

April 2016 - A Quarterly Publication

Ames hosts public viewing of successful CRS-8 launch

The eighth contracted mission with SpaceX under NASA's Commercial Resupply Services (CRS) contract launched April 8, 2016, on a Falcon

9 rocket from Space Launch Complex 40 at Cape Canaveral Air Force Station (CCAFS) in Florida. The flight carried five Ames science payloads as well as other science research, crew supplies and hardware to the International Space Station (ISS) in support of the Expedition 47 and 48 crews. The event featured a live NASA TV broadcast of the launch on a widescreen, an overview of the Center's research on the ISS, presentations from Ames payload

specialists and information booths on Ames bioscience research.

Ames life science experiments on CRS-8 included: Micro-9 a study of specific mechanisms of yeast cell signaling and response to micro-gravity; Micro-10, a study of the effects of spaceflight on the growth, gene expression and physiological responses of fungal cells; Microbial Tracking-1C, the third in a series of three studies that investigates the airborne and surface bound populations of microorganisms aboard

the space station; Rodent Research-3, a commercial investigation that evaluates during spaceflight a countermeasure against muscle weakening; and the validation flight of Wetlab-2, a new system for conducting quantitative, real-time gene expression analysis aboard the ISS.

Data from some of the life science investigations will be shared with the scientific community via NASA's open-access GeneLab data system.

NASA photos by Dominic Hart



9 rocket from Space Launch Complex 40 at Cape Canaveral Air Force Station (CCAFS) in Florida. The flight carried five Ames science payloads as well as other science research, crew supplies and hardware to the International Space Station (ISS) in support of the Expedition 47 and 48 crews.

The Ames Office of Education and Public Outreach



Visitors speak with Ames scientists about the science payloads that were launched on SpaceX, April 8, 2016 (photo left) and eagerly watched the launch live on a big screen (right photo) in the Ames Visitor Center.

Did the "man in the moon" look different from ancient Earth?

BY KIMBERLY WILLIAMS

New NASA-funded research provides evidence that the spin axis of Earth's moon shifted by about five degrees roughly three billion years ago. The evidence of this motion is recorded in the distribution of ancient lunar ice, evidence of delivery of water to the early solar system.

"The same face of the moon has not always pointed towards Earth," said Matthew Siegler of the Planetary Science Institute in Tucson, Arizona, lead author of a paper in today's journal Nature. "As the axis moved, so did the face of the 'man in the moon.' He sort of turned his nose up at the Earth."

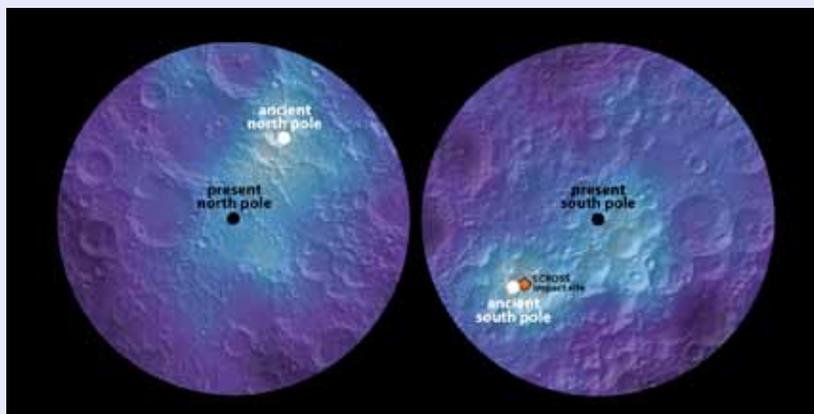


photo credit: James Keane, University of Arizona; Richard Miller, University of Alabama at Huntsville

This polar hydrogen map of the moon's northern and southern hemispheres identifies the location of the moon's ancient and present day poles. In this image, the lighter areas show higher concentrations of hydrogen and the darker areas show lower concentrations.

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NASA marks successful drone traffic management test

BY SHARON LOZANO

In the first and largest demonstration of its kind, NASA and operators from the Federal Aviation Administration's (FAA) unmanned aircraft systems (UAS) test sites across the country flew 22 drones simultaneously to assess rural operations of

closely with the FAA test sites, and the UTM research platform performed well. This test would not have been possible without the six FAA test sites – it was a collaborative effort to ensure a successful test.”

A total of 24 drones flew multiple times throughout the three-hour test,

day predicted a 40 percent chance of rain for two locations, but the weather cooperated, and all sites – Fairbanks, Alaska; Grand Forks, North Dakota; Reno, Nevada; Rome, New York; Virginia Tech's locations in Blacksburg, Virginia, and Bushwood, Maryland; and Corpus Christi, Texas – flew during the test.

“After so much preparation and practice, it was very rewarding to see all test sites have success with weather, platforms and connectivity,” said Tony Basile, director of operations at NUAIR and New York test site manager. “It was additionally rewarding to hear from NASA that today's efforts were successful on their end as well.”

Joseph Rios, flight test director and UTM technical lead explained, “NASA built the research platform and tested it on a local scale, but we needed the experience and expertise at each of the FAA test sites to exercise the platform in this geographically diverse way. Their efforts and skills in managing field deployments were pivotal to the success of this activity.”

Echoing that sentiment, Cathy Cahill, the director of the Alaska Center for Unmanned Aircraft Systems Integration in Fairbanks, said, “This mission demonstrated the technological advances that can be made when the expertise of NASA is combined with the capabilities of our nation's UAS test sites.”

“We enjoyed working with the NASA UTM team to explore UAS air traffic management concepts through the UTM research platform,” said Richard C. Kelley, chief engineer for the Nevada Advanced Autonomous Systems Innovation Center at the University of Nevada, Reno. “The software performed wonderfully, providing much-needed data and pointing toward open questions for the research community to address as we work to safely integrate unmanned aircraft into the National Airspace System.”

Each FAA test site determined how they wanted to interact with NASA's

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NASA photo by Dominic Hart

San Francisco Bay Area reporters interview NASA researchers and observe FAA test sites that flew 24 drones to test the air traffic management platform at NASA Ames on April 19, 2016.

NASA's UAS traffic management (UTM) research platform.

Operators outside NASA interacted with the UTM research platform, entering flight plans and planned operations from several geographically diverse locations, using various aircraft and software. The UTM research platform checked for conflicts, approved or rejected the flight plans and notified users of constraints. Engineers at NASA Ames monitored operations and system load and gathered qualitative feedback to identify capability gaps to further refine the UTM research.

“We didn't have any testing problems today,” said Parimal Kopardekar, manager of NASA's Safe Autonomous Systems Operations project and lead of NASA's UTM efforts. “NASA extensively tested Technical Capability Level one and worked very

with 22 flying simultaneously at one point. The mission was declared successful, given the minimum success criteria of 16 simultaneous operations was achieved. In addition to the live aircraft interacting with UTM, NASA Ames introduced dozens of virtual aircraft into the same airspace to further enhance the test. This mixing of live flights with virtual flights provided additional insight for future tests to refine the UTM concept.

Conducting a successful test required hours of coordination and logistics. Weather conditions at each of the test sites provided an additional challenge as drones cannot fly in rain or high winds, so engineers monitored weather conditions across the country to ensure the drones could fly. Winds are often greater in the afternoon, so the optimum flight window was 7 a.m. – 3 p.m. PDT. The forecast the prior

Pleiades helps explain NASA's IRIS Solar Observatory findings

BY MICHELLE MOYER

Researchers around the world are studying the sun to better understand its formation, evolution and impact on Earth. To help explain longstanding mysteries of the sun's atmosphere, scientists turned to one of the world's fastest supercomputers, Pleiades, located at the NASA Advanced Supercomputing (NAS) facility, at NASA Ames.

The sun's plasma, a superheated mix of charged particles, flows and creates magnetic fields, that move through the surface and extend throughout the solar atmosphere. The synthetic image is derived from numerical simulations that reveal how the sun's magnetic field structures its atmosphere on fine scales.

Using images from IRIS, astrophysicists are producing simulations that may help explain how the outer solar atmosphere is shaped and heated. By combining numerical modeling with direct observation, the researchers are learning how magnetic fields generated in the sun's interior affect its lower atmosphere, or chromosphere, which is the source of the ultraviolet radiation that reaches Earth.



photo credit: Mats Carlsson, University of Oslo

This video snapshot shows a simulated view from NASA's Interface Region Imaging Spectrograph (IRIS) spacecraft flying above the solar surface at a height of more than 6,000 miles, with a filter showing only light emitted by plasma at a temperature of about 35,000 degrees Fahrenheit.

