

# ORBITER NEWS

News, announcements, and more.

## The Next Generation in Space: Take Your Kids to Work Day

April 28, 2022

This week, Aerospace celebrated Take Your Kids to Work Day (TYKTWD) with a video and virtual activities that taught kids about space and the endless opportunities that lay before them. Through the program, children and grandchildren of Aerospace employees were reminded to reach for the stars and dream big about their future.

TYKTWD was created by the Foundation for Women in 1993 and has been growing ever since. Across the United States, nearly 40 million employees participate in TYKTWD events each year.



*Children and grandchildren of Aerospace employees used clues from the TYKTWD activity video to unscramble a special message from Steve I. "The Rocket Guy".*

More than 200 kids participated in this year's Aerospace event, which was hosted by the Corporate Social Responsibility (CSR) team. The team took a new approach to the virtual Take Your Kids to Work Day event by providing students with a special mission and worksheet to complete after school.

Students were introduced to the value of space through an animated video exploring the importance of satellites to people's everyday lives.

This virtual event called the children and grandchildren of Aerospace employees on a special mission to unscramble Steve I. "The Rocket Guy's" message. Clues were hidden throughout the video that helped students to complete their worksheet and decode the scrambled message.

"When I was a kid, I watched Neil Armstrong and Buzz Aldrin land on the Moon and dreamed of one day traveling into space too. The frontier of space is opening in ways I could not have imagined as a kid,"



*Kids received an Aerospace shirt for their hard work and to commemorate the event.*

Isakowitz said in his message. “I think right now is the most exciting time in space. I hope you are excited about what is next, I know I am.”

Throughout the video, participants received mission support from some of Aerospace’s top technical experts. Jon Binkley, Systems Director of Launch Enterprise Engineering, spoke to the students about how Aerospace uses rockets to launch satellites into orbit and Dr. Amanda Bayless, Research Scientist with the Remote Sensing Department, spoke about AeroTel and explained how it is used to study objects like satellites in Earth’s orbit and look deep into space at planets and asteroids.

TYKTWD serves as an opportunity to share with children the groundbreaking work that is being done at Aerospace. By exposing children to a variety of exciting opportunities and career paths, Aerospace hopes to inspire the next generation in space.

“As you have heard throughout today’s mission brief, our employees have a big role in the advancements you see in space today,” said Isakowitz. “From observing our planet to protecting space and our nation. Our jobs take things from our imagination and make them real. As we look into the future, we need bright minds and hard workers to help us solve problems and dream up new ideas. And with your help, there might be more uses of space in the future!”

The CSR team is grateful to everyone who helped with this year’s program and is looking forward to seeing all the kids and grandkids at next year’s event.



*Nolan and other kids cracked the code and unscrambled the message.*

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## Happy National Administrative Professionals Day!

April 27, 2022

Aerospace plays a critical role in advancing our nation’s space systems and capabilities, providing world-class expertise to solve complex technical problems to deliver on the mission. However, none of this would be possible without the extraordinary work of the administrative professionals who keep the operations running smoothly.

As today is National Administrative Professionals Day, which is celebrated each year on the Wednesday of the last full week in April, Aerospace employees can take this opportunity to express gratitude and appreciation for their administrative (admin) colleagues.

In observance of this special day, the Aerospace Women's Committee (AWC) is showing its appreciation for the contributions of all admins of Aerospace by highlighting some of their experiences and perspectives. Aerospace could not function without its admins, and neither could AWC – 29% of AWC's leadership and an estimated 13% of AWC's membership are admins!

Responses were taken from interviews with Lynda Chrisco (AWC National Treasurer), Iris Nunn (AWC Huntsville Regional VP), Misty Thompson and Jessica Denham.



***Can you describe your current role?***

**Iris:** Administrative professional IV – more like an office manager because I wear all the hats! When we had no IT support onsite or front desk security, I was the boots on the ground for those roles, too.

**Jessica:** I support the Control Analysis Department and Embedded Control Systems Department within Guidance and Control Subdivision.

