



# The Critical **PATH**

2015 Summer Issue • A Flight Projects Directorate Quarterly Publication

## OSIRIS-REx – “Kiss my Asteroid”

How do you kiss an asteroid? Not a question that comes up every day, but one that a team of engineers and scientists has been working on for at least 11 years. OSIRIS-REx is going to do just that—kiss an asteroid. Bennu to be specific—the asteroid formerly known as (101955) 1999 RQ36. The first OSIRIS proposal was submitted for the Discovery-11 mission opportunity in 2004 and again for the Discovery-12 in 2006, this time with GSFC as a partner. With New Frontiers-3, it became the Origins, Spectral Interpretation, Resource Identification, Security, Regolith Explorer (OSIRIS-REx) and was finally selected in May 2011.

How does one kiss an asteroid? If this were a kid's joke, the answer would be “very carefully.” And, while it's not

a joke, the answer is the same for OSIRIS-REx, but with a 3-meter pogo-stick with an air filter-looking contraption on the end of it. That pogo-stick and air filter are the heart and soul of the OSIRIS-REx mission—the TAGSAM: Touch and Go Sample Acquisition Mechanism.

The photo below shows the TAGSAM qualification arm and head on a bench. From right to left and back again, you see the shoulder joint, solid arm, an elbow joint, the pogo arm with three nitrogen gas bottles, and the wrist joint and TAGSAM head.



**TAGSAM Arm and Head**

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## Defining the PACE

The Pre-Aerosol, Clouds, and ocean Ecosystems (PACE) mission promises to deliver on the most comprehensive look at global ocean color measurements in all of NASA's Earth Science history. The Goddard team is challenged with the task of Defining the PACE mission and maximizing the science return within the allocated budget. Performing this task within a \$705M cost box may not be as straightforward as one would expect. The design-to-cost (DTC) process is not typical of a directed mission, but by virtue of its name, it sets the criterion that cost overruns are explicitly not part of the equation, regardless of the reason.

If one spends any amount of time observing Earth's oceans, the one thing that becomes readily apparent is the ocean water is anything but uniform in its color. The ocean color varies immensely depending on exactly where one is looking (e.g., coastal waters are very different than the open ocean)

*(Continued on page 6)*



*David Mitchell*

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# Message from the Director

Slowly but surely I have been making the rounds through the Code 400 divisions for all hands meetings and have enjoyed the interactions with the staff. The teams are working on some amazing projects which, in my mind, is the reason many folks initially joined NASA. As part of these discussions, a theme emerged that I have been stressing, which is the need for employees to speak up when something does not seem quite right. A term to describe the issue is “Organizational Silence.” There are well-documented cases within as well as outside of NASA where situations went sour with a contributing factor being that people with concerns did not feel compelled to speak up due to organizational barriers or other factors. As director of Flight Projects, I want to put the word out that everybody is empowered to speak up. We need to maintain a culture of openness and ensure that everyone has a safe environment and feels comfortable to raise his or her hand and be heard. We all have the same interests in mind: the safety of people, the protection of property, and the success of missions. I want you all to feel free to speak up and we will sort things out. It is so much better to slow down and take stock of the situation rather than deal later with a bad day scenario. Know that we have your back.

On the personnel front, I want to congratulate the selectees for the annual Agency Honor Awards. Goddard employees, and Code 400 employees specifically, were well represented in the selections. It is always a pleasure to see our hard-working people receive recognition for their efforts. Additionally, I want to recognize the outstanding work that 50 plus summer interns brought to our directorate in the past few months. It is always great to get this annual infusion of energy and excitement with the interns working at Goddard.

As of this writing, MMS and DSCOVER continue going through their paces in commissioning phase. The teams have executed well as have the spacecraft. We were also just notified of a selection for a Phase A study on a new astrophysics mission to go along with several other recent acquisitions (competed and directed) for pre-Phase A and Phase A activities. We continue to seek new work. I am encouraged with the progress we have made but we still have many goals to achieve, including landing a near term in-house mission to backfill what has recently been launched.

Finally, I want to welcome Tom McCarthy to the front office of Code 400. Tom joins the front office as the new deputy director. His experience, wisdom, and strong work ethic will be a tremendous boost to the entire directorate.

As always, feel free to drop by to say hello and tell me what is on your mind regarding work or anything else.

Dave

***David F. Mitchell***  
***Director, Flight Projects***  
***[david.f.mitchell@nasa.gov](mailto:david.f.mitchell@nasa.gov)***

# Personality Tintypes

## Herb Eaton



Herb Eaton

Herb is a Senior Graphic Designer for the Program Analysis and Control (PAAC) Contract. He provides print and publication design, illustration, virtual modeling, video, animation, and photography support services for PAAC customers at Goddard and throughout NASA.

### Residence

Lives in Columbia, MD with his wife, son, and their two cats.

### Born

Chicago, Illinois

### Education

B.F.A. in Graphic Design from Howard University

### Life before Goddard

Herb developed an interest in publication art and design while in high school. His professional career began in 1986 when he started finding design work at Howard University and around Washington, DC. Herb was hired by Patuxent Publications during summer vacations from college, as part of a team of designers, to work on their county newspapers and magazines, and do some of their advertising design work. After college, Herb operated his own freelance graphic design business, offering his services to advertising agencies, and working directly for small businesses and non-profit organizations in suburban Maryland. During this period, Herb first learned of the wide variety of companies and organizations that had a constant need of graphic services.

One of the most enlightening experiences he had in his early career was providing publication design services for the Baltimore-Washington Conference of the United Methodist Church. Herb designed their bi-weekly newspaper, *The Connection*, designed several local church newspapers, and worked on their regional magazine, *Kaleidoscope*.

*(Continued on page 9)*

## Laura Betz



Laura Betz

Laura is a science writer and communications officer for the James Webb Space Telescope. In addition to science writing, she coordinates with media and leads outreach initiatives for the project.

### Born

Towson, Maryland

### Education

BA – Journalism concentration: Environmental Science from University of Maryland, College Park

### Life Before Goddard

Laura has always loved science storytelling. While in college, Laura worked at University of Maryland Television (UMTV) as a television producer, at the University of Maryland's Student Legal Affairs Office, and at her various internships. In National Geographic's Editorial Development Department, she generated story ideas, researched story proposals and helped researchers with their projects. As a part of Discovery Communications Digital Media Department, she worked with social media and cut a viral video on a robot used by Johns Hopkins Hospital. At WUSA9, she shot, edited, and narrated a story about mountaintop mining. Laura also interned at Maryland's Secretary of State's International Affairs Division where she met with foreign delegations to organize talks on the economy, the environment and the government. After college, Laura worked freelance and at Fox 45 in Baltimore doing camera work.

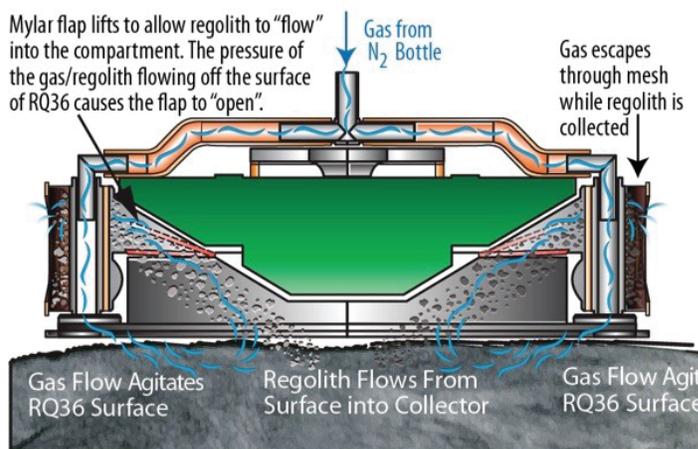
### Life At Goddard

Laura started her career at Goddard working as a science writer on Joint Polar Satellite System (JPSS) and JWST. In addition, Laura worked on the media team supporting Landsat 8's launch by live blogging from the launch. Laura spearheaded the effort to get Landsat 5 a Guinness book world record for Longest Operating Earth Observation Satellite. She now helps bring the story of the US's largest science project, JWST, to the world. In addition to science

*(Continued on page 9)*

**(OSIRIS-REx continued from page 1)**

The photo below shows a close-up of the TAGSAM head and wrist joint outside of its launch container. Around the side of the TAGSAM head, the screen through which the nitrogen gas escapes after being released through an orifice in the head and into the regolith (asteroid dirt) can be seen. The graphic at right explains how it works.



