finishing near the Santa Monica Pier.

News at NASA

Asteroid tracker passes

An infrared sensor that could improve NASA's future detecting and tracking of asteroids and comets has passed a critical design test.

The test assessed performance of the Near Earth Object Camera (NEOCam) in an environment that mimicked the temperatures and pressures of deep space. NEOCam is the cornerstone instrument for a proposed new space-based asteroid-hunting telescope. Details of the sensor's design and capabilities are published in an upcoming edition of the Journal of Optical Engineering.

The sensor could be a vital component to inform plans for the agency's recently announced initiative to develop the first-ever mission to identify, capture and relocate an asteroid closer to Earth for future exploration by astronauts.

"This sensor represents one of many investments made by NASA's Discovery Program and its Astrophysics Research and Analysis Program in innovative technologies to significantly improve future missions designed to protect Earth from potentially hazardous asteroids," said Lindley Johnson, program executive for NASA's Near-Earth Object Program Office in Washington.

Near-Earth objects are asteroids and comets with orbits that come within 28 million miles of Earth's path around the sun.

X-Press April 2013

Believe it – bad things can happen to you

By Jay Levine
X-Press editor

Regardless of why an accident happens, one thing is unmistakable – the affects can have catastrophic consequences not only for the person going through it, but also for that person's friends, family and co-workers.

That's one of the messages from the Dryden Safety Day March 13 where four personal accounts of three accidents brought home the event's theme of "I never thought it would happen to me." The personal loss and sacrifice of the speakers and their families, friends and co-workers hit home for many Dryden employees.

Texting while driving is a distraction that has caused numerous accidents, but guest speakers Angela Hefter and Stephanie Gutierrez of the Jacob Hefter Foundation put a face on a Metrolink tragedy that happened on Sept. 15, 2008.

A Metrolink engineer failed to respond to numerous attempts to contact him to avoid a collision with an oncoming freight train. The engineer's attention was on texting rather than his duties, which ultimately resulted in Jacob Hefter's death and that of 24 other people and injuries to an additional 135 people.

Jacob Hefter was Angela Hefter's son and Stephanie Gutierrez' boyfriend. Jacob Hefter was on his way to see Gutierrez aboard the Metrolink when the accident happened. The women recounted a harrowing 24 hours before they learned that Jacob Hefter was seated near the front of the train and had perished in the accident.

Gutierrez explained that texting is the number one way that many 18-to-24-year-old people communicate. In fact, an average of 109 texts are sent and received in a day and that adds up to about 3,270 texts a month. That was true of the engineer of the Metrolink train who was texting continuously during his shift and prior to the accident.

The distraction ultimately resulted in a collision where the freight train plowed 50 feet into the Metrolink's first passenger car – where Jacob was seated so he could be one of the first off of the train to see his girlfriend.

ED13-0070-19 NASA/Tom Tschida

Angela Hefter and Stephanie Gutierrez spoke to Dryden employees about texting and driving. Jacob Hefter was Angela Hefter's son and Gutierrez' boyfriend. He died when the engineer of a Metrolink train was texting and failed to take steps to avoid a head-on collision in 2008.

"Ambulances were lined up as far as I could see. It was the longest, worst day of my life. It dramatically changed and shattered my life," Gutierrez said. "I am beginning to come to terms with it. I was forced to grow up. Jacob was a rock and soft spoken. He was a true leader, kind and he loved life."

Angela Hefter said there have been rippling effects from Jacob's loss that led to health and economic challenges for the family. However, Jacob's memory lives on, as the family started the Jacob Hefter Foundation to honor him and remind people that the text can wait until people are safely at their destination.

"We all have a choice and a power to make the right choice," Hefter said.

For more information on the foundation: http://www.jacobhefterfoundation.org/

People don't always make the best choices and Dryden Human Resource specialist Aaron Rumsey explained how one split second decision as a teenager nearly cost him the ability to walk.

Rumsey was getting ready for school and planning to take tests just three days before his 19th birthday. A friend who had just purchased a new motorcycle stopped by and asked him to go for a quick ride around the block. Rumsey accepted.