**Misty:** Administrative specialist II where I book travel, set up meetings and conferences, work on MDA weekly reports, order food for conferences, keep track of the work orgs, answer phones and take messages, and work with Air Force accounts.

**Lynda:** My current role is an administrative specialist III for the Architecture Design Subdivision (ADS) and Engineering Technology Group (ETG) where I assist folks within ADS all over the United States with travel, conference room requests, expense reports, travel, timecards and setting up meetings via Outlook. I also assist folks within ETG Colorado Springs with the same things as ADS.

***What is your favorite thing about being an admin?***

**Iris:** I really like the people I work with. I like finding ways to support them while supporting the mission.

**Jessica:** I love solving problems and knowing that people feel relieved when they hear I'm on the job.

**Misty:** Helping my coworkers with anything they may need help with and getting things done for my co-workers.

**Lynda:** Being able to help amazing people!

***What is the hardest part of being an admin?***

**Iris:** Sometimes it can be hard to be the *only* admin at my location. There is no back up when I need to be out of the office.

**Jessica:** Sometimes having to work within systems without the authority to streamline or improve them.

**Misty:** When I may need help with something before I can help others.

**Lynda:** The hardest part of being an admin is when the people I support and the other admins do not communicate with one another and myself, so work is sometimes duplicated.

***What is something you wish you knew before starting your job?***

**Iris:** I didn't understand the concept of an FFRDC and it took me a while to understand it. But I'm glad I'm here.

**Jessica:** I wish I'd known we would be working from home for at least two years. It would have helped me relax about a number of things.

**Lynda:** I wish that I knew more about the executives and what areas they cover and the departments they support before I started my job at Aerospace.

***What is one piece of advice that you would give to other admins?***

**Iris:** Use the tools at your disposal to make your job easier. (OneNote saves my life daily!) That way when you are organized you can better support others.

**Jessica:** Learning new technical skills will make your life easier!

**Misty:** Help your managers and other coworkers when they need it and make their job easier for them. Make yourself approachable and if someone needs something done, try and get it done for them as soon as possible and don't make them wait.

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## Earth Day: How Aerospace Studies Earth from Space

April 21, 2022

To deeply understand a subject, it can be worthwhile to look at the bigger picture—even if that means traveling hundreds of miles away from the object of study. In celebration of Earth Day, we are looking at the work Aerospace has recently undertaken to better understand the “Blue Marble” that we call home, achievements made possible on behalf of our rich history and our people’s technical excellence.





*In honor of Earth Day, we reflect on Aerospace's recent work in support of the planet we call home.*