For more information about the modeling and simulation work done on Pleiades and to view the simulation

video, visit: http://www.nas.nasa.gov/publications/articles/feature_IRIS_Carlsson.html

NASA marks successful drone traffic management test

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UTM research platform. For example, the Northern Plains UAS test site from the North Dakota Department of Commerce used fixed wing aircraft from four different manufacturers, two of which built UTM software capabilities into their own ground control stations, while the other two used UTM software in their aircraft.

"We wanted to test UTM concepts across diverse implementation methods, and partnering with a number of local and regional companies was a key factor in our ability to do so, and our success today," said Doug Olsen, principal investigator of the project at the University of North Dakota.

Many of the operators and test site employees remarked on the potential benefits of future systems that may leverage the results of this work.

"Using a traffic management framework to separate the aircraft

and provide position awareness to air traffic control or to a mission commander helps us provide space between manned aircraft and unmanned aircraft, and actually promotes the safety of integrating those two into the airspace," said Mathew Nelson, a UAS pilot at the Texas FAA test site.

"NASA is developing forward-thinking solutions to today's aeronautical challenges with UAS," said Rose Mooney, executive director of the Virginia Tech Mid-Atlantic Aviation Partnership.

UTM is still in the early research stages. This test of UTM Technical Capability Level one addressed rural UAS operations within line-of-site, such as could be potentially used for applications for agriculture, firefighting and power line monitoring. The UTM project has four technical capability levels, each increasing in complex-

ity, culminating with level four – with potential applicability for high-density urban UAS operations. NASA is working closely with the FAA throughout the research process to define deliverables. NASA plans to turn over its UTM research to the FAA in 2019 for further testing.

This activity is sponsored by the Airspace Operations and Safety Program under NASA's Aeronautics Research Mission Directorate. Four of NASA's research centers – Ames, NASA's Armstrong Flight Research Center in Edwards, California; Glenn Research Center in Cleveland; and Langley Research Center in Hampton, Virginia – are actively involved in the agency's UTM initiative.

AAAG hosts skit “Unsung Heroes” honoring Black History Month

BY DENISE SNOW

The Ames African-American Advisory Group (AAAG) performed a skit in honor of Black History Month, entitled “Unsung Heroes.” February 1 marked the beginning of Black History Month and it is not only a time when people of African ancestry come together in memory of their rich past and learn about the many contributions and accomplishments made to our nation’s history, but allows every American the opportunity to celebrate the traditions of African Americans and those aspects of their own culture and positive contributions made to society.

Black History Month originally began as Negro History Week in 1926. It took place during the second week of February because it coincided with the birth dates of Frederick Douglass and Abraham Lincoln. Harvard-trained historian, Carter G. Woodson, is credited with the creation of Negro History Week. In 1976, the bicentennial of the United States, President Gerald R. Ford expanded the week into a full month. He said, “Our country needed to seize the opportunity to honor the too-often neglected accomplishments of black Americans in every area of endeavor throughout our history.”



NASA photo by Don Richey

The Ames African-American Advisory Group, many of the members shown here above on the day of the performance, hosted a skit, “Unsung Heroes,” in honor of Black History month. From left to right: Sheila Thomas, Alexandria Langford, Annette Randall, Beverly Davis, Denise Snow, Lana Jones-Clemon, Michael Dodson, Paula Harris, Mary Ann Patterson, Mary Brown and Joe Shields.

There is no American history without recognizing the contributions made by countless African Americans who carved a thumb print into the history

of this country. We commemorate and celebrate all cultures that have contributed to our nation’s history.

Shin provides ARMD budget

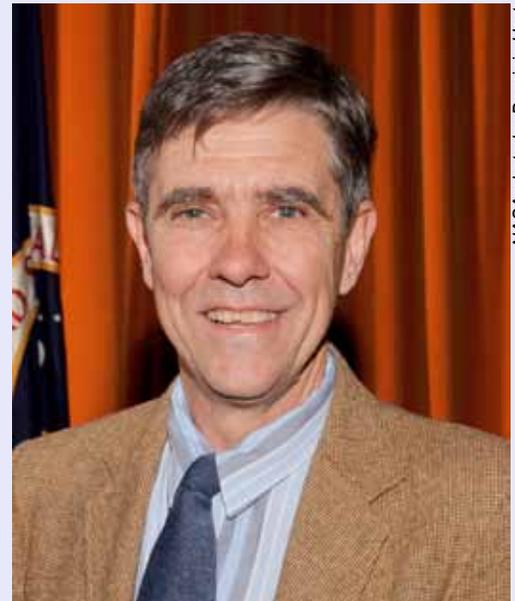
NASA photo by Dominic Hart



Dr. Jaiwon Shin, associate administrator for Aeronautics, gave an all-hands address March 31, 2016 to Ames employees, providing an update on ARMD budget roll out and plans for the coming year. Shin also presented the ARMD Associate Administrator Awards to Ames recipients.

Warmbrodt recognized for advancing vertical flight aeronautics

Bill Warmbrodt recently received the American Helicopter Society (AHS) international Alexander Kelmin award. The award was created in 1951 by industry pioneer Frank Piasecki and is the highest honor the AHS bestows on an individual for notable achievement in advancing the field of vertical flight aeronautics. The award honors the memory of an eminent aeronautical engineer, educator, author and outstanding pioneer in rotary wing aeronautics.



NASA photo by Dominic Hart

Media converse with small satellite experts, tour labs

BY KIMBERLY WILLIAMS

On March 8, 2016, members of the news media came out to Ames Research Center to learn about NASA's small spacecraft technology development and upcoming launches, and to tour assembly and testing facilities.

NASA leadership, scientists and engineers involved in small spacecraft technology explained the growing importance of small spacecraft in space exploration, shared milestone accomplishments and discussed the series of NASA-funded technology demonstration missions set to launch this year.

These cost-effective small spacecraft missions provide opportunities for NASA to perform high-value science using advanced technologies and innovative approaches to spacecraft engineering. Also, they are designed to push the boundaries of space-to-Earth communications for CubeSats, test satellite-to-satellite communications and demonstrate the small spacecraft autonomous movement capabilities.

The panelists included Andrew Petro, program executive, Small Spacecraft Technology Program at NASA Headquarters in Washington, D.C.; Roger Hunter, program manager, Small Spacecraft Technology Program at Ames; Ehson Mosleh, vice president of Systems & Mission Assurance for the CubeSat Proximity Operations Demonstration (CPOD) project at Tyvak Nano-Satellite Systems, Inc. in Irvine, California; Richard Hodges, principal investigator for the Integrated Solar Array and Reflectarray Antenna

(ISARA) at the Jet Propulsion Laboratory in Pasadena, California; and Richard Welle, principal investigator for the Optical Communications and Sensor Demonstration (OCSD) project and director of the Microsatellite Systems department at The Aerospace Corporation, in El Segundo, California.

After the panel briefing, media toured assembly laboratories and test facilities as well as the Multi-Mission Operations Center, where engineers track and facilitate the operation of the spacecraft and payloads. The tour

also included visits to laboratories for the Eu:CROPIS and BioSentinel projects, which both support science missions managed by Ames.

The previously launched Nodes satellites are scheduled to deploy in mid-May 2016 from the International Space Station, to demonstrate swarm communications. In addition to Nodes mission, the ISARA, OCSD and CPOD projects are funded by the Small Spacecraft Technology Program, managed by Ames, within NASA's Space Technology Mission Directorate.

For more information about NASA's Small Spacecraft Technology Program, visit: <http://www.nasa.gov/smallsats>



Left photo: Roger Hunter, program manager for the Small Spacecraft Technology Program at Ames, explains the Nodes satellite mission during the small satellite media event on March 8, 2016, in the small spacecraft assembly laboratory at Ames.



From left to right, the panelists at the small satellite media event March 8, 2016, included Andrew Petro, program executive, Small Spacecraft Technology Program at NASA Headquarters in Washington, D.C.; Roger Hunter, program manager, Small Spacecraft Technology Program at Ames; Ehson Mosleh, vice president of Systems & Mission Assurance for the CPOD mission at Tyvak Nano-Satellite Systems, Inc. in Irvine, California; Richard Hodges, principal investigator for the ISARA mission at the Jet Propulsion Laboratory in Pasadena, California; and Richard Welle, principal investigator for the OCSD mission and director of the Microsatellite Systems department at The Aerospace Corporation, in El Segundo, California.