His friend reached speeds of up to 160 mph, then slowed to about 70 mph when his friend failed to negotiate a turn and the back end of the motorcycle slid and crashed. Rumsey didn't have shoes or a shirt on and he suffered three crushed vertebrae in the accident. He was told he would never walk again.

ED13-0070-48 NASA/Tom Tschida

"It changed my life. In a split second a bad decision can change the rest of your life," he said.

He progressed from a wheelchair to crutches to canes. He now walks, but he lives with pain every day from his decision.

The final and most intense presentation of the morning session began when featured guest speaker Gary Norland stepped up to the podium.

Norland was a maintenance electrician about 20 years ago when he was investigating a power line that was shorting out. It was the end of the day and the man known for his attention to safety made some decisions he would not usually tolerate about his equipment and procedures. The result was an accident so serious that his family and friends cried during recent interviews recalling Norland's accident. That short film was shown before Norland began his talk.

ED13-0070-30 NASA/Tom Tschida

At left, keynote speaker Gary Norland explained the impacts of poor safety decisions for himself, his family and his company. Above, Aaron Rumsey describes a decision he made as a teenager that resulted in an accident that continues to cause him pain decades later.

As he progressed with a test on a power line, he leaned over the bucket rail of the lift truck to stretch his back. He felt a sharp pain and he heard a buzzing sound in his right ear. He had touched what should have been a de-energized power line with his right earlobe. Every muscle and organ in his body convulsed and contracted and his heart stopped. He collapsed, fell back into the power line and hit it a second time with the back of his head. Fire and electricity shot through him and exited from 15 places resulting in electrical burns to more than 37 percent of his body.

The fact Norland survived to tell his tale is a miracle and to this day, he said he has not come across another person who has lived through the type of accident he had.

Norland suffered permanent brain and spinal cord damage from the high voltage electrical trauma and was told he would never walk again. He has had more than 50 surgeries following the accident and has regained 40 percent use of his legs. His harrowing injuries had a ripple effect not only on him, but his family, coworkers and the community.

"It touches everybody around you for the rest of his or her lives," he said.

Norland said it is up to every employee to be safe and to watch out for each other, as about 96 percent of accidents are the result of human error.

There is one fact that is undisputable about accidents – "someone is going to suffer if you get injured," he said.

As a man who had coached his kids' sports teams and been a part of their lives, Norland was unable to do much with them for many years. "They were out of college before I could do things again," he added.

Recalling the accident he said, "My life changed forever in less than a second. The consensus was I was not going to live."

He believes there were many factors that led to his accident.

"I lost my focus. I was focused on the weekend and not on the job," he said.

Impatience was another contributing factor, which led him to using a truck with a bucket that wasn't insulated, shortcuts that had him working without protective gloves and a failure to double-check that the line wasn't live, he added.

When people take shortcuts, they are training the next generation to do the same and do not show a good attitude about the importance of safety everyday.

It all adds up in another way as well – the injury to Norland has cost his company more than $2.5 million altogether.

Norland concluded, "Safety is a decision you have to make all day long."

Speakers offered good advice, wisdom

Dryden's Safety Day March 13 focused on accidents where safety precautions could have limited or averted the danger. However, there were a number of presentations or moments that represented important messages.

- Center Director David McBride said, "Safety is everybody's job. Let today be a reminder to each of us that safety requires vigilance and action."
- Alan Lederman, an Edwards Air Force Base safety specialist, covered the rules of the road for motorcycle riders at Edwards including clothing and requirements of motorcycle riders on base.
- John Zellmer, Dryden chief of the Office of Protective Services, explained what the first 72 hours after a major emergency such as an earthquake are like. He stressed that employees need to prepare an emergency plan at home including at least a gallon of water a day per person, a basic first aid kit, fire extinguishers and canned food for three days.
- Senior Airman Cole Cargill spoke about maintaining well being and responding to challenges. His presentation covered signs and symptoms of depression and ways to defuse some of those feelings. He advised seeking professional help for persistent challenges.
- Dryden historian Peter Merlin talked about three aircraft accidents in which organizational factors played a significant role. "Safe flight operations require the coordinated efforts of many people; a weak link in the chain can lead to disaster," Merlin said. Some of the contributory factors he discussed involved deficiencies in communications, configuration control/awareness and crew resource management.
- The ISF hosted a number of booths with a safety theme including the NASA Safety Reporting System, the Employee Assistance Program, heat illness and prevention, ergonomics, hearing conservation, fatigue risk management, ground safety, Community Emergency Response Team, motorcycle safety, the dangers of texting while driving and emergency preparedness.
- Classes and training included the G650 Crash Investigation at the base auditorium, lockout/tagout training in the small mezzanine and a fire extinguisher demonstration outside hangar 4802.