## Seeing Earth in a New "Light"

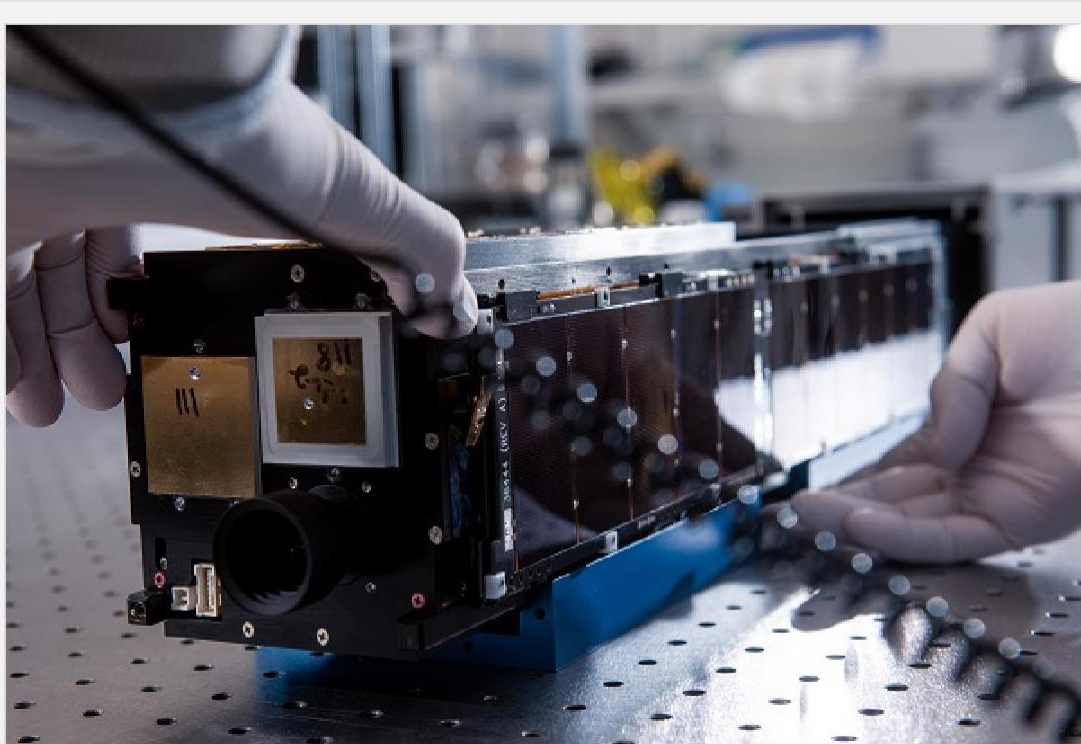
Satellite imagery is utilized for various activities, including terrain mapping, meteorology, and building our knowledge of space weather's effects on Earth. While most space-based cameras rely on a light source to capture imagery, Aerospace's Phenomenology Imager & Nighttime Observer (PIANO) can capture quality images in almost complete darkness. PIANO launched in December and was installed on the International Space Station on Jan. 11.



*PIANO launched in December and was installed on the International Space Station in January. (Credit: NASA)*

## Studying Earth's Atmosphere

As space continues to rapidly develop and host more spacecraft, it is important to understand the environment that these systems will reside in: low-Earth orbit. The Daily Atmospheric Ionospheric Limb Imager (DAILI), which launched in December, is studying the molecular oxygen density of Earth's upper atmosphere. The data gathered by this CubeSat will help improve current atmospheric models and scientists' understanding of the propagation of radio signals and satellites' orbits.

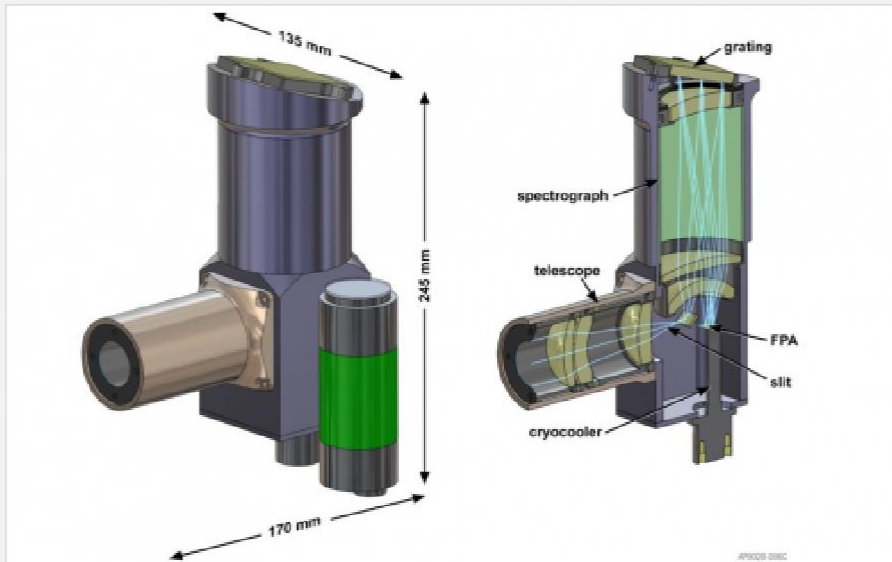


*DAILI is studying the molecular oxygen density of Earth's upper atmosphere.*

Recently, a team of Aerospace scientists was selected as part of NASA's Geospace Dynamic Constellation (GDC) Interdisciplinary Scientist (IDS) competition to support the GDC satellite's mission to study a select part of Earth's upper atmosphere: the ionosphere-thermosphere (I-T) system. Due to its variable conditions, the I-T system can interfere with and affect space systems. To address some challenging and under-prioritized aspects of a science constellation, the team is also developing the Atmospheric Data and Mission Planning Tool in an Interactive Visualization Environment (ADAPTIVE).

