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April Calendar

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Noon-1 p.m., Chesapeake room in the cafeteria.

30 | **"The Star of Our Solar System"**
Every Thursday 12:15-12:45 p.m., E-100. This session is part 8 of the Modern Perspectives on our Solar System Lectures.

May Calendar

1 | **Wallops 70th Anniversary Lecture Series** 5-6:30 pm, Visitors Center.
"Discover the Future" with Wallops Center Director Bill Wrobel.

7 | **Cinco de Mayo** 5 p.m. F-3 Rocket Club. \$10 per ticket the Rocket Club or Exchange. Beef and bean burritos, tacos, salsa and chips. Themed drink specials. Sponsored by WEMA/MAC.

11 | **Tickled Paint Artworks**
5-7 p.m., F-3 Rocket Club. Lite fare and beverages provided while painting "White Daisies." \$30 per a seat. Sign up and purchase tickets at www.tickled-paint.com or call 410-713-2013.

14 | **Twelfth Annual International Luncheon** 11:30 a.m., F-3 Rocket Club. All civil servants and contractors are invited. Admission to the event is one covered dish of any nationality. Visit <https://wffportal.wff.nasa.gov/events> to sign up and register. Sponsored by WEMA/MAC.

20 | **Women of Wallops Brown Bag Lunch** Noon-1 p.m., F-6, room 213.

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Veteran Astronaut talks shuttle experience and speaking up

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Wallops provide students with experience in the work place

14 | **I Am Goddard**
Amy Davis talks Wallops experience while attending college

on the COVER | A Super Pressure Balloon begins inflating for its trip around the world from New Zealand.

Photo Credit: NASA/Bill Rodman

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RockSatX

WALLOPS ISLAND — A NASA Terrier-Improved Malemute suborbital sounding rocket carrying the RockSat-X payload was successfully launched at 7:01 a.m., Saturday, April 18, from NASA's Wallops Flight Facility in Virginia. After flying to nearly 96 miles altitude, the payload with the six university experiments was recovered.

The rocket carried experiments developed by undergraduate students from the University of Colorado, University of Puerto Rico, Northwest Nazarene University, University of Nebraska and Virginia Tech.

The next launch from Wallops is a NASA Terrier-Improved Orion in the early morning June 25.



University students watch as the Terrier-Improved Malemute sounding rocket carrying their experiments launches from Wallops Island April 18. Photo Credit: NASA/Allison Stancil



Undergraduate students from University of Colorado, Northwest Nazarene University, University of Puerto Rico, University of Nebraska and Virginia Tech pose with a Terrier-Improved Malemute sounding rocket which carried their experiments to space for the RockSat-X 2014 mission April 18. Photo Credit: NASA/Josh Murray



Wallops employees gather at the D-1 Hangar for an airfield Foreign object debris walk April 22. Photo Credit: NASA/Brea Reeves

What's up @NASAWallops?

Professional Networking Mixer held at Wallops

WALLOPS ISLAND — The New and Developing Professionals (NDP) and the Women of Wallops (WoW) co-sponsored an informal Professional Networking Mixer on April 2 at the Wallops' Rocket Club.

"Informal networking provides a great opportunity for employees to connect with senior leadership on a more personal level," stated Sheryl Eni, program manager for NDP. "A lot of good conversation occurs after 5 p.m., since employees are less concerned with time constraints and deadlines."

The event was open to everyone and new employees were provided the opportunity to ask questions and share interesting aspects of career paths with Wallops' senior management, which included Caroline Massey, Joyce Winterton, Bill Wrobel and Frank Bellinger.

For more information on upcoming

networking opportunities at Wallops, contact Sheryl Eni at ext. 1133.

Wallops Discussion Group on NASA's new LGBT report

WALLOPS ISLAND — An informal discussion group was held on March 31 at the Management Education Center following the recent release of NASA's preliminary report, "LGBT@NASA: Preliminary Results of a Multi-Center Study and Sample Building," sponsored by the LGBT Advisory Board of NASA's Goddard Space Flight Center.

The report provided results from online surveys of employees at two NASA locations and served as a starting point for an informal group discussion. Jay Pittman, deputy director for strategy and integration, hosted the conversation with more than 20 contractor and civil servants attending. The goal of the discussion was to promote

understanding and inclusion in the workplace.