**How it works**



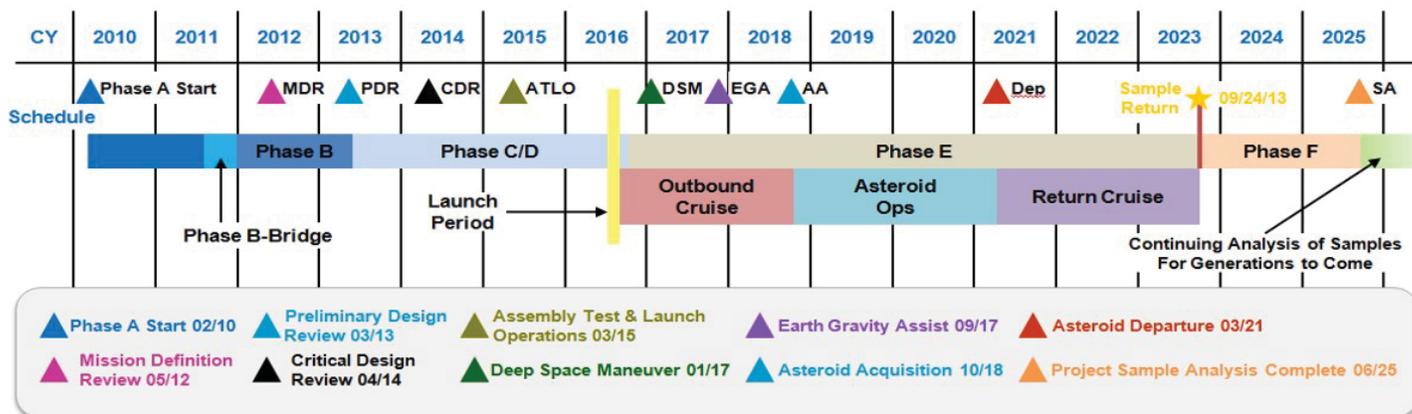
**TAGSAM Head**

The journey to Benu will include a plane-changing Earth gravity assist approximately 1 year later. In August 2018, the OSIRIS-REx spacecraft will arrive at the asteroid and begin its remote sensing/imaging campaign in order to pick a sample site. This starts with the Navigation Campaign where a preliminary survey of Benu will provide the data needed for the creation of an initial shape model and mass estimate. The navigation team, led by GSFC's Flight Dynamics group, will then be able to transition from starfield navigation to landmark-based navigation in orbit around the asteroid. From there, the mission transitions to the Site Selection Campaign where spectral mapping and progressively higher resolution imaging data permits the selection of a sample collection site. Once the site is selected, the mission will execute two rehearsals in preparation for collecting the sample. These will progressively provide assurance that we can safely contact and move away from Benu. All of this culminates with executing TAG. In the October 2019 timeframe, from orbit around Benu, the spacecraft will execute a departure maneuver at T-4 hours followed by two more maneuvers: Checkpoint at T-20 minutes and Matchpoint at T-10 minutes. This Matchpoint maneuver, at an altitude of 55 meters, will put the spacecraft on a descent trajectory at ~10 cm / second. The spacecraft will have a set of contact triggers in

The TAGSAM is capable of collecting up to 2 kg of regolith, depending upon the density of the material. The Level 1 science requirement is for 60g. The recently completed verification test campaign demonstrated that TAGSAM could consistently collect at least 150 g, under all verification test cases—which well exceeds the accuracy of our measurement technique for determining whether a sufficient sample has been collected.

**Mission Timeline**

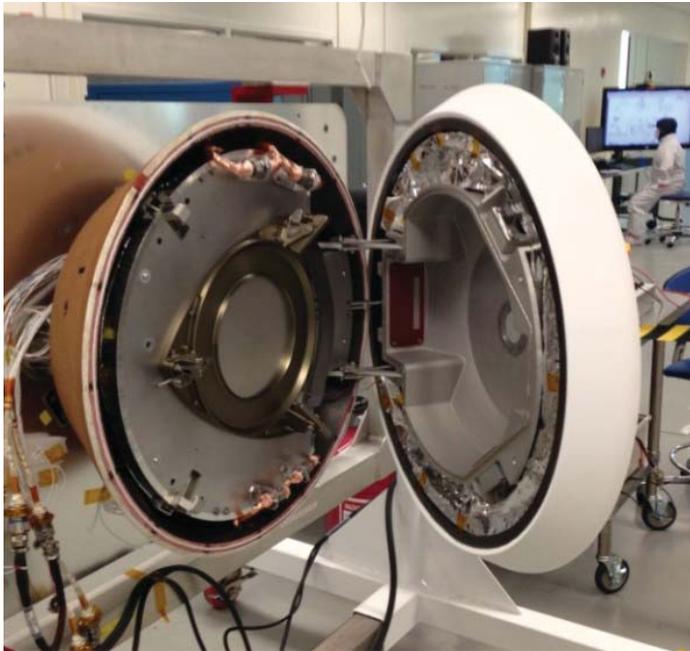
To get the sample, the OSIRIS-REx mission will launch in September 2016 on an Atlas-V 411 from the Cape Canaveral Air Force Station (CCAFS). (See mission timeline below.)



*(Continued on page 5)*

## *OSIRIS-REx continued from page 4)*

place based upon acceleration and micro-switches. Once a trigger detects contact, ordnance will fire opening one of the nitrogen gas bottles, the regolith will be stirred up and captured in the TAGSAM head, and the spacecraft will perform a backaway maneuver at T+5 seconds. Assuming we're successful, the head will be stowed in the sample return capsule and the spacecraft will wait in the vicinity of Bennu until it's time to leave—nominally March 2021. (If we're not successful on the first attempt, there are two more nitrogen gas bottles on the TAGSAM for another two attempts.) On September 24, 2023, approximately 4 hours before reentry, the sample return capsule will be released from the spacecraft and will land in the Utah Test and Training Range at Hill Air Force Base outside of Salt Lake City.



***Sample Return Capsule on Fixture***

Currently, the OSIRIS-REx spacecraft bus is in integration. Two of five instruments have been delivered (both spectrometers); OTES (OSIRIS-REx Thermal Emission Spectrometer—built by Arizona State University) and OVIRS (OSIRIS-REx Visible and near-IR Spectrometer—built by GSFC). The remaining three instruments are coming later this Summer/Fall. The spacecraft will begin environmental testing in November at Lockheed Martin. It ships to Kennedy Space Center (KSC) next May, and will launch in September 2016. Seven years later, to the month, at least 60 grams of regolith from Bennu will make its way to the Curation Facility at Johnson Space Center (JSC).

The OSIRIS-REx mission is led by Dr. Dante Lauretta, University of Arizona, and is managed out of the Flight Projects Directorate, by the OSIRIS-REx project, Code 433.



***Start of spacecraft bus integration***



***Sampling Configuration***

GSFC is also providing the OSIRIS-REx Visible and near-IR Spectrometer (OVIRS) instrument—which is managed out of Code 490. The spacecraft is being built by Lockheed Martin at their Waterton, Colorado facility.

For more information on OSIRIS-REx, please see:

[www.asteroidmission.org](http://www.asteroidmission.org)

***Michael L. Donnelly / Code 433  
OSIRIS-REx Project Manager***

***(PACE continued from page 1)***

because that which is dissolved or suspended in the water, at that location, varies. Such variations provide the basis for ocean color science. In addition to dissolved inorganic material, such as salts, the oceans contain a variety of microscopic living organisms, each with their own unique impact on the optical properties of water body. In fact, one of the most important components found in the ocean water are phytoplankton. These microscopic marine algae form the base of the marine food chain and while they only comprise approximately 1 percent of the Earth's plant life, they produce more than 50 percent of the oxygen we breathe. The ocean color measurements that will be provided by PACE are critical for understanding ocean ecology and the global carbon cycle and how it affects and is affected by climate change.

The SeaWiFS (Sea-Viewing Wide Field-of-View Sensor) satellite (launched in 1997 and in operation through 2010) was the last NASA mission (in collaboration with Orbital Sciences Corporation) singularly dedicated to monitoring ocean color. The MODIS (Moderate Resolution Imaging Spectroradiometer) instruments on board Aqua and Terra and the VIIRS (Visible Infrared Imaging Radiometer Suite) instrument onboard Suomi-NPP are also capable of making ocean color measurements, but also were designed to support other Earth Science disciplines beyond just ocean color. The image below is from SeaWiFS and