## Pinpointing Greenhouse Gas Activity

Human activity contributes to the carbon cycle but what activities and which areas are the biggest producers? Aerospace's CarbonWatch intends to identify and monitor the distribution of greenhouse gas emissions during both the day and night. The data collected by this carbon dioxide (CO<sub>2</sub>) and carbon monoxide (CO) remote sensing system will help inform and shape how solutions are managed to reduce these types of emissions.



*CarbonWatch's data will help inform scientists which areas produce the most greenhouse gases, shaping future actions on how to curb these emissions.*

## Looking at Space for the Earth's Future

The data collected from Space-Based Environmental Monitoring (SBEM) can help protect U.S. infrastructure, but the growing presence of adversaries put these capabilities and information at risk. Successfully protecting current SBEM efforts may require adopting innovative strategies, wider coordination across the nation's aerospace sector, and greater transparency and sharing of environmental data. Aerospace's Center for Space Policy and Strategy is dedicated to studying contemporary areas of concern within the enterprise, including those about the environment and our planet's changing climate.



*ULA's Delta IV Heavy rocket uses a combination of liquid hydrogen and liquid oxygen for fuel. (Credit: ULA)*

*These are only a few examples of the innovative work Aerospace has performed to improve humankind's understanding of Earth and our place in space. Are you currently supporting an Earth science-related project? Share your story or experience in the comments below!*



## From the Ground Up

The increase in launches and the emerging field of space tourism are only a couple of factors that could influence the aerospace industry's relationship with Earth. In a recent Q&A on our Medium channel, Aerospace's Marty Ross shares with readers [how propulsion and launch activities](#) can affect our planet's atmosphere and what the future may look like.

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# Aerospace Highlights Commercial Space Futures, Space Workforce 2030 and More at 37th Space Symposium

April 14, 2022

The 37th Space Symposium in Colorado Springs concluded last week after a flurry of activity over the course of four productive days, packed with high-level meetings, media engagements and panel discussions. It was in many ways a return to form for one of the space industry's premiere conferences after having shifted to a smaller format since 2019 due to the pandemic.

As always, Aerospace was well-represented with a contingent of executives and partners for Commercial Space Futures,

international and the space enterprise. The major themes of this year's Space Symposium focused on strengthening National Security Space with an emphasis on commercial integration and expanding the pool of diverse technical talent and capabilities in support of these efforts.

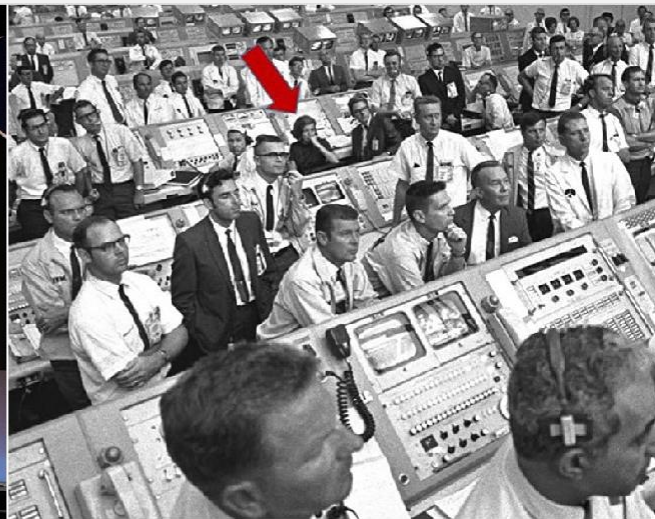
"To those in industry: change with us," said Gen. John W. "Jay" Raymond, Chief of Space Operations for the United States Space Force, during his speech urging more partnership and collaboration with industry to advance resilient space architectures that outpace strategic competitors. "Bring your best talent, be willing to do business differently, challenge our assumptions."