NASA photos by Dominic Hart

NASA participates in 5th Annual California Aerospace Days

BY SHARON LOZANO

Three NASA Centers participated in the American Institute of Aeronautics and Astronautics (AIAA) 5th Annual California Aerospace Week in Sacramento, California, Feb. 29 - March 1, 2016. The event featured panels, exhibits hearings and discussions highlighting the importance of aerospace.

Dr. Eugene Tu, Ames center director; Lt. Gen. Larry James, deputy director of the Jet Propulsion Laboratory and David McBride, director of NASA's Armstrong Flight Research Center met with Governor Jerry Brown to discuss the Agency and its wide range of aerospace work in California.

Parimal Kopardekar, manager of NASA's Safe Autonomous Systems Operations project and principal investigator of NASA's UTM efforts briefed the legislature about the challenges of integrating Unmanned Aerial Vehicles in the national airspace

NASA representatives from Ames, Armstrong and JPL engaged approximately 1,000 visitors from area schools and the state legislature. The public viewed displays of aeronautics, satellites and solar system exploration on the grounds of the State Capitol.

Ames highlighted next generation air traffic management initiative ATD2 and UTM drone traffic management system, and several small satellites including SPHERES.



NASA photo by Dominic Hart

Displays of aeronautics, satellites and solar system exploration at the recent 5th Annual California Aerospace Days held in Sacramento, California.



Left to right, Armstrong center director David McBride; Governor Jerry Brown; Ames center director Eugene Tu; JPL deputy center director Larry James; and Ames deputy center director Tom Edwards, 5th Annual California Aerospace Week in Sacramento, California, Feb. 29 - March 1, 2016.

photo by Lisa Lockyer

NASA, Made In Space Inc's media day introduces new space technology

BY KIMBERLY WILLIAMS

On Feb. 19, 2016, local reporters attended a media day at Made In Space, Inc. (MIS), on the campus of NASA's Research Park to learn about the startup company's recent proposal award as part of NASA's "Utilizing Public-Private Partnerships to Advance Tipping Point Technologies" solicitation, issued through NASA's Space Technology Mission Directorate (STMD).

Steve Jurczyk, associate administrator for STMD, spoke of the importance of the solicitation and media were given a tour of the MIS facilities. The two-hour event included informal briefings with MIS leadership and a discussion on their winning proposal.

The American-based company was the first to use a 3-D printer on the International Space Station. Its project, "Versatile In-Space Robotic Precision Manufacturing and Assembly System," was one of nine selected by STMD to mature technologies beyond their "tipping point." The goal of their selection is to develop mature technologies and qualify them for market, stimulating the

commercial space industry while delivering technologies and capabilities needed for future NASA missions and commercial applications.

The MIS proposed technology, called Archinaut, enables a wide range of in-space manufacturing and assembly capabilities by combining space-proven robotic manipulation with additive manufacturing technologies demonstrated on ISS.

MIS leveraged NASA's Small Business Innovation Research (SBIR) program, in which they received a Phase I and subsequent Phase II award. Their 3-D printer's success was a result of the SBIR program.

For more information about NASA's STMD, visit: <http://www.nasa.gov/spacetech>



NASA photo by Dominic Hart

Made in Space, Inc's proposed technology, the Archinaut.

Bolden, Honda tour Ames, present Jin-Woo Han with PECASE Award

On Feb. 18, 2016, NASA Administrator Charles Bolden and Representative Mike Honda visited Ames for a tour of the center (photos below) and also to present Jin-Woo Han of Ames with the Presidential Early Career Award for Scientists and Engineers (PECASE) award. The PECASE award represents the highest honor bestowed by the U.S. government on scientists and engineers beginning their independent careers. They recognize recipients' exceptional potential for leadership at the frontiers of scientific knowledge, and their commitment to community service as demonstrated through professional leadership, education or community outreach. Photo right: left to right: Administrator Charles Bolden, Jin-Woo Han, Rep. Mike Honda and Ames Center Director Eugene Tu.



NASA photo by Don Richey



NASA photos by Dominic Hart



Former NASA engineer makes millions with STEMBoard

BY LYNNE D. JOHNSON, EBONY.COM

For Aisha Bowe, CEO and co-founder of STEMBoard and former aerospace engineer at NASA Ames, starting a tech company in Silicon Val-



Aisha Bowe, co-founder of STEMBoard and former NASA Ames aerospace engineer.

ley was a no go. “We went to the Valley to raise money and the reception wasn’t what we had hoped for, so we decided we knew what we wanted to do and that we were going to make it work. So I continued to work at NASA for two years until we got the company off the ground,” says Bowe.

The resilience paid off for the co-founders of the innovative tech company who partner with defense and enterprise clients to create smart systems and software solutions. “I’m so happy that we didn’t raise a single dime. I run a profitable, sustainable company that I own 51% of outright without any significant debt,” says Bowe.

Bowe states she remembered being aware that technology was changing very rapidly, but not necessarily

thinking she wanted to be part of that shift. “When I was in community college, I realized that I had an aptitude for math and I became interested in space and exploration while reading

science fiction and novels about deep space, satellites and spaceships.” Interestingly NASA has a tagline, “We turn science fiction into fact.” “So I was seeing all of this and when the idea presented itself to choose the path of aerospace engineer, I knew it was something that I would always be excited about.

The idea that we’ve perfected cruising at 35,000 plus feet in a pressurized tube boggles my mind. It’s safer than driving. And you now

have WiFi and you have TV, and it’s amazing when you think about what went into creating that.”

Bowe states she was fortunate to be in a program that combined one’s undergraduate and graduate studies. There was a professor, Thomas Zurbuchen, who had an instrument with NASA called Mercury Messenger. The director of Engineering at NASA at the time came to visit her professor and he asked her to take him on a tour of the campus.

“When I met the director, it was one of those moments where you know it is meant to be. He asked me why I didn’t submit my resume, and I realized at that moment that I didn’t think I was good enough. He said “let me be the judge of that” and I submitted my resume. Within two weeks, I

was offered a position in the intern program.”

“At that point, I realized I needed to redefine how I think about myself and what’s possible for me, so I started setting really ambitious goals. I want to be a distinguished employee. I want to do this with public service. I want to do this with technology and outreach. So I published papers. I spoke to school groups. I was a recipient of NASA’s Equal Opportunity and Diversity Medal, which is one of NASA’s highest honors given to individuals within government who are champions of diversity and inclusion programs or display those characteristics within the workplace.

I was part of the African-American advisory group. I created a career shadowing program for students. There are so many talented people out there but they don’t have the access and exposure that they need to succeed, and I want to help with that.”

Bowe worked for NASA for six years as a federal employee and then for two years as a contractor. Her entire career there, she wanted to advocate for the underserved and underrepresented. “Working there as an engineer really changed my life. Besides what it did for her, it even helped her uplift her family and help them do many things.”

When she started the company, she continued to work at NASA and signed a work agreement so there was no conflict of interest. It’s been a year now that she’s been running the company full time and they’ve been a company for three years now.

For the entire interview with Aisha, see: <http://www.egypt.com/life/black-women-technology-nasa?&tc=eml#axzz44VwZVSi9>

Did the “man in the moon” look different from ancient Earth?

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This interdisciplinary research was conducted across multiple institutions as part of NASA’s Solar System Exploration Research Virtual Institute (SSERVI) based at NASA Ames.

Water ice can exist on Earth’s moon in areas of permanent shadow. If ice on the moon is exposed to direct sunlight it evaporates into space. Authors of the *Nature* article show evidence that a shift of the lunar spin axis billions of years ago enabled sunlight to creep into areas that were once shadowed and likely previously contained ice.

The researchers found that the ice that survived this shift effectively “paints” a path along which the axis moved. They matched the path with models predicting where the ice could remain stable and inferred the moon’s axis had moved by approximately five degrees. This is the first physical evidence that the moon underwent such a dramatic change in orientation and implies that much of the polar ice on the moon is billions of years old.

“The new findings are a compelling view of the moon’s dynamic past,” said Dr. Yvonne Pendleton, director of SSERVI, which supports lunar and planetary science research to advance human exploration of the solar system through scientific discovery. “It is wonderful to see the results of several missions pointing to these insights.”