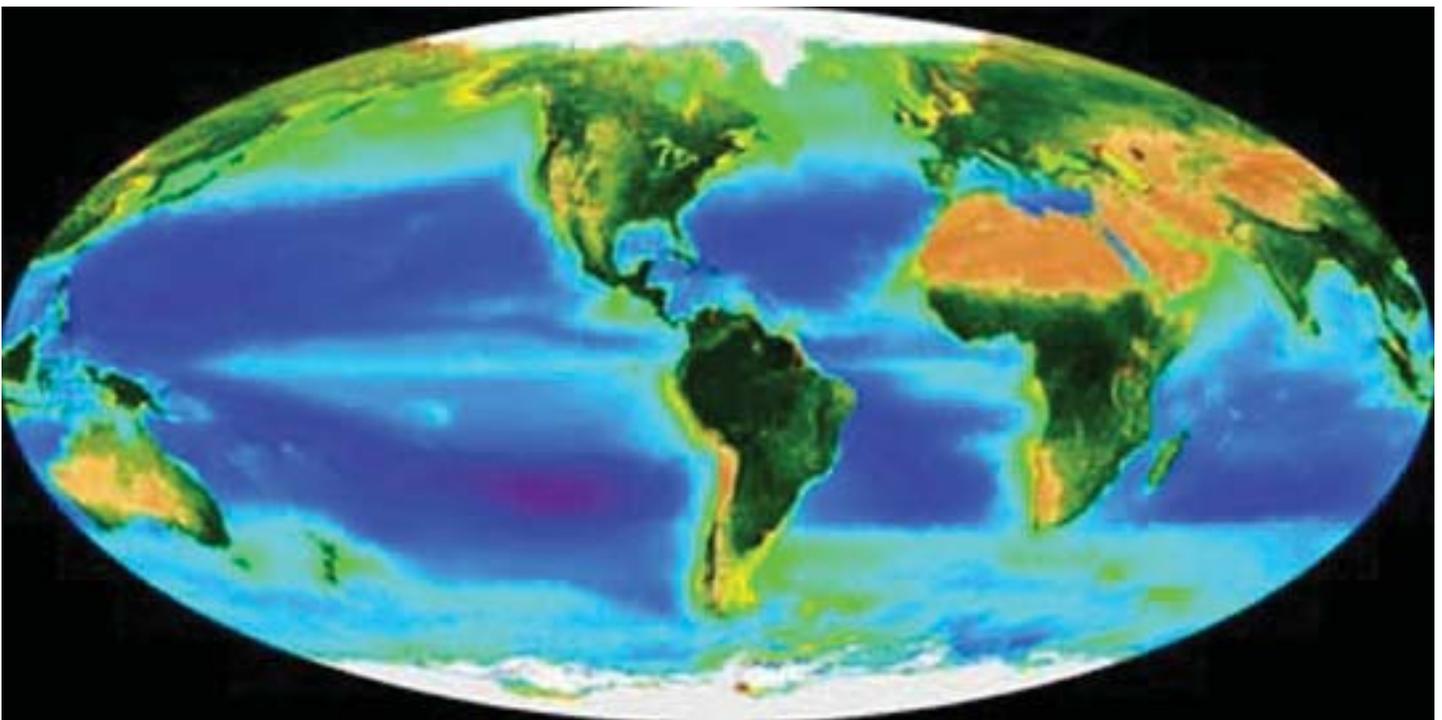
depicts the ocean's long-term average phytoplankton chlorophyll concentration acquired between September 1997 and August 2000. In the oceans, red, yellow, and green pixels show dense phytoplankton blooms. These are the regions of the ocean that are the most productive over time. The blues and purple regions show where there is very little of the microscopic marine plants.

**Overview**

PACE is one of NASA's climate continuity missions planned for launch in the 2022 to 2023 timeframe. The PACE mission will make global ocean color measurements to provide extended data records on ocean ecology and global biogeochemistry (e.g., carbon cycle), along with polarimetry measurements to provide extended data records on clouds and aerosols. Understanding the impacts and feedbacks of the Earth system to the climate is critically important to NASA and the science community.

The PACE mission is composed of a single satellite that will employ an Ocean Color Instrument (OCI) and a polarimeter. After many years of pre-formulation, the mission was directed to Goddard in December 2014. NASA Headquarters' guidance established that the OCI, the primary instrument, would be built at GSFC and it promises to bring new and exciting work to the Goddard team. While the OCI name implies its function, the instrument is also used to study important aspects of

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***SeaWiFS image depicting the ocean's long-term average phytoplankton chlorophyll concentration acquired between September 1997 and August 2000***

***(PACE continued from page 6)***

atmospheric science. The polarimeter instrument's function is to monitor the atmosphere and the data will be used to help understand and resolve/quantify the role of aerosols and clouds in the physical climate. NASA Headquarters has directed that the polarimeter be either provided by the Jet Propulsion Laboratory (JPL) or procured through industry or via contribution by a partner. The spacecraft development may be procured through industry, developed at Goddard, or contributed by a partner.

**PACE Science**

PACE provides a strategic climate continuity mission that will collect many global measurements essential for understanding marine and terrestrial biology, biogeochemistry, ecology, and cloud and aerosol dynamics. It will extend key NASA data records that are in danger of becoming discontinuous since the SeaWiFS era ended in 2010 and both MODIS instruments far exceed their mission lifetimes. The global ocean color measurements are essential for understanding ocean ecology and the global carbon cycle and how it affects and is affected by climate change. A key step toward helping scientists understand how the Earth has responded to its changing climate over time—and how it may respond in the future—is through the establishment of these high-quality, long-term, global time series of various geophysical parameters. Given the nature of the phenomena and the timescales needed to distinguish trends, such measurements will require combining data from several missions. These climate-quality time series are called climate data records (CDRs), and are being generated for a variety of geophysical parameters, including ocean color.

The PACE data will extend the high quality observations on ocean ecology, biogeochemical cycling, and ocean productivity begun by NASA in the late 1990s with the SeaWiFS and MODIS instruments. The polarimeter instrument will extend the data records on aerosols and clouds using an approach begun by the French PARASOL (Polarization & Anisotropy of Reflectances for Atmospheric Sciences coupled with Observations from a Lidar) mission, as well as multi-spectral and multi-angle measurements made by NASA's MODIS and MISR (Multi-angle Imaging Spectro-Radiometer) instruments on NASA's EOS platforms (MODIS on Terra and Aqua, MISR on Aqua).

The dissolved and suspended organic and inorganic material within the upper layer of ocean water provide the basis for ocean color science. Many particulate and dissolved constituents of the near-surface water column absorb and scatter light differently in the ultraviolet (UV) and visible (VIS) regions of the electromagnetic spectrum (these are the colors that humans see). At its most

fundamental level, ocean color science is about relating the spectral variations in the UV-VIS marine light field (that is, differences in the ocean's color) to the concentrations of the various constituents residing in the sunlit, near-surface water column.

**Phytoplankton comprise approximately 1% of the Earth's plant life but they produce more than 50% of the oxygen we breathe**

One of the most important components found in ocean water are phytoplankton. These microscopic marine algae form the base of the marine food chain and produce over half of the oxygen we breathe. Phytoplankton also play an important role in converting inorganic carbon in carbon dioxide (CO<sub>2</sub>) to organic compounds, fueling global ocean ecosystems and driving the oceanic biogeochemical cycles through grazing (i.e., they provide a food source for zooplankton) and through their degradation products and the microbial loop (where bacteria reintroduce Dissolved Organic Carbon (DOC) and nutrients to the water, effectively recycling both back into the food web). Phytoplankton are therefore a critical part of the ocean's biological carbon pump, whereby atmospheric CO<sub>2</sub> gets sequestered to the deep ocean, and are responsible for roughly half of Earth's net primary production—the difference between the rate of plant production of useful chemical energy and the rate of their use of that energy in respiration. However, phytoplankton growth is highly sensitive to variations in ocean and atmospheric physical properties, such as upper-ocean stratification and light availability within this mixed layer. Phytoplankton also vary greatly in their size, function, response to ecosystem changes or stresses, and nutritional value for species higher in the food web. Hence, measurements of phytoplankton community composition and their distributions remain essential for understanding global carbon cycles and how living marine resources are responding to Earth's changing climate. All these inorganic and organic substances combine to shape the actual optical properties of the ocean, which ultimately give it its color.

While PACE is predominantly an "ocean color" mission, it will also have secondary objectives and a secondary instrument. An additional overarching goal for the mission is to help determine the roles of the ocean and atmosphere

*(Continued on page 8)*

***(PACE continued from page 7)***

in global biogeochemical cycling and how perturbations to Earth's energy balance both affect and are affected by rising atmospheric CO<sub>2</sub> levels and Earth's changing climate. The PACE mission will contribute to the continuation of atmospheric CDRs as well as those for ocean color. The OCI will allow continuation of "heritage" aerosol measurements made using the MODIS onboard Terra and Aqua and the Ozone Monitoring Instrument (OMI) onboard Aura. It will also provide additional characterization of aerosol particles because its spectral range will include shortwave infrared wavelengths. This will enable continuation of MODIS-like and OMI-like characterization of aerosol properties, MODIS-like measurements of water vapor, and MODIS-like retrievals of cloud optical properties. These are the key atmospheric components affecting our ability to predict climate change as they contribute the largest uncertainties in our understanding of climate forcings and cloud feedbacks in an increasingly warmer planet. The interactions between these species are key to such understanding, as aerosols, water vapor, and clouds remain intertwined within the hydrologic cycle because most cloud droplets are seeded by small aerosol particles called cloud condensation nuclei. Changes in the amount, type, and distribution of aerosols, therefore, can alter the micro- and macro-physical characteristics of clouds. Furthermore, natural and anthropogenic changes to the aerosol system may affect clouds and precipitation, which can alter where, when, and how much precipitation may fall.

**Defining the PACE Mission and Satellite**

The PACE Satellite is planned for a launch in the mid 2022 to 2023 timeframe. The Goddard project office is responsible for the satellite development, launch and operations. The mission is planned for launch into a sun-synchronous polar orbit with an inclination of 97 degrees and a near 12pm local ascending node crossing time. The spacecraft bus will host the OCI and the polarimeter instrument. The budget for the PACE mission has been set at \$805M where \$705M will be used for the development of the satellite, launch vehicle, mission operations control center, and operations. The remaining \$100M will be managed by Headquarters and will be used for the science team, the science data systems, science team calibration and validation effort and the operations support for the science team.

NASA Headquarters has directed the mission development be guided by the design-to-cost (DTC) process. At the heart of the DTC process are the mission studies, performed across all the mission elements. The mission studies will be used to define the appropriate approach while maximizing the science capability and at a high cost confidence. Mission requirements are also crucial to the

DTC process as they were not established at the onset of the mission concept development. The baseline mission requirements are a product of trade study analyses and will be defined by the project office as part of the overall DTC process. In short, all elements of the mission, other than the cost, are in the DTC trade space. The project recommendations will be presented at the Mission Concept Review, currently planned for January 2016.