These priorities further validate that Aerospace's corporate strategic direction is tightly aligned with the needs of its government customers.



*Aerospace President and CEO Steve Isakowitz joined top space industry leaders to sign a "Space Workforce 2030" pledge at the 37th Space Symposium.*

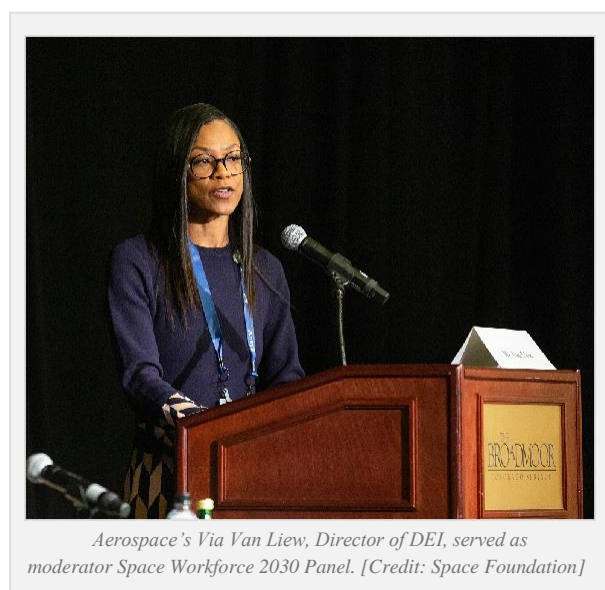




Steve Isakowicz (left image) announced the Space Workforce 2030 pledge at this year's Space Symposium. His presentation included the famous photo of Joann Morgan (right image) in the control room at Kennedy Space Center during the Apollo 11 liftoff, which conveys both the progress made since and the work that still lies ahead in making the space industry a more diverse and inclusive place. [Credit: Space Foundation, NASA]

Among Aerospace's engagements this year included a Space Industry CEO Commitment to DEI plenary session, which garnered an audience of more than 4,000 attendees. Aerospace President and CEO Steve Isakowicz joined several top space industry leaders to sign a "Space Workforce 2030" pledge, the first-of-its kind commitment by over 25 leading space companies to work collaboratively to advance diversity across the industry.

"Innovation best happens when you get different people, with different perspectives and different backgrounds coming together," Isakowicz said. "We are an industry that depends on innovation, and we need to go beyond like-minded individuals to really expand that."



The pledge outlines several long-term efforts to increase diversity and representation in our collective technical workforce and includes a commitment to increase the diversity pipeline. Read more about the pledge [here](#).

Isakowicz was also a panelist for a discussion moderated by Via Van Liew, Director of Diversity, Equity and Inclusion (DEI), to discuss the important role of diversity for building strong workforces today and for the future. They were joined by Dan Jablonsky, CEO at Maxar Technologies; Jeff Grant, Vice Chairman of the Space Foundation; and Jay Patel, Vice President of Programs for Northrop Grumman.

Chief Technology Officer Debra Emmons highlighted Aerospace's Commercial Space Futures initiative, which aims to foster greater collaboration between the U.S. government and commercial space and accelerate the development and advancement of U.S. space capabilities.

“We’re seeing a real push across the Department of Defense, Space Force, the intelligence community and civil space to migrate to a more commercial-first approach,” Emmons told *SpaceNews*.

Emmons also moderated the Backing the Brightest panel, which builds on discussions highlighted through Aerospace’s partnership with TechCrunch regarding the growing role of venture capital and startups to advance the space enterprise. Aerospace also partnered closely with TechCrunch to facilitate a Game Changers Luncheon, which featured a panel of commercial space leaders to reflect on the big ideas and technologies that will shape the future of space.