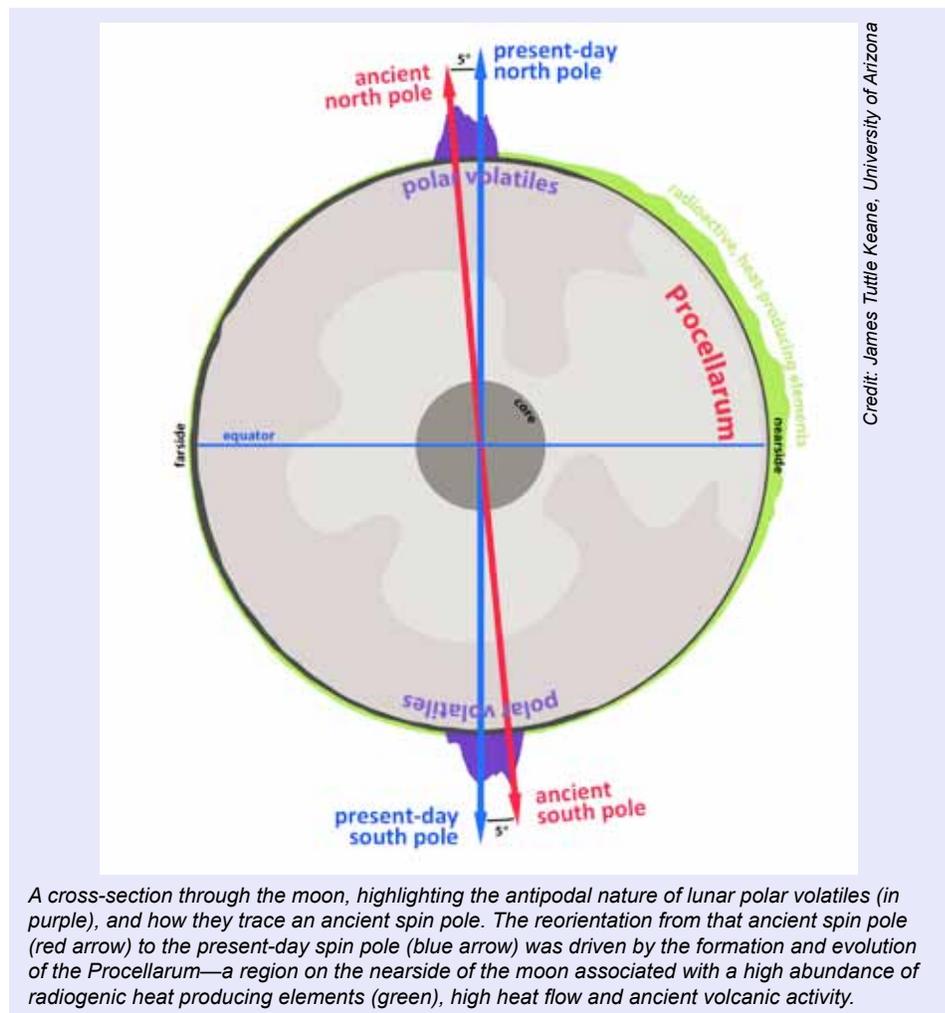
The authors analyzed data from several NASA missions, including Lunar Prospector, Lunar Reconnaissance Orbiter (LRO), Lunar Crater and Observation Sensing Satellite (LCROSS), and the Gravity Recovery and Interior Laboratory (GRAIL), to build the case for a change in the moon’s orientation. Topography from the Lunar Orbiter Laser Altimeter (LOLA) and thermal measurements from the Diviner lunar radiometer – both on LRO – are used to aid the interpretation of Lunar Prospector neutron data that support the polar wander hypothesis.

Siegler noticed that the distribution of ice observed at each of the lunar poles appeared to be more related to each other than previously thought. Upon further investigation, Siegler – and co-author Richard Miller of the University of Alabama at Huntsville – discovered that ice concentrations were displaced from each pole by the same distance, but in exactly opposite

directions, suggesting the spin axis in the past was tilted from what we see today. A change in the tilt means that some of the ice deposited long ago has since evaporated as it was exposed to sunlight, but those areas that

portion of the lunar mantle, causing a density change significant enough to reorient the moon.

Some of this heated mantle material melted and came to the surface to form the visible dark patches that fill



A cross-section through the moon, highlighting the antipodal nature of lunar polar volatiles (in purple), and how they trace an ancient spin pole. The reorientation from that ancient spin pole (red arrow) to the present-day spin pole (blue arrow) was driven by the formation and evolution of the Procellarum—a region on the nearside of the moon associated with a high abundance of radiogenic heat producing elements (green), high heat flow and ancient volcanic activity.

remain in permanent shadow between the old orientation and the new one retain their ice, and thus indicate what happened.

A planetary body can shift on its axis when there is a very large change in mass distribution. Co-author James Keane, of the University of Arizona in Tucson, modeled the way changes in the lunar interior would have affected the moon’s spin and tilt. In doing so, he found the Procellarum region on the lunar near-side was the only feature that could match the direction and amount of change in the axis indicated by the ice distributions near the poles. Furthermore, concentrations of radioactive material in the Procellarum region are sufficient to have heated a

large lunar basins known as mare. It’s these mare patches that give the man in the moon his “face.”

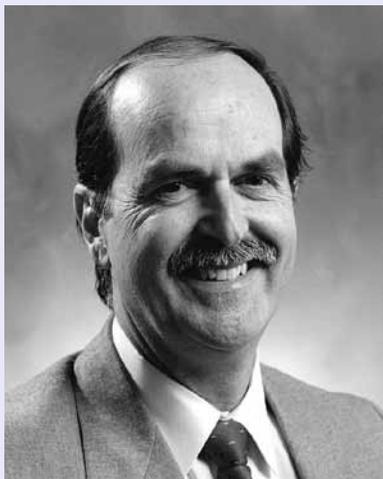
Siegler, Miller, and co-author David Lawrence of Johns Hopkins Applied Physics Laboratory in Laurel, Maryland are part of the Volatiles, Regolith and Thermal Investigations Consortium for Exploration and Science team, one of nine teams funded by SSERVI.

Said Siegler, “These findings may open the door to further discoveries on the interior evolution of the moon, as well as the origin of water on the moon and early Earth.”

For more information about SSERVI and the finding, visit: <http://sservi.nasa.gov>

In Memoriam . . .

Ken Souza, leader and pioneer in Space Life Sciences, passes



Ken Souza

A leader and pioneer in space life sciences, Kenneth A. Souza, 72, of Cupertino, died unexpectedly at Ames on March 22, 2016. Over a 50-year career at NASA Ames, Souza was a visionary in the advancement of gravitational and space biology as a research scientist, administrator and mentor.

His NASA career started in 1966, conducting one of the center's earliest life science spaceflight experiments on Gemini 11. In 1992, his frog egg experiment on the space shuttle Endeavor provided the first evidence that a vertebrate species can reproduce in the absence of gravity.

In addition to his scientific discoveries, Ken provided leadership that led to the establishment of space life sciences as a field of research both nationally and internationally. He was a founding member and past president of the American Society for Gravitational Space Research.

During his NASA career, Souza managed many of the nation's most important space and gravitational biology flight research programs. Teams of scientists and engineers led by Souza developed and flew more than 400 life sciences experiments on the Project Gemini, the space shuttle, Russian Mir and International Space Station platforms.

He also pioneered successful collaborations with scientists in the former Soviet Union at the height of the Cold War. Much of what scientists now know about the effects of space

Ken was an avid sportsman dating back to his high school baseball career at Castlemont High School in East Oakland in the early 1960s. In later years he shared his passion for



Ames Center Director Dr. Eugene Tu (third from left) presented Ken Souza's family March 30, 2016, with the American flag during a ceremony honoring Ken's lifelong service to NASA and the nation.

photo by Carol Carroll

flight on living systems was learned in experiments that were conducted under his tutelage.

Born and raised in East Oakland, Souza graduated from Oakland Castlemont High in 1961. He received his AB degree in bacteriology from UC Berkeley in 1966 and masters degree in microbiology from San Jose State University in 1971.

Souza published more than 100 scientific articles and received a variety of scientific and management awards, including NASA's Exceptional Achievement Medal in 1980 and the Outstanding Leadership Medal in 1991 and 1998. In 1991, he received a scientific achievement award from the Institute of Biomedical Problems, Ministry of Health of the USSR. He was the 2010 recipient of the Jeffries Aerospace and Life Sciences Research Award, awarded by the American Institute of Aeronautics and Astronautics (AIAA).

skiing, golf, boating and sport fishing with his grandsons.

Souza is survived by his wife of 48 years, Mary Wold Souza; children Adam Souza (Chelsey Piasentin) of San Jose, and Katherine Souza of Cupertino; grandchildren Owen and Bennett Souza; father Walter Souza of Castro Valley; and siblings Cheryl Jungers of Rogers, AR; and Michael Souza of Hayward.

A funeral service and celebration of his life was held April 2 at St. Jude's Episcopal Church in Cupertino.