The PACE project is performing trades for the OCI, the polarimeter, the spacecraft, the launch vehicle, mission operations, and the mission operations control center. The OCI team is evaluating three different instrument design concepts with multiple variants on each instrument concept. The polarimeter team is also looking at three different basic designs but also looking at multiple instrument providers (JPL, foreign contribution, and industry). The spacecraft team is looking at two in-house concepts and industry concepts. The launch vehicle is the wild card in the DTC process and has the largest opportunity to have an effect (good or bad) on the mission capability. The project is also investigating alternative launch vehicle options outside of the Launch Services Program at KSC. These include launch service providers that provide co-manifest capability, spacecraft provider delivery in-orbit (DIO) and foreign contributions.

The project will use the data from all these studies to guide the most cost-effective and low-risk path that maximizes the mission science capability.

**Summary**

The PACE mission promises to provide the data that will mark significant advances in ocean biology and atmosphere science. The mission will provide a key step toward understanding how the Earth has responded to its changing climate and how it may respond in the future. The Goddard team is ready to address the challenges of the design-to-cost mission and is eager to deliver a mission that meets the science needs while staying within the mission budget.

***Andre Dress / Code 420***

***PACE Project Manager***

***Jeremy Werdell / Code 616***

***PACE Project Scientist***

***(Eaton continued from page 3)*****Life at Goddard**

Herb initially came to Goddard in 1991 and worked here for over a year and a half as an employee of Idea Aerospace, of Greenbelt, Maryland. He left in 1992 and returned to Goddard in 1995 as an employee of a company called Interstel, which was subsequently purchased by Swales Aerospace. He has been supplying graphic services to the Goddard community ever since. Herb came onboard the PAAC contract, as an ASRC employee in 2009.

In 1995, Herb began supporting the Shuttle Small Payloads Project (SSPP), Hitchhiker, the Get-Away Special, and Spartan Project offices. The primary focus at that time was for print and publication design, team-building materials (decals, lapel pins, patches), and public outreach media. This included brochures, annual reports, posters, presentation graphics, and still images for television broadcast.

In 1997, for the SSPP customers, Herb designed the emblem for the Technology Applications and Science 01 (TAS-01) mission that flew on STS-85. The emblem design featured the Warner Bros. "Tasmanian Devil" character. This was the first and only time NASA officially worked with an international media company, like Warner Bros., to produce an emblem design for public outreach and for use in the Shuttle cargo bay. Herb's design for TAS-01 is at the National Air and Space Museum and at the Warner Bros. corporate museum.

The popularity of the TAS-01 emblem led to Herb being asked to design the emblem for the first Argentinean satellite, Scientific Applications Satellite-S (SAC-A), in 1998, by the Argentinean space agency, CONAE. He was deeply honored that CONAE selected him to design a graphic representing such a pivotal event in the history of their country.

While serving SSPP, Herb provided graphic support for more than 30 experiment, education, and technology missions that flew on various Space Shuttles. He would go on to do design work for the Guidance Navigation and Control Center, the Orbital Projects Office, Hubble Space Telescope (HST), the Express Logistics Carrier Office, ICESat, EOS Aqua, and James Webb Space Telescope (JWST). The current logo for JWST is Herb's design.

Herb's design work is available to all PAAC customers, but today he primarily supports the Satellite Servicing Capabilities Office (SSCO) and the Astrophysics Projects Division (APD), here at Goddard. The SSCO grew out of the team responsible for the HST servicing missions that Herb began supporting in 1998, and Herb grew along with them. SSCO has a robust media program including virtual modeling, video, and animations for presentations,

workshops, television broadcast, web-based public outreach, and International Space Station crew training, in addition to traditional products. APD primarily calls on Herb for publication design. Herb has designed their Program Annual Technology Reports for the past 5 years.

Herb's graphics work for Goddard has been displayed at several Smithsonian museums, and has been used at KSC and JSC in addition to Goddard. Herb's video and animation work has been broadcast on all of the major U.S. networks, as well as on NASA Television.

**Life Away from Goddard**

Herb and his wife, Lisa, recently added a baby boy to their family, they've named Caleb. Caring for him has joyfully held most of Herb's attention away from the workplace. However, Herb is still a lifelong comic book collector, science fiction movie "Fanboy," and video gamer. He draws and builds virtual models as a creative outlet. Herb enjoys time with family and friends. Herb, Lisa, and Caleb share their home with two sibling rescued cats.

***(Betz continued from page 3)***

World record for Largest Astronomy Lesson at SXSW, and has booked scientists on many TV appearances. She enjoys promoting NASA's projects and has been featured in several videos including a Google Hangout with Buzz Aldrin, Discovery Education's Space Day 2015, and moderated a panel on Operation IceBridge featuring NASA's Chief Scientist Ellen Stofan and the Ambassador to Chile. Laura helps support the science communications team working to revamp science communication across the agency.



***Laura with one of the JWST primary mirror segments***

**Life Outside Goddard**

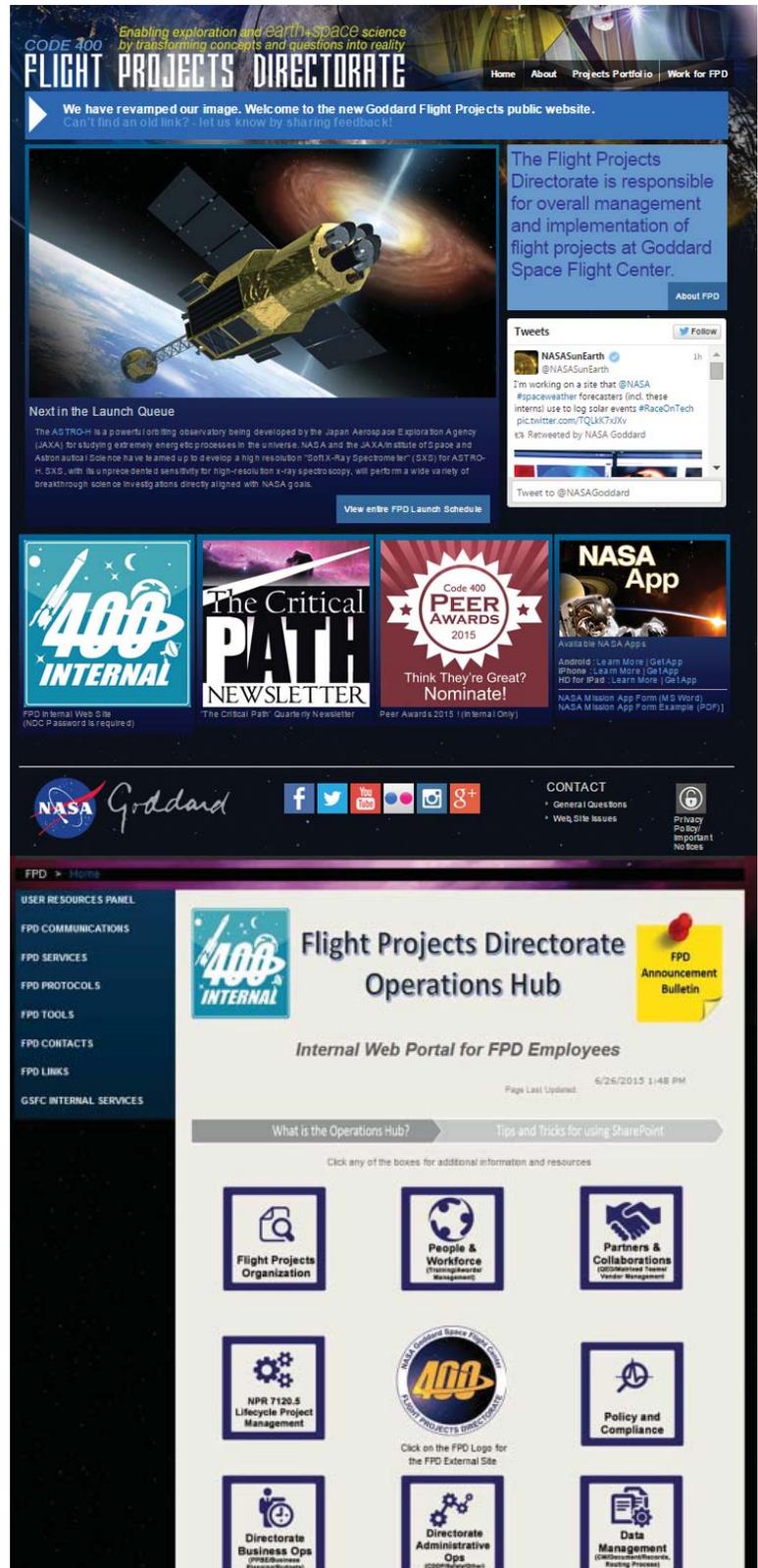
Laura enjoys travelling, trying new things, and swimming. She is a member of the Goddard Sailing Club and the Goddard Photography Club. One of her most breathtaking experiences this summer was attending a star party at the Grand Canyon.