Xombie reaches new heights

By Leslie A. Williams
Dryden Public Affairs

A rocket-powered, vertical-landing space-access technology demonstrator reached its highest altitude and furthest distance to date March 25 at the Mojave Air and Space Port in Mojave, Calif., using a developmental navigation system designed to land a space vehicle on other celestial bodies.

Masten Space Systems' XA-0.1B "Xombie" suborbital rocket lifted off the launch pad for an 80-second flight while being controlled by Charles Stark Draper Laboratory's Guidance Embedded Navigator Integration Environment, or GENIE, system developed under NASA's Flight Opportunities Program. Dryden manages the Flight Opportunities Program for NASA.

This combined capability of a rocket-powered demonstrator and a closed-loop planetary guidance, navigation and control system allows NASA to begin testing prototype landing instruments for future missions to the Moon or Mars under realistic conditions without leaving Earth.

ED13-0078-91 NASA/Tom Tschida

Xombie makes a successful flight test.

"Two hundred meters above the Martian or lunar surface is not the place you want to be using an innovative new sensor or landing algorithm for the first time," explained Christopher Baker of the Flight Opportunities Program. "We are working to create an environment that provides opportunities to test these systems a little closer to home."

Xombie rose 1,626 feet, or nearly 500 meters – higher than New York's Empire State Building – moving in a trajectory that replicated the speed and angle of a planetary approach. It landed 984 feet, nearly 300 meters, away from the take off site. The flight established a test-bed capability that will allow for landing demonstrations that start at much higher altitudes – several miles above the ground.

"While computer simulations provide some value as systems are developed, testing that system in a relevant flight environment is invaluable," said Colin Ake, Masten's director of business development. "We want our vehicles to facilitate innovation and lower the current barriers to space access. We hope this is just the beginning of many more landing tests for NASA and Draper."

With a growing interest in using commercial suborbital launch vehicles to demonstrate planetary landing technology applications for future space missions, the Flight Opportunities Program funded the development of precision landing technology demonstrations.

Draper, based in Cambridge, Mass., was selected to lead this engineering and integration demonstration effort. Draper subsequently teamed with Masten, based in Mojave, to provide the

Xombie, page 8

Budget... from page 1

astronauts could more safely land on the asteroid, Lightfoot said. Robotic servicing techniques developed for space shuttle and International Space Station operations could be used for capturing an asteroid and the NASA Space Launch System and the Orion Multi-Purpose Crew Vehicle in development could be used for astronauts to rendezvous with an asteroid, he added.

Full details of the president's proposed 2014 budget for NASA and the asteroid initiative are available at www.nasa.gov/news/budget

Closer to home, Center Director David McBride detailed elements of the proposed $262 million Dryden budget following the presentation from NASA Headquarters officials. Fiscal year 2013 numbers are not yet available for comparison, so fiscal year 2012 figures were used to give perspective to the proposed budget. Dryden's budget in 2012 was $253 million.

The president's proposed budget, which would have to be approved by Congress to become law, relies on decreases in other areas of the federal budget and new revenue to accomodate the intent of sequestration budget cuts, NASA officials explained.

Dryden's proposed science budget totals $72 million for support of Earth science observations from aircraft, with an emphasis on climate change. Funding also includes the Stratospheric Observatory for Infrared Astronomy aircraft and resources to accelerate Earth Science Venture Class missions. The difference from the $70.7 million allocated for science in 2012 is the SOFIA's move to operational status.