Wallops 70th Anniversary Lecture Series Continues

WALLOPS ISLAND — The Wallops 70th Anniversary series continued with the second lecture "Discover the Present" presented by Bruce Underwood, deputy director



of Wallops, April 10 at the NASA Wallops Visitor Center. Underwood provided a look at Wallops' current missions.

The third lecture in the Wallops 70th Anniversary Lecture Series will be May 1 from 5-6:30 p.m. Center Director Bill Wrobel will present "Explore the Future." The event is free and open to the public, and will also be available on [UStream](#).

Geoffrey Bland to speak on NACA 100th Anniversary

WALLOPS ISLAND — Geoff Bland, research engineer for Code 610.W, presented an invited address at the Museum of the Rockies in Bozeman, Montana, as part of their Astronomy and Aerospace Day April 19.



His presentation celebrated the 100 year anniversary of the National Advisory Committee for Aeronautics (NACA), highlighted a variety of NACA/NASA's aircraft and space technology developments and provided an outline of NASA's Earth science efforts with an emphasis on airborne observations, including the use of emerging unmanned aircraft and related technologies.

Bland was invited to speak by Jen Fowler, the assistant director of the Montana Space Grant Consortium, during her visit to Wallops.

New Wallops Golf League

WALLOPS ISLAND — Wallops began revitalizing the recreational golf league with the first tee-off on April 14. Play is open for all levels of golf enthusiasts, including aspiring golfers, as a great opportunity for morale building and physical exercise on Tuesday afternoons at Captains Cove Yacht and Golf Club.

All Wallops and tenant employees, as well as their friends and families, are welcome to participate. There are no dues and no minimum number of rounds. The 2015 Wallops Golf League will continue through October 27, weather permitting. Plans include a couple of tournaments, with more

Countdown to the 70th

As Wallops prepares for its 70th Anniversary celebration June 27, Island Access looks back at when the National Advisory Committee for Aeronautics (NACA) connection with Wallops began and the history of rocket launches at Wallops.

When NACA reached its 30th anniversary, the road to the development of a flight test range under the direction of the Langley Memorial Aeronautical Laboratory in Hampton, Virginia, was well underway.

On March 16, 1945, the Senate Appropriations Subcommittee held a hearing to expand the NACA facilities to include those for high-speed research. The funds requested were approved by Congress and signed into law April 25, 1945. The total funds for the development of the Auxiliary Flight Research Station was \$3.4 million.

However, location for this new test range was not originally envisioned for Wallops Island on the Eastern Shore of Virginia. The leading contender was

details to be announced.

For more information or to sign up, email to [Gregg Frostrom](mailto:Gregg.Frostrom).

Earth Day at Wallops

WALLOPS ISLAND — Earth Day was celebrated at Wallops April 23 at the pavilion from 11 a.m.-1 p.m., featuring the kick-off of the 2015 Wallops Farmers' Market season.

The theme this year was "Simple Acts of Greenness" and information was provided on how to be great stewards of our planet. Vendors at the pavilion provided



Rocket model of Douglas-D-558-II research airplane, shown on launcher at Wallops in E-7 program October 20, 1948. From the program it was possible to estimate control settings required for level-flight trim through the transonic range. From left, project engineer J.H. Parks, Wallops rocket technician N. S. Johnson, and Langley rocket technician G. H. Poole. From *A New Dimension — Wallops Island Flight Test Range: The First Fifteen Years* by Joseph Shortal

Cherry Point, North Carolina. It wasn't until April 1945 that Wallops Island reached the top of the list for the site.

More on the Wallops history in the next issue of Island Access.



a variety of fresh vegetables, herbs, aquaculture clams, artisan bakery items, honey

and beehive supplies, treats for dogs, cats and horses, along with jewelry, scarves and woodcraft. Hamburgers, hot dogs and pulled barbecue chicken plus solar s'mores were sold by WEMA.

Super Pressure Balloon completes rigorous test

NEW ZEALAND — Following 32 days of flying its most rigorous test to date, NASA ended the flight of its Super Pressure Balloon (SPB) Monday, April 27, while the balloon was at float over central Australia.

Controllers detected a leak developing in the balloon and for safety, issued flight termination commands at 11:03 p.m. April 27 EDT (12:33 p.m. April 28 ESCT) over a remote area near the Queensland and New South Wales border just east of Australia's Sturt National Park.