At dusk on March 30, Ames Center Dr. Eugene Tu presented a flag to the Souza family in front of Bldg. 200 to acknowledge Ken's lifelong service to the Agency and the nation.

In lieu of flowers, donations may be made to ASGSR, for the Ken Souza Memorial Student Space Flight Program. For information about the program, visit ASGSR.org.

Remembered, Nans Kunz, former Ames chief NESC engineer

Ames engineer Nans Kunz passed away at age 59 on Feb. 23, 2016, a victim of ALS. Those privileged to work with Nans prior to his retirement at the



Nans Kunz

end of October last year have lost a friend, mentor, gifted colleague and exceptional engineer.

Nans began work as a federal civil servant at Ames in 1978, a "fresh-out" with a degree in mechanical engineering from Oregon State University. His entire professional career was spent at Ames. While here, he earned a master's degree in mechanical engineering at Stanford University, certification as a licensed professional engineer (PE), and recognition as an Ames Engineering Honor Awardee.

Working in the Engineering Directorate during his first seven years at Ames, Nans supported, led or had significant roles in dozens of projects involving many research activities and facilities at the Center.

In 1985, he began technical studies of the Stratospheric Observatory for Infrared Astronomy (SOFIA), leading engineering support teams to establish many of the key features of the observatory. In particular, he guided the technical development of the aircraft modification, most notably the design of the critical shear-layer control configuration and large cavity door.

As primary technical liaison with NASA's German partners, he managed the telescope/aircraft interface definition and other details to assure that science requirements were met. When NASA planned to cancel SOFIA in 2006, his defense of the project's technical status was instrumental in

saving it. He served as the chief SOFIA engineer until resigning that role after the first test flights in 2007. His 22 years of expert, insightful professional effort leave a legacy that will always fly with SOFIA.

In 2008, Nans became the capture manager for a successful SMEX (SMall EXplorer satellite) proposal to study the Transiting Exo-planet Survey Satellite (TESS) concept. TESS, now in development, is planned for launch in 2017. In 2009, he became the NASA Engineering and Safety Center (NESC) chief engineer at Ames, to collaborate with the best engineers in NASA and industry to solve the Agency's most challenging technical problems.

At his retirement celebration, Ames Director Dr. Eugene Tu said "NASA owes you a debt of gratitude for your work. Exciting projects would not have been completed without your skills, attention to detail, hard work and dedication." His friends and colleagues also valued his insightful analytical abilities and objectivity, his managerial

talents, his easy-going demeanor and his good sense of humor.

Nans took pleasure in many activities such as skiing and camping with his family and friends. He found much happiness in tutoring junior high "mathletes," coaching youth soccer, mentoring high school robotics teams and leading wilderness outings for a local troop of the Boy Scouts of America.

Keeping his commute vehicle, a 1986 Porsche 944 Turbo, in top running condition was a favorite hobby. With such activities, his natural abilities, his affinity for his profession and his family and friends, Nans was able to seize many of life's wonderful opportunities.

He is survived by his wife of 23 years Cynthia, children Erin and Alex, father Dieter Kunz, mother Friedel McCarthy, brother Dieter Kunz, and sister Peggy Arida. All who knew him value their association with this exceptional man. Memorial services were held March 7 at the Holy Spirit Church in Fremont.

Former Ames scientist Thora Halstead dies

Former NASA Ames scientist Dr. Thora Halstead peacefully departed life at age 87 at her home on March 9, 2016 after a long illness. She retired from NASA Life Sciences in 1994, where she was the manager of the Space Biology Program; Life and Biomedical Sciences and Applications Division. She was the program scientist for the space shuttle launched in September 1992. Her numerous experiments and published research articles (more than 40) focused on the study of how the cells of living organisms respond to a low-gravity environment.

She was a founding member and past president of the American Society for Gravitational and Space Biology (ASGSB), a 500-plus member society with worldwide scientific community membership. She earned degrees in microbiology from Washington State University (BS), the University of Texas at Austin (MS), and the University of Maryland, College Park (PhD).

After retiring from NASA, in addition to consulting for the Biosciences in Space community, she enjoyed traveling, cooking, painting and making ceramics. Most of all, she enjoyed



Thora Halstead

spending time with her grandchildren who called her, "Sweetie." She is survived by her husband of 60 years, Colonel (retired) Warren W. Halstead; daughter, Gail H. Capp; son-in-law, David J. Capp and three grandchildren, Paul Douglas Capp, Kathryn Lillian Capp and Kimberlee Lynne Capp. She was preceded in death by her son, Douglas Clay Halstead, age 19, in 1976. A viewing was held March 18 at Murphy Funeral Home, in Falls Church, Virginia. Interment will be in Arlington National Cemetery at a later date.

Hubert Munson, former Ames chief of Aeronautics, passes

Hubert Munson 'Jake' Drake (Nov. 25, 1921 - Jan. 13, 2016) was born in Brooklyn, New York, but spent most of his childhood in Hempstead, New York. After graduating from Hempstead High School in 1939, he enrolled in the University of Michigan, College of Engineering (where his father had attended). He selected aeronautical

in the process of establishing a flight test facility at Muroc.

Upon returning to Langley, Hubert was offered the opportunity to transfer to Muroc as a stability and control research scientist for the flight tests of the X-1. The family moved to the Naval Housing in Mojave in September 1947.

In 1958, N.A.C.A. became N.A.S.A. and the beginning of the Space Age had a pronounced effect on the Muroc, now Edwards, Air Force Base. Hubert had the position of advanced planner and consequently was involved in the Flight Research Center's studies in support of such missions. He spent a month at NASA headquarters participating in a study group to select the proper approach to be utilized for the lunar landing. After these studies, Hubert conceived the LLRV (Lunar Landing Research Vehicle) which was used by the astronauts to train for the lunar landings.

In 1965, Hubert was offered the position of chief of Advanced Aeronautical Studies at NASA Headquarters, located at NASA Ames. The family moved to San Jose. In 1970, Hubert transferred to the position of chief of the Aeronautics Division of Ames Laboratory. He served in this position until his retirement in January 1975.

After retiring, Hubert and Eleanor moved to Aptos, on the Monterey Bay. Hubert took up a second career of faceting precious stones for jewelry. The pursuit of this career/hobby took Hubert and Eleanor on trips to places as varied as Kenya, Costa Rica, China and Japan.

Hubert died after a short illness. He was 94 years old.



Hubert Munson 'Jake' Drake

The Muroc flight test unit at the time was very small - only about 15 people, however the work, flight test of advanced aircraft, was of such interest and importance that it rapidly grew. The best known projects at the Center were the X-1, X-2, X-3, D55811 and X-15 and the LLRV. During this period, Hubert served on a number of N.A.C.A. advisory committees.

The family moved to Lancaster in 1951. Catherine Rose Drake was born on Aug. 26, 1951 and Carol Ann Drake was born three years later on Oct. 6, 1954.

engineering as his specialty. Due to the war - college courses were compressed (no vacations) - so he graduated in February 1943.

Upon graduation, he was recruited by the National Advisory Committee for Aeronautics (N.A.C.A.) and went to work at their laboratory at Langley Field, Virginia. He was assigned to the free flight tunnel as a stability and control engineer. Hubert's work at N.A.C.A. involved the study of flying qualities of advanced radical designs of aircraft and guided missiles.

While in college, he met Eleanor Helen Rose who was attending the School of Nursing at the university. Hubert and Eleanor were married April 1, 1943 in Hempstead, New York. The ceremony was performed by his grandfather Reverend Hubert Barney Munson. There was a great demand for registered nurses at the time. Eleanor worked as head nurse in the new-born nursery at Buxton Hospital, until the birth of David, Oct. 19, 1944.

With the end of the war, it was possible to purchase an automobile and using accumulated annual leave they took a trip west. They visited many national parks and Muroc Air Force base in California. N.A.C.A. was

NASA's fallen remembered



NASA photo by Don Richey

Employees gathered at NASA Ames' Day of Remembrance Ceremony Jan. 28, 2016, to honor those lost in test flights and aeronautics research throughout our history, the Apollo 1, Challenger and Columbia crews, as well as other members of the NASA family who lost their lives supporting NASA's mission of exploration. As a special guest and valued Ames colleague, J.P. Harrison gave remarks in honor of his late spouse and astronaut, Kalpana Chawla. He's seen here, center, with Astronaut Yvonne Cagle of Ames (left).

The Owls share their wisdom during visit, tour of Ames

At the invitation of Ames Center Director Eugene Tu, a group from the Owl Feathers Society visited here March 22, 2016, to present thoughts about NASA at this historical moment. As a 30-year employee at NASA Ames, Tu appreciates the mentoring and advice that previous generations of Ames leaders provided to him.