Aeronautics research is proposed to receive $61 million for 2014 and that includes contributions to aviation safety, fundamental aeronautics research and aeronautics test capabilities related to flight operations and test infrastructure. Dryden's Aeronautics budget was $66.6 million in 2012. The difference is the result of completion of X-48C flights in 2013 and decreased funding for the Unmanned Aircraft Systems Integration in the National Airspace System, McBride said.

Dryden is proposed to have $25 million for Space Technology. The main elements of that funding include the center's management of the Flight Opportunities Program for the agency, the Dryden Innovation Fund, and the disbursement of select Small Business Innovative Research and Small Business Technology Transfer awards. The increase from the 2012 allocation of $18.5 million is a result of additional Flight Opportunities work.

Dryden's Exploration proposed budget of $6 million is up from the 2012 budget amount of $3.8 million. The increase reflects Dryden work on the Orion Multi-Purpose Crew Vehicle. The completion of the Space Shuttle Program in 2013 is why there are no funds for Spaceflight Operations in the proposed 2014 budget.

Proposed funding for Education is set at $800,000, down from $3.9 million in 2012. A restructuring of science, technology, engineering and mathematics education in NASA supports the president's STEM consolidation initiative throughout the federal government.

Dryden's cross agency support accounts for $65 million in the proposed budget, compared to a budget of $67 million in 2012. Continued innovative and administrative savings and efficiency initiatives will meet the challenges of reductions in center management and operations funding, McBride said.

Dryden's construction and environmental compliance and restoration accounts for $32 million in the proposed budget, compared to $22.2 million in 2012. Minor center revitalization, facility planning and design and environmental restoration projects are included.

Super Guppy... from page 2

Guppy also visited Dryden for a landing gear change in 2005.

The Super Guppy is the latest iteration of its kind – the last of three aircraft to have transported a number of NASA's hefty payloads ranging from Saturn rockets to International Space Station modules.

The Space Race had a number of complicated problems to solve, Elliott said. In 1962, California-based Aero Spaceline Industries solved the problem of transporting large components when it introduced the first Guppy aircraft. The first version of the Guppy was evaluated during flight tests flown at NASA's Flight Research Center, which is now known as Dryden, that fall.

Built from a heavily modified KC-97 Stratotanker, the B-377PG Pregnant Guppy featured the largest cargo compartment of any aircraft ever built at that time. At just over 19 feet in diameter, this massive cavity was specifically designed to carry the second stage of a Saturn rocket for the Apollo program, Elliott said. The Pregnant Guppy allowed NASA to deliver crucial oversized cargo to the Cape in eighteen hours as opposed to 18 to 25 days aboard a barge, he added.

The program was so successful that it was followed by an even larger version of the aircraft in 1965. Dubbed the B377SG Super Guppy, it was equipped with a 25-foot diameter cargo bay, more powerful turboprop engines, a pressurized cockpit, and a hinged nose for easier loading of cargo. Aero Spacelines converted and continued to own and operate the aircraft until 1981, when NASA purchased the aircraft.

During its 32 years of service, the original Super Guppy flew over 3 million miles in support of NASA's Apollo, Gemini, Skylab, and the International Space Station programs. It also transported the X-24B and HL-10 lifting bodies from Dryden to the U.S. Air Force Museum adjacent to Wright-Patterson Air Force Base in Ohio in 1976. The HL-10 was later returned to Dryden and remains on display at the entrance to the center.

ED13-0074-99 **NASA/Jim Ross**

***Above**, the NASA Super Guppy begins to close its nose with the two T-38s secured on the special transport pallet inside the aircraft.*
***At left**, with the Super Guppy's cargo safely prepared for the flight to El Paso, the aircraft is readied for departure.*

ED13-0074-113
NASA/Jim Ross

The Super Guppy Transport currently operated by NASA is the last generation of Guppys that Aero Spacelines built. The most important difference between it and its predecessor was the upgrade to more reliable and readily available Allison T-56 turboprops. Airbus Industries commissioned and operated four Super Guppy Transports and used them to ferry large A300 fuselage sections throughout Europe during the last three decades of the 20th century.