# Revamping the Flight Projects Directorate's Web Communications

For several years, the [fpd.gsfc.nasa.gov](http://fpd.gsfc.nasa.gov) website served conflicting purposes: to communicate to the public what the organization does at NASA Goddard and to provide the internal team with the resources they need to continue to do good work. This can be tricky as certain information must be protected, yet we want our customers to feel a part of the team as stakeholders, to stay informed, and be knowledgeable of our latest work. In addition, we want to provide the needed tools and resources to our programs, projects, and employees to enable and assist them in performing the day-to-day tasks. Furthermore, maintenance of the site is critical; keeping data integrated and synchronized is vital to maintaining the accuracy and validity of the content and continuing to communicate current and consistent information.

The redesign of the external, public-facing website ([fpd.gsfc.nasa.gov](http://fpd.gsfc.nasa.gov)) was facilitated by the development and publication of a complementary platform—the Flight Projects Directorate (FPD) Operations Hub (SharePoint). The FPD Operations Hub is the internal component of the overall FPD web architecture, and enables daily activities by providing a toolkit of resources, links, and site pages to the directorate. The hub integrates FPD, Goddard, and NASA-wide sites under an organized architecture to map and link FPD resources, coordinate information, and reduce duplication. Installing a single source search within this architecture provides the capability to run a 'find' on all online content that is integrated under the platform—finding related documents, tools, and websites. The use of Microsoft's SharePoint software enables data accuracy and configuration control of all information, providing the current version of content to the user. Security features help define user groups and controls to manage access and use. The FPD Operations Hub is built and managed for the employees. It is the curating team's priority to accept user feedback and encourage new ideas for adding features, expanding content, and continuously improving the platform.

Separating the internal content onto the FPD Operations Hub allows the FPD external website to become more focused on areas of interest to the public. The external site communicates our mission to our partners, future employees, and the general public, to stimulate interest and support from the community. Check out the sites and please keep sending in your ideas and feedback, we appreciate it!



(Continued on page 11)

(FPD Hub continued from page 10)



Note: the FPD Operations Hub is for NASA employees only. Users must be on the NASA network or virtually connected to the network via VPN and must have a NASA domain credential (NDC) username and password to access the hub. Several of the site features do have controlled access limiting access to FPD only or FPD leadership only.

FPD public site: [fpd.gsfc.nasa.gov](http://fpd.gsfc.nasa.gov)

FPD Operations Hub (internal): <https://fpdspi.gsfc.nasa.gov/sites/400/400fpdoffice/FPD/SitePages/Home.aspx>

**Jennifer Brill, Code 400**  
FPD Web Developer

**Celina Hanewich, Code 400**  
Flight Projects Directorate Secretary

**Jenifer Poston, Code 400**  
FPD POC for SharePoint

**Val Lunz, Code 400**  
FPD Special Assistant/FPD Web Curator

**Linda Wunderlick, Code 400**  
Program Planning & Support Analyst

## Quotes to Think About

*“Motivation is a fire from within. If someone else tries to light that fire under you, chances are it will burn very briefly.”*

— **Stephen R. Covey**

*“Nothing will work unless you do.”*

— **Maya Angelou**

*“I’m really hopeful about the future of space exploration and human spaceflight. Civilization as we know it has been defined by exploration. You know, we need to go off and find out what’s around the next corner and what’s just beyond what we already know. It’s part of our being; it’s part of our moral fiber to go off and explore.”*

— **Alan G. Poindexter**

*“Far and away the best prize that life has to offer is the chance to work hard at work worth doing.”*

— **Theodore Roosevelt**

*“If you smile when no one else is around, you really mean it.”*

— **Andy Rooney**

*“The best way to find yourself is to lose yourself in the service of others.”*

— **Mahatma Gandhi**

*“People who think they know everything are a great annoyance to those of us who do.”*

— **Isaac Asimov**

*“When you’re curious, you find lots of interesting things to do.”*

— **Walt Disney**

*“It does not matter how slowly you go so long as you do not stop.”*

— **Confucius**



# Volunteering for CASA

Statistics reveal that every day in this country an estimated 1,900 children become victims of abuse or neglect. Tragically, of these, four children will die as a result of that abuse. Every day ... 365 days a year.

Court Appointed Special Advocates (CASA) for Children is a network of more than 950 community-based programs in 49 states that recruit, train, and support citizen volunteers to advocate for the best interest of abused and neglected children in courtrooms and communities. To make sure these children do not get lost in the overburdened legal and social service system, or worse, languish in inappropriate group or foster homes, CASA volunteer “advocates” are empowered directly by the courts to provide judges with the critical information they need to ensure that the assigned child’s rights and needs are being protected and met. Focused advocate training is designed to provide these CASA volunteers with the skills, knowledge, and attitudes needed to be successful in this crucial role. It is important work that requires the commitment of time, energy and heart since CASA volunteers stay with each case until it is closed and the child or sibling group is placed in a safe, permanent home. Thanks to this program, their CASA volunteer is the only constant adult presence in the lives for many of these children.

As a CASA volunteer, I anticipated that one caring person could make an enormous difference in the life of a foster child. What I never expected was that a foster child would make such a huge and positive difference in my own.

When I set out to become a CASA volunteer for Anne Arundel County, I was very apprehensive. Having been raised by parents whose love was never in question and then raising two children in a loving stable home, I feared I didn’t have the firsthand experience that I thought would be beneficial for a foster child to benefit under this program. Yet, I was still compelled to try.

Having no direct experience with drug or alcohol abuse and never being neglected as a child, I questioned how I could offer experience in a different area of abuse but understood that many of the children in foster care were there because of parental substance abuse or neglect. I was definitely out of my comfort zone but I decided to go through the training to find out if it was really something I could commit to in the hopes that it would give me the insight I needed to move forward with volunteering as a CASA. Needless to say, my eyes became wide open to the challenges our communities face every day with regard to foster care. I had no idea how many children were in fos-

ter care in just my county alone. In 2013, there were a total of 231 children who were in foster care in Anne Arundel County. Of these 231 children, CASA volunteers served only 63 percent of them. After the first night of class I was committed. I didn’t care what I had to do, I just knew I needed to do my part in helping even just one child have a better life. Five days after I completed the training, I was assigned my first case; a young girl who was removed from her family. There were no other family members who wanted her or who could appropriately care for her. When she was assigned to me she was 11 years old and had been in the foster care system for 1 year, was already in her second foster home and her fifth elementary school.

The first time we met, she looked at me as if I held all the answers to her troubled world. I felt a huge responsibility to her and knew I would never be able to walk away from this hopeful child who innocently put her trust in me...a complete stranger. During the next year and a half, we spent a couple of hours almost every Saturday together. I was the person allowed to see her vulnerable side, her biggest fears, and her most painful heartbreaks. I watched her have hope for her parents to change, and was there to catch her when they consistently let her down. I watched her have a child’s faith that her parents would adhere to the court’s requirements, only to be repeatedly disappointed.

Life as a CASA volunteer is never boring, nor is it full of “down” time. During the 18 months, it was my job to work with her social worker, her school, her biological parents, her foster parents (both sets, as she transitioned to her third foster home during this time), her counselor and the courts, in hopes to move her towards an adoption. I took her to spend time with her biological family, to group foster events, and to attend school meetings. During this relationship, I spent as many hours as I could one on one with her in order to get to know her and her dreams, understand her strengths and weaknesses, as well as gain a fuller understanding of the psychological trauma she had experienced in her biological home and at least one foster home. The rewards were unbounded, however. I watched this beautiful child go from a very sad, emotional young girl to a happy, bright-eyed teenager, ready to conquer the world. She has since turned 13 and was adopted by her third foster family in April of this year. I was so happy to see her placed in a wonderful home where she would be loved unconditionally and appreciated for all of her uniqueness, but at the same time this was closing a chapter for the two of us. Alas, I confess that it was bittersweet.

While my story is a “success” story, it is reasonable to ask about the program overall. Independent research suggests

*(Continued on page 13)*

***(CASA continued from page 12)***

that children with a CASA volunteer are substantially less likely to spend time in long-term foster care and less likely to re-enter care. The primary responsibility is to serve as the “eyes and ears” of the court, getting to know the child while gathering information from the child’s family, foster parents, teachers, counselors, etc., and making recommendations to help the judge decide what is best for the child. CASA volunteers come from all walks of life, yet share a common commitment to improving a child’s life. To accomplish this, CASA educates and empowers its volunteers to be that one singular adult that a child can depend on...an adult that a vulnerable child knows has their best interest at heart. The foster care system is replete with salaried people who make decisions on behalf of the child: lawyers for each parent, lawyers representing the social system, lawyers for each child, judges, therapists, social workers, and specialists. By contrast, CASA is a volunteer and, as a result, it doesn’t take the older children long to figure out that the one person not being paid is the one who advocates the hardest for them.

What does it take to be a CASA volunteer? An average of about 15 hours a month is required; of course this can

vary, depending on each case. A lot depends on the age of the child or sibling group and the nature of the circumstances which lead to removal from the home. For myself, CASA has been a life-changing experience. I also have the smile of knowing that my efforts went towards saving a child and thereby making our community a better place in the future.

As for my CASA child, at her request and the generosity of her new family, I am honored to be in the role of her BFF and referred to as “Aunt Cristy.”

I have taken the summer off to regroup and recharge but have no doubt that I will take on a new case in the fall. More information on becoming a CASA volunteer can be obtained by going to [www.CASAforChildren.org](http://www.CASAforChildren.org) and searching by zip code. Feel free to contact me as well if you would like a more personal view point.