"This balloon accomplished what no other heavy-lift balloon has done by maintaining a constant float altitude for a long duration in the harsh conditions of the Earth's stratosphere," said Debbie Fairbrother, NASA's Balloon Program Office Chief and Principal Investigator for the SPB. "While we hoped for more days at float, we exceeded our pre-established minimum success criteria of 10 days by threefold in the balloon's most demanding test yet."

A team is being dispatched to recover the balloon and payload. Officials will investigate the cause of the leak and apply lessons learned to future balloon missions.

This flight, which began March 26 EDT from Wanaka Airport, New Zealand, was the first time the SPB has flown for a long duration through the day and night cycle. Most standard heavy-lift zero pressure balloons can vary in altitudes as great as 45,000 feet (13.7 km) during the alternating warming during the

day and cooling at night. The SPB, which is designed to maintain a positive internal pressure and shape irrespective of its external environment, maintained a constant float altitude of 110,000 feet for more than 30 days of flight through the day and night cycle.

The science and engineering communities have previously identified ultra long-duration balloon flights at stable altitudes as playing an important role in providing low cost access to the near-space environment for science and technology.

NASA's scientific balloons can fly scientific payloads weighing up to 8,000 pounds for conducting scientific investigations in fields such as astrophysics, heliophysics and atmospheric research. The pumpkin-shaped SPB is made from 22 acres of material and is as large as a football stadium when fully inflated.

Orbital ATK provides program management, mission planning, engineering services and field operations for NASA's scientific balloon program. The program is executed from the Columbia Scientific Balloon Facility in Palestine, Texas. The Columbia team has launched more than 1,700 scientific balloons in over 35 years of operation. This SPB mission marks the first achievement for Orbital ATK in scientific balloon operations since NASA awarded the contract to the company in November 2014.

NASA's Wallops Flight Facility in Virginia manages the agency's scientific balloon program with 10 to 15 flights each year from launch sites worldwide. For more information, visit the [NASA Scientific Balloon Program website](#).



Arctic IceBridge campaign continues ice sheet surveys

GREENLAND — The Airborne Topographic Mapper (ATM) Lidar team from Wallops supports NASA's IceBridge mission, which is conducting the largest airborne survey ever flown of the Earth's polar ice sheets, ice shelves and sea ice.

The 2015 Arctic IceBridge campaign departed Wallops March 16 on a C-130 and is scheduled to complete its mission May 22.

Data from the ATM Lidar scans will be processed at Wallops within six months of the ATM team's return from the IceBridge deployment. From there, the Wallops IceBridge team members will upload the data, which shows the changing height of the ice's surface, to the National Snow and Ice Data Center, where it will become available to the public.

"I am amazed and gratified at seeing the data used by many climate scientists worldwide," said Jim Yungel, program manager for Wallops Island Remote Sensing. "NASA IceBridge data has been used in over 100 peer-reviewed publications since 2009, and ATM data since 1993 is frequently used to document changes in polar ice."

Yungel will be traveling to Thule, Greenland, in late April to support the last three weeks of the 2015 Arctic IceBridge campaign.

"It's exciting to support the IceBridge deployment in such a remote and beautiful region," Yungel said. "Hopefully we'll close out the campaign with a string of successful missions."



Pilot-in-command Mark Roberson sits at the controls of the IceBridge C-130 above the Nussuaq Peninsula in western Greenland. Photo Credit: NASA/John Sonntag



The photo captures the laser beam from the ATM Lidar in mid-scan of typical first-year sea ice off the North American side of the Arctic Ocean. The pulsing laser beam scan takes approximately 1/15th of a second to complete one full elliptical scan. Photo Credit: NASA/ AMES Research Center Digital Mapping System (DMS)



Wallops ATM engineer, Rob Russell, posted his blog "A Day in the Life - IceBridge", detailing how the crew works together to collect IceBridge data on a flight path that took them over the North Pole. Russell sent photos back to Wallops from their operations base in Kangerlussuaq, a small village in western Greenland.

Photo Credit: NASA/ Kyle Krabill



The Bat-4 Unmanned Aerial Vehicle readies for take-off on the Wallops Flight Facility runway as part of Langley's AirSTAR program. Photo Credit: NASA/Patrick Black

Langley tests UAV system from Wallops Airfield

WALLOPS ISLAND — Researchers from Langley Research Center, Hampton Roads, Virginia, along with Wallops' Range and Mission Management Office successfully conducted the first flight of the Bat-4 unmanned aerial vehicle April 13 at Wallops.