When Airbus retired its fleet to museums in 1997, NASA was able to acquire the number four aircraft to replace the aging B377SG Super Guppy under an International Space Station barter agreement with the European Space Agency.

NASA's Super Guppy Transport continues to support America's space program and is scheduled to move the Orion Heat Shield from Textron Defense Systems near Boston to NASA's Kennedy Space Center. The U.S. Department of Defense and government contractors also have tapped the Super Guppy's capabilities to move aircraft and large components around the continent, including T-38s for the Air Force and V-22s for the Navy.

Director... from page 1

Space Technology also is boosted to support the Flight Opportunities Program managed by Dryden for the agency. Science funding is up as the Stratospheric Observatory for Infrared Astronomy continues to move toward operational status.

The proposed budget's decrease in Dryden's aeronautics funding is the result of the X-48 program wrapping up and reduced funding for the Unmanned Aircraft System Integration into the National Airspace System. The conclusion of the Space Shuttle Program also zeros out Dryden's space operations as planned.

A meeting of NASA Education Offices is set to determine the direction of that program as a response to the president's proposed budget. The president wants to consolidate some of the federal government's education efforts and reductions in NASA center education budgets are proposed as part of that restructuring.

We do have challenges ahead with our center management and operations (CM&O) budget in maintaining a healthy infrastructure to support our mission.

It's a fact we live in dynamic times as Congress and the president work on the federal budget and the sequestration process this year. The proposed budget is the first piece in a puzzle to determine what funds will be allocated to NASA and Dryden in fiscal year 2014.

Dryden will continue to focus on areas where we excel as we refine and improve how we do our work. The efficient way we are doing projects puts the center in a strong position for future work. We have established the ability to deliver on our commitments.

Regardless of how the final budget looks, I thank Dryden employees for their contributions. What we do here benefits NASA and the nation and makes it possible to fly what others only imagine.

Award... from page 3

designed to inspire and strengthen student interest in STEM through NASA's unique missions, workforce, facilities, research and innovations.

"My success truly is a team success! It's a success of my many mentors, my parents and teachers from childhood to Southern University and throughout NASA. I know that if a difference is to be made in preparing and attracting more students to science and engineering, we must provide exposure, opportunity and access to it. Fortunately, I work for an agency and with a group of people who are just as passionate and dedicated as I am in providing unique NASA experiences in STEM to students and educators," Emery said.

Emery began her Dryden employment in 2001 as a NASA Louis Stokes Professional Leadership fellow. She provided technical assistance to minority-serving institutions to align cutting-edge research and development activities with NASA.

From 2003 through 2005, Emery served as an academic program manager under an Intergovernmental Personnel Act Agreement. She managed NASA grants to historically Black colleges and universities, Hispanic-serving institutions and tribal colleges and universities.

As operations director of the Aerospace, Education, Research and Operations Institute in Palmdale from 2005 through 2007, Emery provided strategic vision, tactical execution and leadership. The AERO Institute is a strategic partnership of federal, state and regional governments, commercial companies, academic institutions, and non-profit organizations that have joined together to address the need for a technically skilled workforce and STEM education.

Emery earned a bachelor's degree in business and a master's degree in public administration from Southern University and A&M College in Baton Rouge, La.

Xombie... from page 6

vertical takeoff and landing flight vehicle to demonstrate this new landing technology. Flight safety and assurance monitoring was performed by Masten's Sensei™ software during the flight.

"Draper is excited to be a part of a team that demonstrated such a unique capability, combining our guidance, navigation and control technology with a proven test flight platform like Xombie," said Doug Zimpfer, Draper's associate director for human space exploration. "We believe the GENIE and Xombie system provide NASA with the platform necessary to demonstrate a wide range of exciting planetary landing technologies including advanced guidance technology."

Flight Opportunities initiated the test efforts in December 2011. The flights built incrementally on ground simulations, tethered flights and closed-loop flight demonstrations. The most recent flight demonstrated an expanded Xombie and GENIE envelope for precision planetary landing that includes enough margin to integrate additional landing sensor technologies in the future.

The X-Press is published each month for civil servants, contractors and retirees of the Dryden Flight Research Center.

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