In addition, Vice President Jamie Morin and Senior Project Engineer Sam Wilson moderated a Center for Space Policy and Strategy roundtable discussion with Under Secretary of the Air Force Gina Ortiz Jones on the topic of leveraging commercial capabilities and services for space acquisition.



*Aerospace CTO Debra Emmons (right) and Tom Gillespie of In-Q-Tel, a not-for-profit venture capital firm, during the Backing the Brightest panel.  
[Credit: Space Foundation]*

On the topic of artificial intelligence, Aerospace Systems Director Dr. Amy O’Brien served as a panelist with executives from industry to discuss leveraging new technologies for space.

Aerospace also partnered with the Maui Economic Development Board to host a hands-on meeting for leaders in the international Space Situational Awareness/Space Traffic Management community, including U.S. civil and national security space leaders, international representatives and multiple leading commercial entities. This working meeting included collaborative discussions to enable expertise-sharing and coordination and a demonstration of the Open Architecture Data Repository prototype system.

Whether it was on stage, in meeting rooms or through press coverage, Aerospace’s presence permeated throughout this year’s Space Symposium, emphasizing its value as the nation’s trusted partner for a rapidly evolving space enterprise.

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## Aerospace Rolls Out Enhanced Meeting Functionality Across Enterprise

April 14, 2022

The modern work environment is transforming how teams operate, creating new ways to optimize productivity and collaboration for onsite and remote employees. As Aerospace continues to shape its work

environment for the future, applying technology to bridge the gaps of an increasingly hybrid workforce is essential.

To meet this challenge, Aerospace is adopting new tools and resources to strengthen cohesion and coordination across the corporation. As part of that effort, Enterprise Information Services recently rolled out new, easier-to-use capabilities for conducting hybrid meetings in conference rooms across Aerospace's nationwide campuses.



“The way people work is evolving,” said Eric Dashofy, General Manager of EIS. “Now that pandemic restrictions are easing, we are seeing increased demand for hybrid collaboration where team members are both onsite and remote. Technologies that connect people from any location enable our teams to continue to do their best work. By making those technologies easy to use, staff can spend less time getting connected and more time connecting.”

Hybrid meetings are becoming increasingly common, where a portion of attendees participate in-person and others join in remotely. Regardless of the composition, the underlying principle of a hybrid event is for both virtual and physical participants to have a seamless experience in terms of quality, interaction, visibility and access so that their attention is focused on the discussion.

To that end, EIS has installed approximately 75 Logitech MeetUp ConferenceCams in unclassified conference rooms around the company.

These “all-in-one” systems are designed to be much simpler than the traditional video-to-conferencing tools and can easily connect with many collaboration and conferencing tools, including Zoom and Microsoft Teams.

In addition, they’re intuitive and can add value to any meeting by optimizing the benefits of live and virtual interaction between presenters, in-person attendees, and virtual attendees.

The ConferenceCam features Ultra HD 4K optics, and three camera presets deliver remarkable video quality to further enhance face-to-face collaboration. Instructions for using ConferenceCams and links to related information are available [here](#).







Employees are encouraged to use and familiarize themselves with this new hybrid meeting technology and provide feedback to optimize their meeting experiences.

“My favorite thing about the new ConferenceCams is that you can get high-quality room audio and video with one click when joining a meeting from a conference room, just like joining from a laptop. There’s no dial-in or complicated configuration required. This is just one of the ways we’re preparing Aerospace for a future in which a less-centralized workforce can continue to deliver mission success,” Dashofy said.