The Bat-4 test flight, conducted as part of Langley's Airborne Subscale Transport Aircraft Research (AirSTAR) program, began at 9 a.m. and ran about 15 minutes. The successful flight tested custom avionics systems and flight research technologies.

Overall, AirSTAR is intended to lead to new technologies, tools and methods for improved safety of new and legacy aircraft. These capabilities include measurable recorded data, resulting in improved vehicle systems and aviation safety technologies. Some of the technologies include: system and component failure prevention, malfunction recoverability, maintenance efficacy improvement, loss-of-control accident prevention, improved autonomous system mission management, and improvement of autonomous flight-critical systems.

Additional Bat-4 flights were conducted through April 17 from Wallops. The MLB Company, Santa Clara, California, developed the Bat-4.



NASA Langley researchers give a "thumbs up" for the first test flight of the Bat-4 UAV. Photo Credit: NASA/Patrick Black



The Bat-4 UAV takes off for its first test flight from the Wallops runway on April 13. Photo Credit: NASA/Brea Reeves



Katie Cranor, second from right, talks with NASA and Goddard leadership about safety procedures used during the New Zealand super pressure balloon campaign. Photo Credit: NASA/Jamie Adkins

Veteran Astronaut talks safety at Wallops awareness day

WALLOPS ISLAND — Veteran Astronaut Terry Wilcutt, NASA's Chief of Safety and Mission Assurance, served as the keynote speaker for Wallops' Safety Awareness Campaign Day April 1.

Wilcutt spoke to the theme of "Let's Talk Safety – A Conversation with Leadership," providing insights and personal accounts from his four space flights, which included serving as Mission Commander on STS-106 in 2000 and STS-89 in 1998.

Wilcutt stressed the importance of speaking up if a safety issue is perceived, discussed using the feedback avenues that are critical to mission success, and suggested submitting a dissenting opinion if necessary.

"Everyone should read or reread the Columbia Accident Investigation report," Wilcutt said. "In your program or project meetings, be alert for issues such as groupthink, normalization of deviance, unhealthy schedule pressure, and failure to 'stay hungry' by not investigating technical issues. Moral courage and personal integrity will be required to speak up on an issue, but not doing so will leave you open for a lifetime of regret."



Katie Cranor received the NASA Safety "Yes, IF" coin from Terry Wilcutt during Safety Awareness Day. Photo Credit: NASA/Jamie Adkins

Following the keynote address, Glen Liebig, WFF Safety Office Chief, provided information on safety best practices during recent launches. In addition, Jeff Reddish, Wallops' Antares program manager, discussed the Wallops response to the Antares Orb-3 mishap. Break-out groups then discussed safety aspects and next steps for each Wallops organization.



"RoboSpectrum" team, sponsored by Wallops, represented Wicomico County, Maryland, at the FIRST Chesapeake Regional competition in College Park.



"The Carbonauts" team, sponsored by Wallops, represented Accomack County, Virginia, at the FIRST Virginia Regional competition in Richmond, Virginia.

Wallops-sponsored robotics team heads to championship

WALLOPS ISLAND — The Worcester County, Maryland, student robotics team "Titanium Wrecks," sponsored by NASA Wallops, advanced to the For Inspiration and Recognition of Science and Technology (FIRST) world robotics championship competition in St. Louis April 22-25.

The team, mentored by Will Mast, a systems engineer at Wallops, won the Engineering Inspiration Award sponsored by NASA and the Team Spirit Award sponsored by Chrysler during the FIRST Chesapeake regional competition in College Park, Maryland.

Amy Davis, program manager for the NASA Robotics Alliance Project at Wallops, works with local Virginia and Maryland schools to develop robotics programs that span classrooms from kindergarten to high school and supports student robotics teams.

"The robotics programs that we support at Wallops have inspired our local students to pursue STEM careers and obtain permanent jobs at NASA," Davis said. "By loaning materials to schools and working with teachers and students, I feel that NASA has provided me with an excellent opportunity to give back to our community. I am very thankful to be a part of it."



The NASA Wallops-sponsored robotics team "Titanium Wrecks" represented Worcester County, Maryland, at the FIRST Chesapeake Regional competition in College Park, Maryland.