***Cristy Wilson / Code 453***

***Financial Manager, Near Earth Network***

## Volunteering at Tanzania’s Best Hope Learning Center



Tanjira Ahmed Larmie, a senior resource analyst with the Satellite Servicing Capabilities Office, spent 2 weeks teaching children math, English, reading, and art at the Best Hope Learning Center in Moshi Village, Tanzania.

Hear Tanjira’s story in her own words at:

[https://www.youtube.com/watch?v=MCvH-Ze5VHI&list=PLq3G8Mg\\_U60cpFqmTJhrw0CYEtrLytOpW&index=2](https://www.youtube.com/watch?v=MCvH-Ze5VHI&list=PLq3G8Mg_U60cpFqmTJhrw0CYEtrLytOpW&index=2)

# Knowledge Management Corner

## Infusing Lessons Learned throughout the Project Lifecycle

It's never too early or too late to infuse lessons learned in a project. Just as projects should collect lessons learned throughout the project lifecycle rather than wait for launch, a project should infuse lessons learned throughout the project lifecycle. This article will focus on opportunities for systematically infusing lessons learned: the kickoff meeting and lifecycle reviews.

### Kickoff Meeting and the Infusion of Lessons at the Onset of the Project

The project kickoff meetings are an opportunity for team members to get to know each other. There can be an important social interaction component. When team members do not know much about each other's areas of expertise, this is an opportunity for the team to talk about their past experience and in that context, highlight key lessons from projects on which they've previously worked. Team members are often selected for their past experience. Why not give that prior experience some exposure by asking team members to bring forth key lessons they think are particularly applicable to the mission they are now joining.

Kickoff meetings are also an opportunity for team members to get on the same page and for the project management team to set the tone in terms of communications and interactions. In that context, there are a number of ways to integrate valuable discussions of lessons learned in such meetings.

Many lessons from previous projects are embedded in the early design and formulation of a mission. Heritage is very important precisely because it has so many lessons from prior experience embedded in it.

Just as projects that have just launched will tend to focus their attention on lessons from the immediate past and therefore related to preparations for launch, projects that are starting up will focus their attention on lessons from other projects that are of immediate use to them in the startup phase and pay little attention to launch preparation lessons. This is perfectly natural and even justified as long as there are processes in place to make lessons learned activities (infusion and collection) an iterative process within the project life cycle.

How can lessons learned discussions be embedded in a kickoff meeting?

### Maximize Value for the Time Invested

Are you worried that the kickoff meeting agenda is already packed and addressing lessons learned could take too much time? You do not necessarily have to spend a

huge amount of time during the kickoff meeting itself to discuss lessons learned. Prioritize based on the urgency of specific issues. For example, you do not need to spend much time on lessons related to launch preparations right now and you may need to spend some time discussing procurement lessons and/or staffing. You may decide that most of the work of identifying relevant lessons and recommended actions should be done in preparation for the kickoff meeting and presented at the kickoff meeting with limited discussion.

### Identify Areas of Interest

Thinking about your project, what are some of the areas that you already know to be more challenging? Are you working with a new partner organization? Are you developing an in-house instrument? If you don't have anything specific in mind, you can always browse the Knowledge Maps for inspiration. Another good source of inspiration for lessons is the Cross-cutting Risk Database, recently developed by the Flight Projects Directorate (FPD). Knowledge Maps represent the broad range of typical project management issues arising in the context of GSFC missions. The Cross-project Risk Database does the same from a risk perspective.

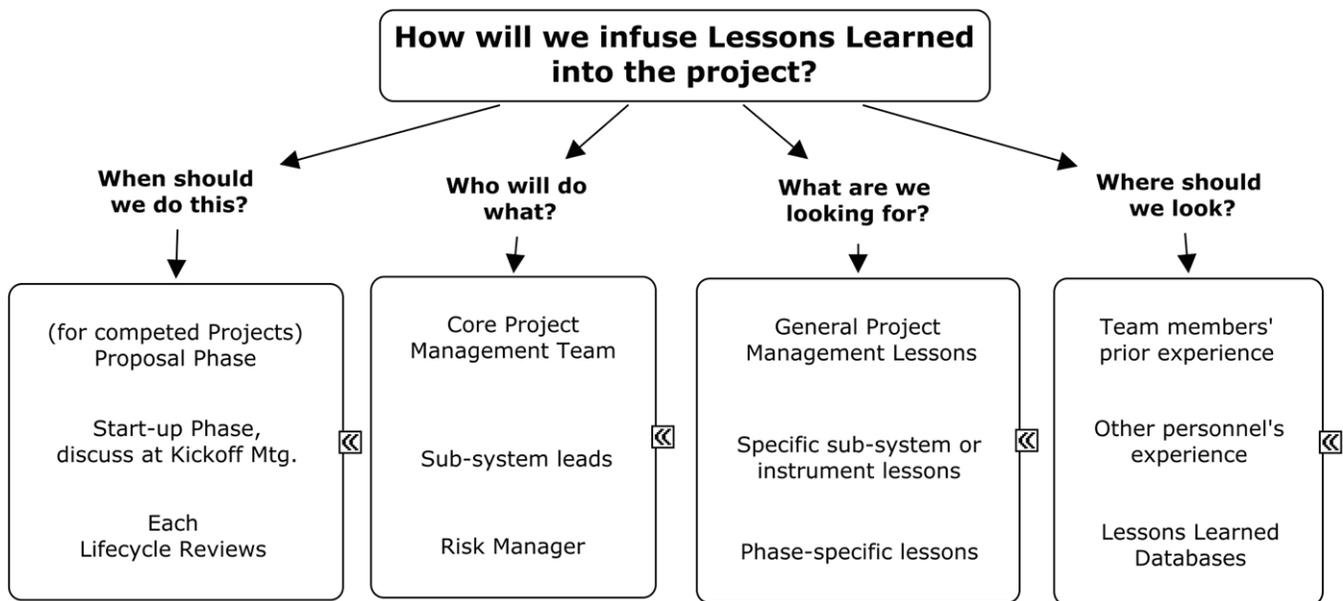
### Research Lessons

Identify relevant documents and resources, and map lessons to specific actions or recommendations.

- Look for lessons embedded in your team. As previously mentioned, you can take advantage of the kickoff meetings to expose critical lessons embedded in team members' experience.
- Identify individuals with relevant knowledge outside of the project. These individuals may act as key sources of information along the way even if they are not participating in the kickoff meeting.
- Identify key resources: These would include not only the lessons learned databases (see text box), but also documents kept within the engineering branches and project libraries.
- Map lessons to actions: Not all lessons are "actionable." This does not make them less valuable. There are lessons learned that are more about maintaining a certain awareness of an issue than about taking a specific action. In some cases, the "action" may be to write down a risk and add it to the risk database so that it can be monitored and possibly acted upon at a later date.
- Embed lessons and corresponding actions in the relevant planning documents.

*(Continued on page 15)*

*(Lessons continued from page 14)*



#### Select a Format for the Session(s)

- Determine which lessons (or broader topics) require a conversation: Some lessons will lend themselves to a clear recommendation. A lesson by itself may not need much discussion yet the recommended action may need a discussion, especially if it requires the application of resources.
- Determine who needs to be involved: If you want to have a discussion around team dynamics and communications, then you probably to have that discussion with all the relevant parties in the room. For a discussion of lessons around a specific instrument or sub-system, a small splinter meeting might be more appropriate.
- Determine the most suitable format for the session based on whether the kickoff meeting is meant as an opportunity to report on lessons learned or an opportunity to discuss lessons learned.
- Determine whether the discussion could benefit from the support of a facilitator and a note-taker. The FPD Knowledge Management Lead (Barbara Phillip) is available to support lessons learned activities.

**At a minimum, the kickoff meeting should include a discussion of how the project will handle lessons learned, including how the project will apply lessons from other projects, how the project will document its own lessons and how the project will share its lessons with others.** This discussion can serve as the starting point for the project's Lessons Learned Plan (per NPR 7120.5E). A template and guidelines for writing the Lessons Learned plan are available on the FPD Knowledge Exchange website or through Barbara Phillip (301) 286-4666.

#### Infusing Lessons Learned at Reviews

The Goddard Technical Standard (GSFC-STD-1001A), Criteria for Flight and Flight Support Systems Lifecycle Review, spells out lessons learned related criteria for each of the lifecycle reviews. The success criteria is similar for all reviews: "Lessons learned have been appropriately researched, adapted and implemented as appropriate."

The manner in which a project implements this infusion of lessons is flexible and up to the project management's discretion. The process for infusing lessons learned at regular intervals through the project lifecycle reviews is similar to that just described for the kickoff meeting. The key difference is that as the project approaches a review, it will also have an opportunity to document its own lessons learned and act upon them as needed.

#### Assign Roles and Responsibilities

- Request that the risk manager use the lessons learned database as a source of inspiration for the initial identification of risks ... in addition to the cross-project risk database.
- Assign specific individuals (sub-system leads for example) to research lessons learned in their area of expertise and to report on their findings.
- Assign the Deputy Project Manager to review all the applicable lessons from other projects.