The Owls are a group of Ames retirees who began meeting in 1983, at quarterly lunches with technical presentations by current Ames researchers. They take their name from the final research project of Harvey Allen, in which he moved an owl feather through a bathtub to discover that owls flew upon their prey so silently because of small protruding feathers on the leading edge of their wings. The Owls have no formal leader, though Tom Snyder and Vic Peterson these days send out most of the emails.

After a center overview given by Tu, they were escorted on a short tour to see the NASA Advanced Supercomputing Facility to see the hyperwall. Afterwards, there was a briefing by the deputy center director Tom Edwards about Ames' vision for the future and



Left to right: Vic Peterson, Tom Gregory, Irv Statler, Victor LeBacqz, Bill Berry, Tom Snyder, Henry Lum, Bob Yee during their visit to the NASA Ames on March 22, 2016.

NASA photo by Dominic Hart

our activities towards that goal. They were then given a briefing and demonstration about SmallSats by Scott Richey. From there, it was lunch at Mega Bites to share their thoughts about what they had just seen and

heard, and a question-and-answer period with Krisstina Wilmoth to ascertain where they thought Ames should be in the future. There are plans for them to return and be interviewed on camera, for posterity.

NASA Ames team meets Silicon Valley's future engineers

BY MARIA LOPEZ

MESA Day is an annual science Olympics type competition event where more than 750 Mathematics, Engineering, Science Achievement (MESA) middle school and high school students from Santa Clara County showcase their Science, Technology, Engineering and Math (STEM) projects. The 2016 San Jose State University MESA Day was held on March 5, 2016, and NASA Ames volunteers judged the balsawood glider competition. The judging scored longest flight time in seconds for middle school students and longest flight time in seconds and a three-view drawing for high school students.

Ames African American Advisory Group member Alex Langford served as the lead judge and stated, "Seeing the students so enthusiastic when their gliders flew was inspiring. Everyone had fun no matter how well their glider flew." Most notably, former NASA Ames intern and MESA alumnus, Gabriel Alvarez, who now works as a thermal R&D engineer with Space Systems Loral, also served as a balsawood glider judge. Alvarez



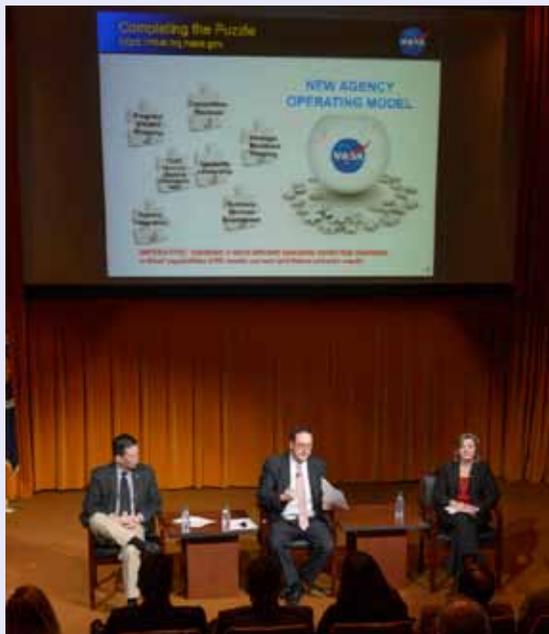
Balsawood Glider Judges and Competition Winner: Left to Right: Alex Langford (Code RE), Anjan Chakrabarty (Code TI), Gabriel Alvarez, Jay Singh (Code BT), Balsawood Glider Competition Winner, Eduardo Chavez (Code TSM), Jose Chavez-Garcia (Code TSM), Thomas Stucky (Code TI) and Maria C. Lopez (Code JSG).

was an intern within the Ames Engineering Systems Division and was involved with environmental testing for TechEdSat, engineering support for SPHERES and thermal analysis and design for the Mission Design Center. Alvarez credited his NASA experience, "My NASA internship helped give me a hands-on experience of actual flight hardware and design. By working on small satellites at Ames, I was exposed to many engineering subsystems and their integration. I now focus

specifically on the thermal subsystem, but the design of the thermal subsystem is contingent from inputs from other subsystems, like electrical, structural and orbits. Having the opportunity with NASA definitely helped give me the big picture philosophy to do thermal analysis and design."

All in all, the NASA team enjoyed the day spent with the potential rising aerospace engineers and sharing their experience at NASA with the engaged and excited students.

Lightfoot and Roe provide updates



NASA Associate Administrator Robert Lightfoot and NASA Deputy Associate Administrator Lesa Roe visited Ames and held an all hands Jan. 28, 2016, in the Syvertson Auditorium. Topics included Agency updates and the latest information about the Business Services Assessment (BSA).

NASA photo by Dominic Hart

Mexico's Space Agency visits



NASA photo by Dominic Hart

Javier Mendieta, director general, Mexican Space Agency seen here while visiting Ames Jan. 29, 2016.

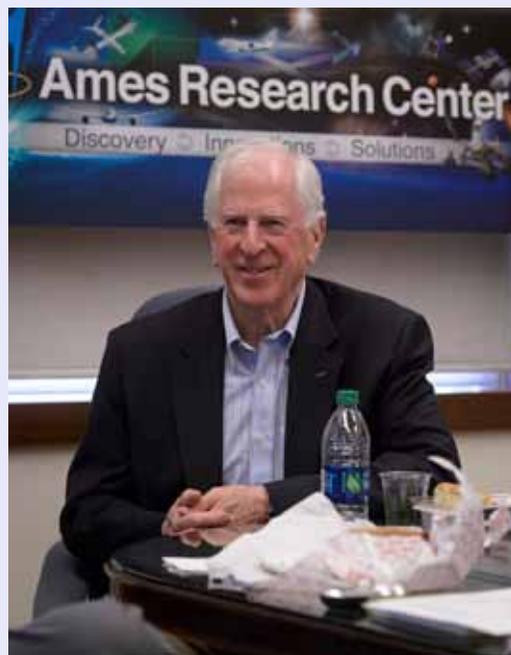
Israel's ambassador visits



NASA photo by Dominic Hart

Ambassador of Israel Ron Dermer visited Ames and met with the center director and toured the supercomputer facility on March 29, 2016.

U.S. Congressman Thompson stops by



NASA photo by Dominic Hart

Mike Thompson U.S. Rep., D-CA 5th District visited Ames for a tour and to meet with senior Ames management March 24, 2016.

Our Contribution to Understanding Climate Change -- and Other Global Processes: A poster session held



Members of Ames' Earth Science Division delivered more than 100 presentations at the annual American Geophysical Union meeting in December 2015. Their presentations addressed a wide range of topics, including climate change, atmospheric and ocean processes, Earth system modeling, new technology developments and supercomputing methods and applications. Those who were not among the 24,000 conference attendees, or missed the presentations, still had a chance to hear from Ames scientists, and their Bay Area colleagues, about their work at the Earth Science Division Poster Session Feb. 10 at Ames. They learned about what has been Ames Research Center's contribution to understanding climate change and other global processes. The session began with a presentation by Dr. Ray Wells (speaking, photo right) of the U.S. Geologic Survey, "Subduction Zones in the 21st Century – Giant Earthquakes and Global Opportunities for Hazard Mitigation." Posters were open for viewing.



NASA photos by Don Richey

All employees, disabled or not, can work well together



The Office of Diversity and Equal Opportunity welcomed Karen Crowe Feb. 3 to present a Diversity & Inclusion Lecture Series, "Noticed Abilities – Best Practices for an Inclusive Workplace." She discussed how Ames can create a workplace where inclusion is valued for all employees including those individuals with disabilities. Crowe, seen here, left, with Jennifer Malloy, Ames employment coordinator, right, during the presentation, is a former consumer of the Department of Rehabilitation, and has been employed with the State Department of Rehabilitation for the past 24 years. She began her career providing counseling and guidance to people with disabilities and assisting them with returning to gainful employment. She discussed how the Department of Rehabilitation services can be of benefit to NASA employees, its management and members of the public. In addition, she addressed how we can all work together to promote the hiring and advancement of people with disabilities.

NASA photo by Don Richey

Ames researchers win coveted innovation grants from USGS

How can the advanced technologies developed at NASA Ames be applied to solve urgent problems facing

Benjamin Brooks and Sarah Minson to use optical wing-deflection sensors in the estimation of fault creep rates.

derived flood maps to be delivered to USGS field crews and first responders in near real-time.