Above: The NASA Wallops-sponsored robotics team "Titanium Wrecks" represented Worcester County, Maryland, at the FIRST Chesapeake Regional competition in College Park, Maryland.

At right: "The Shore Bots" team represented Northampton County, Virginia.



Wallops scientist publishes results in Nature magazine

WALLOPS ISLAND — A Wallops scientist recently published the results of his research conducted while completing his doctoral degree at Monash University, Australia. Dr. Jackson Tan's work is summarized in the article, "Increases in tropical rainfall driven by changes in frequency of organized deep convection" appearing in *Nature* magazine March 26.

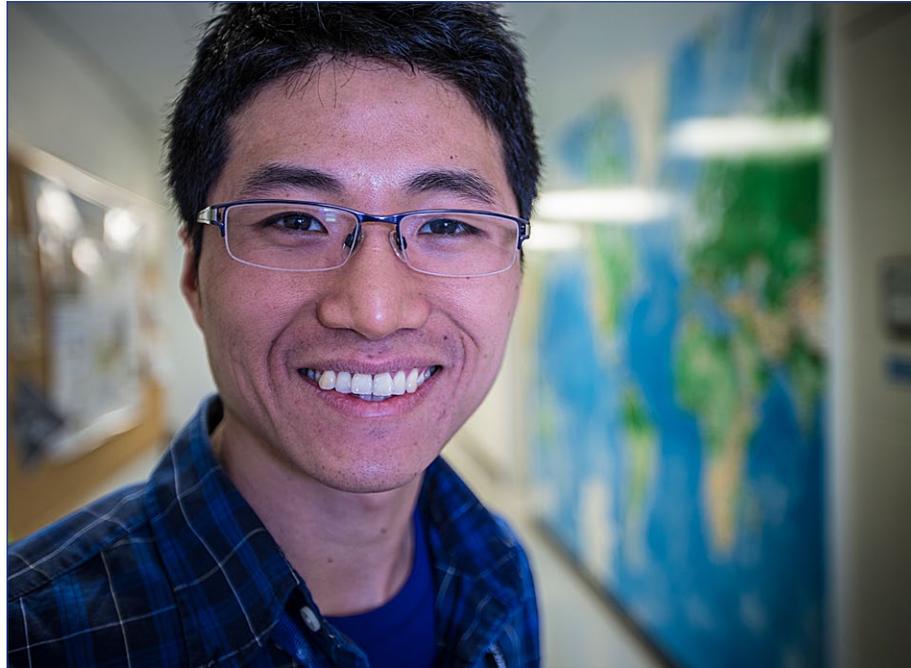
Island Access caught up with Tan, asking what he considered to be the most important results of his research.

"Most of the recent changes in tropical rainfall are driven by changes in the number of these large and extensive storms that span hundreds of miles. On the other hand, the average amount of rain from each storm has remained steady, or even declined slightly. At the same time, the contribution from scattered or isolated storms to observed rainfall changes is small. This suggests that it is these organized storms that play the major role in tropical rainfall changes.

The implication is that climate models, while doing an excellent job at predicting temperatures at climatic time scales, do not represent these large, organized storms well. Our study, based on observations, found that these storms are important for rainfall changes. Therefore, if we wish to make accurate projections of rainfall, we need a renewed focus on a proper representation of these storms in the models."

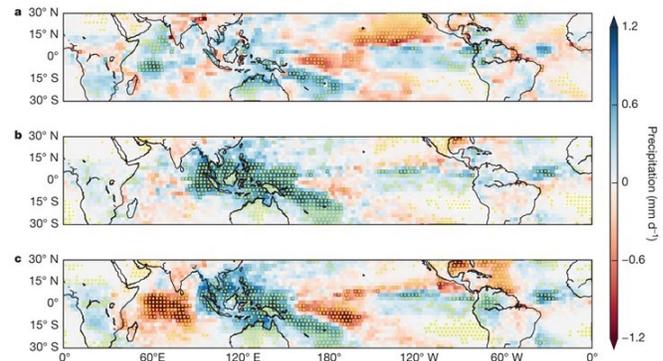
Tan is currently with the Wallops' Earth Sciences division, validating Global Precipitation Measurement products with Australian radars. This work includes a ship-based radar aboard the research vessel *Investigator*, which has the first surface rainfall radar in the Southern Ocean surrounding Antarctica.