#### Research Lessons and Identify Recommended Actions

- Lessons from other projects.
- Lessons from the project itself. Assuming the project is collecting lessons learned at each key phase of the project lifecycle, there are lessons that have immediate

*(Continued on page 17)*

# 2015 Agency Honor Awards Code 400 Awardees

The Agency Honor Awards Ceremony was held on July 8, 2015. Noted below are awards to Code 400.

## OUTSTANDING LEADERSHIP MEDAL

### Bryan Fafaul

In recognition of your outstanding leadership, organizational skills, project planning, execution, and accomplishments of the Joint Polar Satellite System (JPSS) flight project.

### Del Jenstrom

For your outstanding leadership as the Sustainable Land Imaging (SLI) Architecture Study Team Manager that harnessed resources from across the Government to define the next generation.

### Robert Melis

For your extraordinary commitment and leadership in the development of the Geostationary Operational Environmental Satellite R-Series (GOES-R) instruments and spacecraft.

### Steve Shinn

For extraordinary leadership abilities, sharing a vision that imbues passion and encourages high-performing collaborations that produce transformational results.

## OUTSTANDING PUBLIC LEADERSHIP MEDAL

### Scott Lambros

For over a decade of international, world-class leadership for the James Webb Space Telescope Integrated Science Instrument Module project

## EXCEPTIONAL ACHIEVEMENT MEDAL

### Jeanine Murphy-Morris

In recognition of your unwavering dedication and outstanding achievements that led to the success of the Landsat Data Continuity Mission (LDCM).

### Jean Plants

For exceptional dedication to the success of the Agency's planetary Mars Atmosphere and Volatile Evolution (MAVEN) mission from design through launch delivering the mission under budget and on time.

## EXCEPTIONAL SERVICE MEDAL

### Paul Richards

For exemplary leadership and performance which have directly contributed to the successful development and integration of the first Geostationary Operational Environmental Satellite (GOES-R) observatory.

### Matt Ritsko

For your exceptional service and impressive performance innovating and contributing expert analysis to further NASA's Mission Portfolio.

## EXCEPTIONAL ENGINEERING ACHIEVEMENT MEDAL

### Thomas Jasin/Aerospace Corporation

For distinguished multi-disciplinary engineering contributions to the development of NASA missions.

### Gary Won/SGT Inc.

For exceptional contributions in electrical systems engineering for the Magnetospheric Multiscale (MMS) mission.

## EXCEPTIONAL TECHNOLOGY ACHIEVEMENT MEDAL

### Joseph Pitman/Genesis Engineering Solutions

For two decades of unparalleled engineering expertise and guidance to advance NASA's science mission goals through innovative and groundbreaking technology.

## EXCEPTIONAL PUBLIC ACHIEVEMENT MEDAL

### Thomas Hanyok/Jackson & Tull, Inc.

For unmatched dedication in building a Reconfigurable Operational Spacecraft for Science and Exploration (ROSE) mockup and an offload structure to support development for future potential servicing missions.

### Torchia Kelly/ATK Space Systems, Inc.

For outstanding mechanical engineering support and leadership on the Low Earth Orbit (LEO) servicing mission payload design.

*(Continued on page 17)*

***(Honor Awards continued from page 16)*****Mark Lankton/University of Colorado**

For significant achievement delivering Mars Atmosphere and Volatile Evolution (MAVEN)'s Imaging Ultraviolet Spectrometer, providing exciting new science at Mars for NASA and the world.

**Bill Paradis/InuTeq, LLC**

For your dedication and energy to deliver superior products that promote visibility and communications to ensure mission success.

**SILVER ACHIEVEMENT MEDAL (Team Award)****James Webb Space Telescope (JWST) Technical Photography Team**

For spectacular vision that enables the world to experience the assembly and integration of one of NASA's premier observatories through the art of astonishing photography.

**GROUP ACHIEVEMENT AWARD****Alaska Ground Station (AGS) Early Operations Team**

For the successful transition of the Alaska Ground Station AS-3 system to operations ahead of schedule to support new and existing NASA missions.

**Business Change Initiative Team**

For outstanding contributions to program planning and control, and for innovating an approach that consistently applies best practices to deliver superior NASA mission performance.

**Deep Space Climate Observatory (DSCOVR) Integration Team**

For overcoming great adversity with a high degree of professionalism and outstanding depth of expertise in preparing DSCOVR for flight after a decade of storage.

**Integrated Science Instrument Module (ISIM) Electronics Compartment Team**

For the innovative design and development of the ISIM Electronics Compartment (IEC) for the James Webb Space Telescope.

**NASA Sustainable Land Imaging (SLI) Architecture Team**

For outstanding contributions to defining the future of land imaging missions for our Nation.

**Space Network Communications for Exploration Flight Test One (EFT-1) Team**

For successfully providing communications and tracking for the Agency's key EFT-1 Mission.

**White Sands Complex (WSC) Switchgear Replacement Team**

For exceptional engineering analysis and support in preparation for the replacement of the switchgear systems at the White Sands Complex.

**Wind Operations Team**

For exceptional ingenuity and personal sacrifice in the recovery of the Wind spacecraft.

***(Lessons continued from page 15)***

impacts on the project itself and should be infused in the next phase of the project.

**Share/Discuss/Validate Lessons and Recommended Actions**

- Consolidate lessons learned to present at the review (perhaps just three to five top lessons) or to have as background document to satisfy the pertinent success criteria.

**Barbara Phillip, Code 400**

**Knowledge Management Project Manager**

**Lessons Learned Databases**

[Critical Knowledge Gateway](#)

[NASA Lessons Learned Information System \(LLIS\) \(Public\)](#)

[NASA Lessons Learned Information System \(LLIS\) \(NASA Only\)](#)

[Knowledge-Based Risks \(KBR Library\)](#)

[Goddard Knowledge Exchange \(GKE\) \(Goddard Only\)](#)

[FPD Knowledge Exchange \(Goddard Only\)](#)

[FPD Knowledge Maps \(Goddard Only\)](#)

[Case Study Repository \(Public\)](#)

## Social News



*Josh and Sarah Milam*



*Hunter Ryan Haskell*

- Joshua B. Milam, son of Bruce Milam (Code 455) and Laura Milam-Hannin (Code 490) was married to Sarah R. Burkey on June 20. The newlyweds spent a week on Maui in Hawaii. Josh is a senior in Aerospace and Mechanical engineering at West Virginia University, Certified Aircraft Mechanic and Flight Instructor. Sarah is a PhD student in Psychology and Counseling at West Virginia University who just recently completed a MS in Psychology and Counseling at the University of Maryland.
- Congratulations to Barbara Haskell (Code 424), who became a grandmother on June 20, 2015, when her son Daniel, and his wife, Nancy had a baby boy, Hunter Ryan. He was 8 lbs, 9 oz, and 19.5 inches long.
- Best wishes to Matt Ritsko (Code 460) and Tara Dulaney, who were engaged on July 17, 2015.
- Shama Khan and her husband, Muhammad Najaf Rauf, of Bowie, Maryland are proud new parents of a baby boy. Amir Rauf was born on Tuesday, May 19, 2015, at 6:09 p.m. at Anne Arundel Medical Center. He weighed 6 lbs, 1 oz, and measured 18.5 inches long.

# Knowledge Sharing Workshop

## Normalization of Deviance

The Fourth Goddard Knowledge Sharing Workshop on Organizational Silence will be held:

August 13, 2015 - Building 3 Auditorium – 1-5 pm

SATERN: To earn credit hours, you must register through SATERN, and sign-in at the event.

Live Webcast Link: <http://events.mediasite.com/Mediasite/Play/2a0ed6469460425a8f0af23c343dce6e1d>

Sponsored by the GSFC Office of the Chief Knowledge Officer, GSFC Ombudsman Office, the NASA Safety Center, and the GSFC Office of Human Capital Management.

For past Organizational Silence Events see: <http://www.nasa.gov/goddard/ocko>

# Cultural Tidbit

**Did you know ...** that the Raksha Bandhan is a Hindu festival that typically falls in the month of August? The festival celebrates the love and duty between brothers and sisters. The festival is not limited to biological ties, but can extend to bonds of friendship outside of family members. A ceremonial thread or bracelet called a Rakhi, meaning “a bond of protection,” is given to the brother or brother-like friend to wear throughout the day as a symbol that the strong must protect others from all that is evil. Rakhis are often shared between close friends as individuals, political parties, businesses, and schools celebrate the day.

 Happy  
Raksha Bandhan

Do you have a cultural tidbit to share?  
Send it to the Code 400 Diversity Council

c/o **Matthew Ritsko** at: [matthew.w.ritsko@nasa.gov](mailto:matthew.w.ritsko@nasa.gov)  
and we'll include it in a future issue of The Critical Path.

## Dedication of Dr. Noel Hinners Auditorium



Many readers will remember Dr. Noel Hinners, the fifth director of Goddard from 1982 to 1987. On June 24, 2015, the auditorium on the second floor of Building 8 was dedicated as the Dr. Noel Hinners Auditorium. The dedication event included the installation of an elaborate plaque in the auditorium lobby, and some of Dr. Hinners' family were in attendance. A retrospective look at some memorable moments from Dr. Hinners' career was presented.