Ames Engineering (Code R) joins a team of USGS biologists led by Susan De La Cruz to develop the next generation of wildlife tracking tools, a project that also advances co-development of lightweight technologies for SmallSat, UAS and other wildlife applications.

This year's awards, worth approximately \$200,000 will be administered under an Interagency Agreement between the USGS Innovation Center and NASA Ames. More than \$700,000 has been awarded to NASA Ames researchers under this agreement as part of a broader strategy to identify and develop alignments between the two Agencies and pursue science opportunities from orbit to core. For more information, contact Jonathan Stock, director of USGS Innovation Center at jstock@usgs.gov.

These rates are essential for determining the seismic hazard from faults.

Lynn Rothschild (Code SST) has teamed up with USGS biologist David Blehert to detect avian flu in migrating birds using synthetic biology. The ability to detect some strains of avian flu carried by wildlife in near real-time may allow us to limit transmission of

this economically destructive pathogen.

Brian Coltin (Code TI) will be working with Marie Pepler and the national USGS flood-mapping team to operationalize image analysis tools. These tools will allow satellite/imagery-



Innovation Fund winner Susan Frost (left) conspires with United States Geological Society (USGS) seismologist Sarah Minson (right) at the recent USGS Innovation Center workshop.

our nation's Earth scientists? The U.S. Geological Survey's (USGS) Innovation Center has awarded four new grants to NASA Ames researchers to find out.

Susan Frost (Code TI) will continue her work with USGS geophysicists

Tabazadeh speaks about her scientific and personal journey



NASA photo by Dominic Hart

In celebration of Women's History Month, on March 15, 2016, NASA Ames' Women's Influence Network (WIN) hosted guest speaker Azadeh Tabazadeh, seen here at Ames left. She presented her talk, "My Scientific and Personal Journey as the Sky Detective" about her life journey from being raised in Iran to becoming a nationally recognized research scientist at NASA Ames. In 2005, TIME wrote a feature article about Tabazadeh's scientific discoveries under the heading: "The Sky Detective." Most of the work described in the article was done while she held a senior research scientist position at NASA Ames. During the presentation, she discussed her life and work before, during and beyond NASA, what triggered her interest in science early on and what compelled her to write "The Sky Detective: A Memoir of How I Fled Iran and Became a NASA Scientist."

Brazilian Secretaries of Education examine program supported by HACE

BY MARIA C. LOPEZ

The Hispanic Advisory Committee for Employees (HACE) has promoted Science, Technology, Engineering, and Mathematics (STEM) exploration and careers amongst the Latino community, including a recent summit, presented by the Statewide Mathematics, Engineering, Science Achievement (MESA) Program, with Brazilian Secretaries of Education.

The United States Department of Education requested MESA to host the Brazilian Secretaries of Education, since MESA is nationally recognized for its innovative and effective academic development program for STEM fields and is exactly the type of STEM program Brazil is aspiring to implement.

Three Brazilian state secretaries of education visited the MESA Program at San Jose State University (SJSU) on Jan. 27, 2016, to explore replicating the program in their country. The summit included MESA program leaders; SJSU officials; MESA middle school and high school students; and Industry Advisory Board members, who obtain resources and volunteers within their companies in support of MESA initiatives. Maria Lopez, the NASA Ames liaison to the SJSU MESA Schools program, spoke about HACE's association with MESA in alignment with



photo by Danielle McNamara, MESA Strategic Communications assistant director

Front Row (right to left): Megan Ellis, Brazilian U.S. Embassy Cultural Affairs Officer; Júlio Gregório Filho, Federal District State Secretary of Education; Marco Antônio Brandão Lopes, Acre State Secretary of Education; Maria C. Lopez, NASA Ames - HACE Member; Christina Ramos, SJSU MESA Schools Program Director; Tzel Ramos, Oracle Program Manager; Juanita Muñiz-Torres, MESA Statewide Interim Executive Director; Joanna Guerrero, VMware Senior DevOps Engineer; Marcia Mizuno, Brazilian U.S. Embassy Senior Cultural Affairs Specialist. Back Row (right to left): Blanca Sanchez-Cruz, SJSU MESA Engineering program director; Marcos Herrera, Community Liaison; Charlotte Belsick, Lockheed Martin Terminal High Altitude Area Defense Interceptor Engineering Manager; Carlos Eduardo Vieira da Cunha, Rio Grande do Sul State Secretary of Education at the recent summit education held Jan. 27, 2016.

the Federal STEM Education five-Year Strategic Plan, which includes increasing and sustaining youth and public engagement in STEM.

The MESA Program provides educationally and economically disadvantaged students with the skills and resources to be successful in school and careers in STEM disciplines. MESA provides a unique combination of enrichment activities, hands-on competitions, academic support, and industry involvement for students from

the middle school level through college graduation. HACE has organized NASA participation from the advisory group members and the Center benefiting MESA via industry shadow days, judges for science Olympics, and motivational STEM career speakers for local MESA middle school and high school students. The summit validated HACE's efforts to contribute to the success of MESA and the next generation of scientists, engineers, and entrepreneurs.

Ames female scientists, researchers discuss their careers

In collaboration with the Smithsonian's Museum Day Live celebration, Colleen Carroll, Arwen Dave, Ali Guarneros Luna, Leedjia Svec and Elizabeth Wagstaff spoke about the accomplishments and dedication of women at NASA working in fields relating to science, technology, engineering and mathematics. The event was held March 12, 2016, in the Ames Visitor Center, and was open to the public, especially women and girls, to enjoy and share in the personal histories and career development journeys of NASA Ames women scientists and researchers. Leedjia Svec, is a director for military programs; Ali Guarneros Luna, is an aerospace and systems engineer; Arwen Dave, is a scientist on the Lunar Plant Growth Habitat team; and Colleen Carrol and Elizabeth Wagstaff, are both researchers in Human Computer Interaction projects focused on user-centered design.



photo by Matt Buffington

Employees pitch innovative ideas at first Ames Innovation Fair

Mission and Mission Support organizations were invited to propose their innovative ideas for the First Annual Ames Innovation Fair. The objective was to identify and provide resources to innovative projects that advance NASA's mission goals. The Innovation Fair and associated collaboration website will offer new forums for collaboration and allow for employee advocacy in project selection.

This year, Ames will award at least \$150K (up to \$25K per award) and one FTE (up to 0.25 FTE per award) in total. Proposers pitched their innovation concepts at a one-day Innovation Fair on March 3, 2016. Posters were required for proposers and were printed by the Innovation Fair coordinators.

NASA Ames employees had the opportunity to vote on their favorite concepts at the Innovation Fair and were treated to free pizza offered by the Ames Exchange. The top concepts will be added to the Center Innovation Portfolio.

All voting results will be provided to management and will be available online. Awards will be distributed this fiscal year (FY2016). A mix of mission and mission support innovations will be awarded.

The 2015 NASA FIRST team engaged employees across Ames



NASA photos by Dominic Hart

Employees enjoy pizza at the 1st Annual Ames Innovation Fair March 3, 2016. The objective of the fair, along with the collaboration website, offers new forums for collaboration.



about innovation. The team found that innovative ideas to advance the center's future existed but could not move forward due to lack of a program for support. The concept of an Innovation Fair addresses this challenge by creating a pathway for support and was presented to center management.

Now, center management and other innovation efforts across the center

(CIF, SIF, CAS) are working together to support the Innovation Fair.

For additional details see: <https://intranet.share.nasa.gov/agency/amesinnovationfair> .

Blue Angels at Moffett, await their debut flyover at Superbowl 50



photo by Astrid Albaugh

The Navy's Blue Angels flew over Superbowl 50 at nearby Santa Clara's Levi's stadium, at the end of Lady Gaga's rendition of the National Anthem before the game began, Feb. 7, 2016. Above they are seen here parked on Moffett Field runway on Feb. 6, 2016 awaiting their debut flight at the game the next day.

Ames ongoing clubs/monthly events calendar

African American Advisory Group (AAAG) Meeting, last Tuesday each month, 12:00 - 1:00 p.m., Building N-255, Room 101C. POC: Porsche Parker, ext. 4-0044.

Asian American Pacific Islander Advisory Group (AAPIAG) Meeting, Third Thursday each month, 1:00 p.m. - 2:00 p.m., Building N213, Room 204A. POC: Tony Damian, tony.a.damian@nasa.gov

Moffett Aikido Club, Monday and Wednesday evenings, 6:30 p.m., Building 944. Aikido is a non-competitive, defensive martial art known as the "Way of Harmony." POC: Diane Pereda (650) 575-9070 or Robert Dean (650) 787-1007, email: mfaikido@aol.com

Ames Amateur Radio Club, third Thursday each month, noon, Building N-T28 (across from Building N-255). POC: George Tucker, at ext. 4-2200.