"The most exciting part of my current work is contributing towards the development of cutting-edge products that will drive our understanding of the climate system," Tan said. "Every result I get has the potential to improve the data and advance our knowledge, rippling through the works of other researchers to benefit society."



Dr. Jackson Tan is a postdoctoral fellow with the Wallops' Earth Sciences division. Photo Credit: NASA/Patrick Black

The spatial distribution of the changes in precipitation from July 1983 to December 2009.



J Tan et al. *Nature* 519, 451-454 (2015) doi:10.1038/nature14339

nature

Tan, a native of Singapore, spent five years in Australia earning his masters' and doctorate degrees before starting at Wallops as a postdoctoral fellow November 2014. More information on NASA's postdoctoral program for scientists and engineers can be found [here](#).

Dr. Christian Jakob of Monash University, Australia, Dr. William Rossow of the CREST Institute at the City College of New York, and Dr. George Tselioudis of NASA GISS are co-authors on the study.

ESCC, Wallops provide work experience to students

WALLOPS ISLAND — Wallops, in partnership with Eastern Shore Community College (ESCC), is providing five students a work experience like no other.

The Work Experience program, which began in 2011, has five ESCC students teamed up with Wallops mentors in various disciplines for a six-week period that began March 23 and runs through May 1.

The five students are:

- Ian Rose, Melfa, Virginia, studying electronics technology and science
- Teddy Ross, Eastville, Virginia, studying electronic technology with a computer technician specialization
- Alyssa Jacquelyn Behr, Chincoteague, Virginia, studying business management with information systems technology
- Garrett Steube, Chincoteague, Virginia, studying electronics technology
- Craig Crockett, Onancock, Virginia, studying electronics technology

“This experience has helped me a lot with learning how to work as a team and solving problems,” Behr said. “NASA Wallops’ processes show how to work as a team and making the process smooth and successful.”

Other students also expressed thanks to the Wallops mentors.

“NASA, like I expected, has in its employ many down-to-earth, brilliant individuals,” Crockett said. “Our mentors are always welcoming and helpful. The task at NASA is often challenging, and I look forward to my continued training.”

To date, 34 students have participated in the ESCC Work Experience Program at Wallops.



Ian Rose works in engineering.



Alyssa Jacquelyn Behr works in sounding rockets.



Teddy Ross, center, works with Donna West, left, and Walter Grey, right, in information technology. Photo Credit: NASA/Lauren Ritter



Garrett Steube works in sounding rockets.



Craig Crockett works in facilities conducting surveying.

i am goddard

Amy Davis

WALLOPS ISLAND — Amy Davis, an electronics engineer in Tracking and Telemetry Systems (Code 569) at Wallops, received Eastern Shore Community College's (ESCC) Distinguished Alumni Award March 27 in Melfa, Virginia.

Davis attended ESCC from 1989 to 1993, receiving an electronics certificate and an associate's degree in electronics technology.

While a student at ESCC, Davis worked at Wallops Flight Facility (WFF) as a summer hire. Soon after, she moved into a co-op position as an electronics technician trainee. Upon graduating from ESCC, she accepted a permanent position at Wallops and, as part of the Wallops Refocusing Initiative, went back to college at Salisbury University in Maryland, earning a bachelor of science in physics -micro electronics with a minor in mathematics. She has been at Wallops ever since, celebrating 25 years of service this May.

John Floyd, assistant director of electronics, nominated Davis for the award for her career work at Wallops and her community contributions. She is responsible for the building, testing and maintenance of the Tracking and Data Relay Satellite System (TDRSS) high gain antenna, which is primarily flown on Wallops' Antarctic balloon campaign flights. She has also championed careers in Science, Technology Engineering and Mathematics (STEM).

Island Access caught up with Davis and asked her what has influenced her throughout her career.

"The people I worked with during my first four years as a co-op made the biggest impact," Davis said.

She worked in the Calibration Lab in F-160, the software group in N-161, the TV Lab in N-162, and the payloaders in F-10.

"While I was in college, it was great to come in to work, go to the lab, and see real-time applications of our classroom discussions," Davis said. "The technicians who I worked with helped make my studies relevant and fun. Now, as I have just selected summer interns, I hope I can provide them with a similar, meaningful experience."



Amy Davis, left, receives the Distinguished Alumni Award from Dr. Linda Thomas-Glover, President of Eastern Shore Community College.