Please click on the link below to view:

<https://www.youtube.com/watch?v=e2Pzj3frM58&feature=youtu.be>

Video link courtesy of:

**GSFC Office of Communications / Code 130**  
**Rebecca Roth**  
**Image Coordinator/Social Media Specialist**

# Comings and Goings

April 1, 2015 through June 30, 2015

## Comings:

- ❖ Donita Marshall (from 160) to 405/Resource Analysis Office, Technical Information Specialist
- ❖ Andrew E. Mitchell (from 586) to 423/ESDIS Project, Assistant Project Manager
- ❖ Marsha L. Gosselin (from 153.1) to 420/PACE Project, Financial Manager
- ❖ Phuc H. Nguyen (from 544) to 490.5/SMAP Project, Deputy Instrument Project Manager
- ❖ Carla E. Connor (from 201) to 460/Program, Senior Resources Analyst
- ❖ Matthew J. Strube (from 596) to 420/Landsat 9 Instrument Manager

## Goings:

- ❖ George W. Morrow (from 400) to 100/Office of the Director, Deputy Director
- ❖ Charisse G. Dorrell (from 452) to 150/Business Management Specialist
- ❖ Dena S. Butler (from 403) to 501/Engineering Facility Business Manager
- ❖ Philip M. Shimkaveg retired from 428/ESMO Project, Mission Business Manager
- ❖ Karen L. Moe retired from 407/ESTO, Technology Development Manager
- ❖ Eric Ianson (from 420) transfer to NASA HQs/Associate Director for Flight, Earth Science Division, Science Mission Directorate
- ❖ Justin T. King (from 490) to 153.1/Program Analyst
- ❖ Jonetta A. Johnson (from 420) detail to 580/Secretary
- ❖ George L. Jackson (from 420) transfer to Langley Research Center

## Reassignments/Realignments/Details within Code 400:

- ❖ David F. Mitchell to 400/Director of Flight Projects
- ❖ Del T. Jenstrom to 420/Landsat 9, Project Manager
- ❖ James T. Pontius to 496/GEDI Project, Instrument Project Manager
- ❖ Keith D. Walyus to 496/GEDI Project, Deputy Instrument Project Manager
- ❖ Edwin V. Griego (from 454) to 458/SGSS Project, Observatory Manager
- ❖ Sheila Coleman-Turner (from 444) detail to 474/JPSS Project, Resources Analyst
- ❖ Susan M. Sparacino (from 432) to 444/SSMO Project, Deputy Project Manager-Resources
- ❖ Jean O. Plants to 444/SSMO Project, Financial Manager
- ❖ Lorrie L. Eakin (from 454) to 420/Landsat 9 Deputy Project Manager-Resources
- ❖ Donald E. Whiteman, Jr. (from 410) FPDP Reassignment to 491/ATLAS Instrument Project, to serve as Deputy Instrument Project Manager
- ❖ Beth E. Weinstein (from 472) FPDP Reassignment to 420/PACE Project, to serve as Observatory Manager
- ❖ Michael D. Hill (from 493) to 490.5/SMAP Project, Deputy Instrument Project Manager
- ❖ Lateef Ajayi (from 472) FPDP Reassignment to 490/Instrument Projects Division, to serve as Financial Manager for the TIRS-2 Project
- ❖ Katie M. Bisci to 448/AFTA Project, Mission Business Manager
- ❖ Elizabeth D. Goelling to 470/JPSS Program Office, Senior Resources Analyst for Polar Follow-on Program

(Continued on page 21)

***(Reassignments continued from page 20)***

- ❖ Kevin N. Miller (from 440) detail to 401/Advanced Concepts & Formulation Office, Deputy Program Business Manager
- ❖ Jonathan H. White (from 403) to 470/JPSS Financial Manager
- ❖ Brett L. Weeks (from 408) to 454/TDRS Project, Deputy Project Manager-Resources
- ❖ Nylsevalis Ortiz Collazo (from 417) FPDP Reassignment to 410/GOES-R Program Office, Administrative Manager
- ❖ Vicki M. Dulski (from 416) to 420/Landsat 9 Project, Observatory Manager
- ❖ Lori S. Dellagatta (from 401) to 420/Earth Science Projects Division, Project Support Specialist
- ❖ Kathleen H. McIntyre (from 417) to 420/PACE Project, Deputy Project Manager
- ❖ Christine D. Steeley (from 153.2) to 448/AFTA Project, Deputy Project Manager-Resources
- ❖ Steven E. Pszcolka to 420/Landsat 9 Deputy Project Manager
- ❖ Matthew G. Mazur to 490/Instrument Projects Division, Deputy Project Manager-Resources
- ❖ Jacqueline F. Ferguson (from 428) detail to 444/SSMO Project, Resources Analyst
- ❖ Julie K. Hostetler (from 423) detail to 472/JPSS Flight Project, Resources Analyst
- ❖ Bert (Tom) Dixon (from 417) detail to 420/PACE Project, Instrument Manager
- ❖ William H. Sluder (from 461) to 420/Pre-Aerosol, Clouds, and ocean Ecosystem (PACE) Project
- ❖ Roberto M. Aleman (from 461) to 421/POES Project, Mission Manager
- ❖ Benjamin E. Hall (from 432) to 444/SSMO Project, Resources Analyst
- ❖ Taliha E. Brock (from 452) to 441/HST Operations Project, Sr. Resources Analyst
- ❖ Charlette Johnson (from 426) to 490/Instrument Projects Division, Sr. Resources Analyst
- ❖ Karilys Montanez to 460/Solar Probe Plus, Sr. Resources Analyst
- ❖ Lindsay L. Stroyen to 460/ICON, Sr. Resources Analyst
- ❖ Carol S. Grunsfeld (from 426) to 408/Satellite Servicing Capabilities Office, Deputy Project Manager-Resources
- ❖ Robert T. Caffrey (from 460) to 494/TIRS L9 Project, Deputy Instrument Project Manager
- ❖ Gerard J. Daelemans (from 440) to 401/Advanced Concepts & Formulation Office, Instrument Capture Project Manager

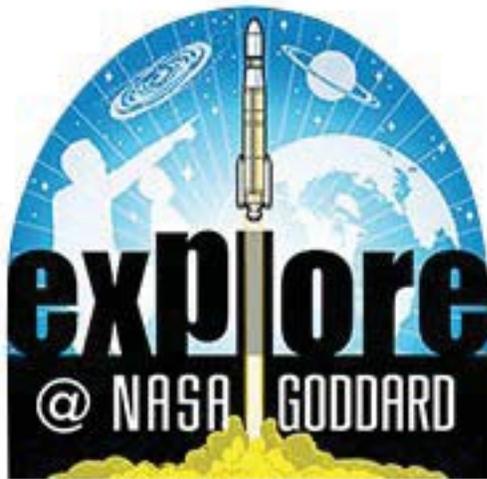
**Reorganizations within Code 400:**

- ❖ Satellite Servicing Capabilities Office (SSCO, Code 408) (Pending)
  1. Establish the Satellite Servicing Capabilities Division, Code 480
  2. Establish one staff office (Contributing Technologies)
  3. Establish two implementation sub-orgs (Flight Projects and Technology Demonstration Projects)
- ❖ Earth Science Projects Division, Code 420 (Proposed effective date 7/26/15)
  1. Inactivated the Global Precipitation Measurement (GPM) Project Office, Code 422
  2. Renamed the Polar Free Flyer Project to the Total and Spectral Solar Irradiance Sensor (TSIS) Project, Code 424
  3. Modified the Landsat Data Continuity Mission (LDCM) Project to the Pre-Aerosol, Clouds, and ocean Ecosystem (PACE) Project, Code 427
  4. Modified the NPOESS Preparatory Project (NPP) Office to the Landsat 9 Project, Code 429

***Lisa Hoffmann, Code 400  
Administrative Officer***

## Explore@NASAGoddard September 26, 2015

Get ready for [Explore@NASAGoddard 2015](#) on Saturday, September 26, from 11 a.m. to 5 p.m.! Goddard will open its gates to the public during this daylong festival of science, engineering, and fun—sharing our mission to explore, discover and understand our dynamic universe! [Explore@NASAGoddard](#) will also engage visitors in our Center's research in Earth science, heliophysics, solar system exploration, astrophysics, and engineering and technology. To commemorate Hubble's anniversary, this year's event will highlight the theme "Celebrating Hubble and the Spirit of Exploration."



## We're on the Web!

Visit the new Code 400 home page  
<http://fpd.gsfc.nasa.gov>

## FUTURE LAUNCHES (CY 2015 to 2016)

Astro-H Soft X-Ray Spectrometer (SXS) (JAXA mission)	January 2016
Raven	February 2016
Geostationary Operational Environmental Satellite (GOES)-R	March 2016
Space Environment Testbed (SET)-1	May 2016
Neutron Star Interior Composition Explorer (NICER)	August 2016
Origins, Spectral Interpretation, Resource Identification Security Regolith Explorer (OSIRIS-Rex)	September 2016
JPSS-1	December 2016

### *The Critical Path*

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*Prepared by:*

**Laura Paschal  
Paula L. Wood  
Herbert Eaton**

If you have a story idea, news item, or letter for *The Critical Path*, please let us know about it.

Send your note to Paula Wood at  
[Paula.L.Wood@nasa.gov](mailto:Paula.L.Wood@nasa.gov),  
Mail: Code 460, or phone Ext. 6-9125.

Don't forget to include your name and phone number.

The deadline for the next issue is November 6, 2015