Ames Bluegrass Club, Tuesdays from 11:30 a.m. to 1:00 p.m., Building 944. Players of all instruments and all levels are welcome, but we are particularly interested in experienced players willing to help improve the group's musical skills. POC: Bob Haberle at ext. 4-5494 or email: robert.m.haberle@nasa.gov

Ames Bocce Ball Club, Ames Exchange-sponsored club is seeking members. POC: Mike Lindsay email: michael.c.lindsay@nasa.gov

Ames Bowling League, Thursdays, 6:15 p.m. at Fourth Street Bowl in San Jose. Need regular and substitute bowlers. For sign up questions, contact Michael Hom at ext. 4-0302 or Mina Cappuccio at ext. 4-1313.

Ames Contractor Council Meeting, first Wednesday each month, 11:00 a.m., Building N-200, Committee Room. POC: Herb Finger at ext. 4-6598.

Ames Federal Employees Union (AFEU) Mtg., third Wednesday each month, Noon. Building N-204, Room 101. Guests welcome. Check for schedule changes at: <http://www.afeu.org>. POC: Paul K. Davis, ext. 4-5916.

Ames Golf Club, Members have the opportunity to play approximately 13 tournaments per year at a variety of 18-hole golf courses in the Bay and Monterey Area. POC: Barry Sullivan: Barry.T.Sullivan@nasa.gov.

The Hispanic Advisory Committee for Excellence (HACE) Meeting, first Thursday each month, 11:30 a.m. - 12:30 p.m., Building N-255, Room 101C. POC: Jeanette Zamora, jeanette.zamora-ortega-1@nasa.gov.

Ames Jazz Band Club, Thursday evenings, 5:30 p.m. - 7:00 p.m., Building 944. POC: Ralph Bach, email: ralph.e.bach@nasa.gov

Jetstream Toastmasters, Mondays, 12:00 p.m. - 1:00 p.m., Building N-262, Room 100. POC: Tim Steiger, ext. 4-0195, tim.steiger@nasa.gov. Web: <http://jetstream.freetoasthost.com>

Native American Advisory Committee (NAAC) Bi-Monthly Meeting, First Thursday each month, 11:00 a.m. - 11:45 a.m., Building 19, Room 1096. For more information, contact Anita Abrego at Anita.I.Abrego@nasa.gov, or call ext. 4-2565.

Ames Nimble Knitters Club, Mondays, 11:30 a.m., Building N-210, Room 141. POC: Diane Alexander at ext. 4-3140 or email diane.alexander-1@nasa.gov. All knitters and crocheters are welcome to attend and participate in our charity projects.

Ames Roller Hockey Club, meets daily from Noon to 1:00 p.m. at rink on north end of the 80-foot-by-120-foot wind tunnel. Players should have experience skating and must wear protective equipment. POC: James Prunty, james.a.prunty@nasa.gov

Ames Safety Committee, third Thursday each month, 10:00 a.m. - 11:00 a.m., Building N-237, Room 200. POC: John Livacich, jlivacich@mail.arc.nasa.gov, ext. 4-3243.

Women's Influence Network (WIN), first Wednesday each month, Building N-244, Room 209, noon - 1:00 p.m., POC: Ali Guarneros Luna, ali.guarnerosluna@nasa.gov

Exchange Information

Information about products, services and opportunities provided to the employee and contractor community by the Ames Exchange Council. Visit our web site at: <http://exchange.arc.nasa.gov>

Beyond Galileo Gift Shop N-235 in the cafeteria, 8:00 a.m. - 2:00 p.m., ext. 4-6873

Visitor Center Gift Shop (Exploration Center), Tues-Fri, 10:00 a.m. - 4:00 p.m., Sat. - Sun, noon - 4:00 p.m., ext. 4-5412. Remember to purchase your baby shower, birthday and holiday gifts at Ames' two gift shops!

Mega Bites Cafeteria N-235, Mon - Fri, 6:00 a.m. - 2:00 p.m., ext. 4-5969/Catering ext. 4-2161

The SpaceBar: Subs & Burgers, Bldg. 3, The SpaceBar is open Mon through Fri from 7:30 a.m. - 7:00 p.m. Continental breakfast and coffee starting at 7:30 a.m. with full food and beverage service 11:00 a.m. to 7:00 p.m. See: <http://exchange.arc.nasa.gov/cafe/menu.html> for menu items.

RV lots available. Call to reserve a space at (650) 604-0698. Civilian/Contractors, \$50/mo; military \$25/mo

NASA Lodge (Bldg. 19) (650) 603-7100. Where to stay when you're too tired to drive home? What about the lodge?! Two types of rooms: Bldg. 19 (43 rooms), rate: \$65/night (\$5 ea add'l adult); Bldg. 583 A&B (150 rooms), rate: \$55/night (\$5 ea. add'l adult); B547 rate \$60/night (for large groups)

Ames Swim Center (N-109) (650) 603-8025

The swimming pool is now open. Hours of operation are as follows (lap swim only):
MWF 10:00 a.m. - 1:00 p.m.
MWF 3:00 p.m. - 6:00 p.m.
TTH 10:00 a.m. - 1:00 p.m.
TTH 4:00 p.m. - 7:00 p.m.
The pool is heated year round. The pool normally is available for lap swim, pool parties and special events. POC: Ryan Storms, pool manager (650) 603-8025. Memberships: single memberships: \$60/yr. Family memberships: \$80/yr. After purchasing a membership, there is an entrance fee: daily entrance fee - \$3/day or lap pass fee - \$50 for 20 uses. Platinum membership - \$380/yr. (no daily fee). Special events include military training, swim team events, kayak role practice, etc. The cost for special events is \$75/hr, or \$50/hr for military.

Exchange basketball gym, Bldg. 2 (650) 603-9717

Hours of operation:
M-F 11:00 a.m. - 1:30 p.m.
M-F 4:00 p.m. - 7:00 p.m.

Chase Park reservations, call ext. 4-4948
NACA Park reservations, call ext. 4-4948

Ames emergency announcements

To hear the centerwide status recording, call (650) 604-9999 for information announcements and emergency instructions for Ames employees. You also may listen to 1700 KHz AM radio for the same information.

Ames Cat Network

The Ames Cat Network needs help finding homes for cats trapped at Moffett. They range from feral to abandoned/lost pets. They are tested, altered and inoculated. Call Iris at ext. 4-5824 if you or someone you know are interested in fostering or adopting a cat.

Front main gate reopens



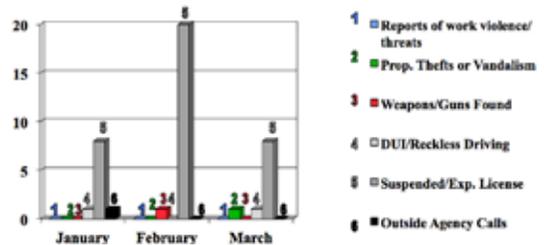
NASA photos by Don Richey

The main gate guard shack reopened April 4, 2016 and is farther east on Clark Road, so Ames employees and visitors only need to present identification at the Arnold Avenue gate. Because of this change, it is important that employees instruct their first-time visitors to get their badges at the visitor badging office before approaching the Arnold Avenue gate to avoid delays for themselves and for others. Construction will continue in the area of the main gate. There may be occasional traffic delays due to lane configuration changes or lane closures during this period of construction. Employees should allow additional travel time when commuting to their office as conditions require. Alerts will be posted in advance of known delays.

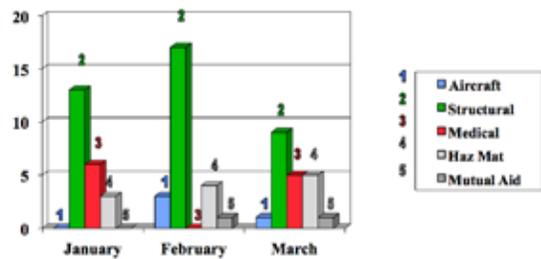
Protective Services monthly activity

A statistical summary of activities of the Protective Service Division's Security/Law Enforcement and Fire Protection Services units for the three-month period ending March 2016 is shown below.

Protective Services Office – Activities
Security/Law Enforcement Monthly Activity Report



Protective Services Office – Activities
Fire Protection Services




National Aeronautics and Space Administration
Ames Research Center
Moffett Field, CA 94035-1000



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