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## Aerospace’s UPLIFT Speaker Series Fosters Innovation Through Diversity

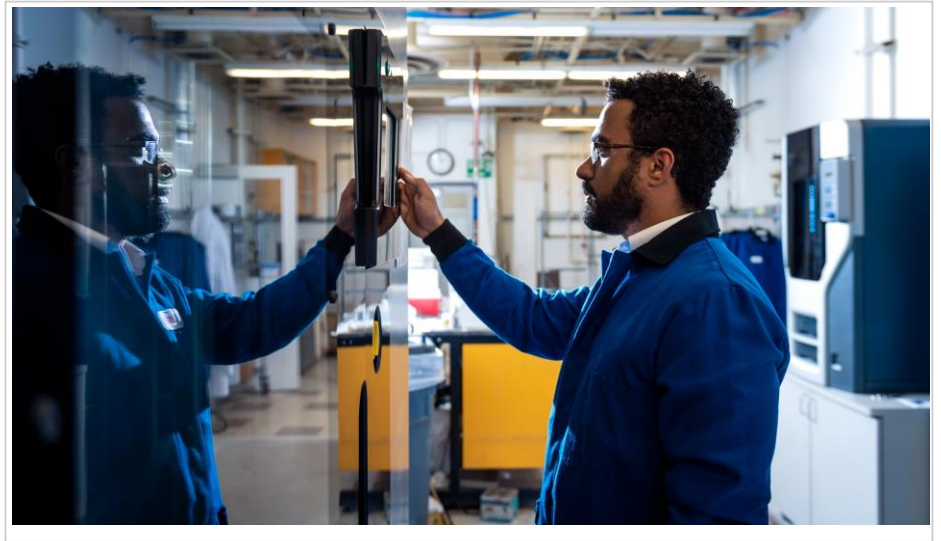
April 12, 2022

The Aerospace Corporation is committed to building innovation through collaboration and diversity. Through exposure to new ideas and perspectives, our diverse teams can create novel solutions for addressing the hardest problems in space. In 2021, Aerospace created UPLIFT, a new collaboration program dedicated to building exceptional talent and improving our STEM diversity. The program invites students, professors and industry professionals to network and present their research to the Aerospace

technical community, paving the way for a culture of collaboration and innovation to thrive. With particular focus on students in underrepresented minority groups, this program bolsters our STEM and Aerospace community by increasing student career growth and diversity awareness.

The UPLIFT program was developed by Aerospace's Physical Science Laboratories (PSL) to connect historically underrepresented Ph.D.

students, postdocs, faculty and space professionals with the science and engineering experts at Aerospace. UPLIFT facilitates meaningful relationships between Aerospace staff and promising talent by providing opportunities to engage with the organization to share research and diverse perspectives.



The key objectives of UPLIFT are to build community and collaboration with talented, diverse scientists and engineers, expose Ph.D. students to Aerospace science and R&D careers, and to collaborate with industry or university professionals whose research aligns with PSL.

"At Aerospace, we believe that the best science and engineering happens in an environment where all voices are heard and respected. This collaborative environment drives innovation," said Dr. Timothy P. Graves, General Manager of PSL.

In the program's first year, UPLIFT has welcomed eight speakers to present their work, including five Ph.D. students, two research scientists and one professor across a wide range of topics.

The program is comprised of three parts: UPLIFT Seminar, UPLIFT Connect and UPLIFT Engage. The multi-faceted approach is designed to encourage meaningful connections to develop between presenters and Aerospace professionals.

“Fostering diversity creates a better working environment, not only for diverse people, but for everyone at Aerospace,” said Don Walker, PSL Senior Scientist.

UPLIFT Seminar is a key aspect of the program that provides speakers the opportunity to come to Aerospace and share their research and expertise. Through Seminar, speakers can present their technical research through an UPLIFT Science talk or they may present successful strategies and programs for amplifying underrepresented voices through an UPLIFT Impact talk.

UPLIFT Connect facilitates collaborative relationships between Aerospace staff and promising talent by providing opportunities for the speakers to connect with company leaders and diverse experts in the field on technical or career-related topics.

“We want to form connections and support these students with their research while they obtain their degree,” said Amber Glow, PSL Strategic People Partner.

This can include meeting with staff, engaging with researchers, and networking with Employee Resource Groups like the Aerospace Women’s Committee, Aerospace Black Caucus, Aerospace Totally Adaptable Group, or the Aerospace Lambda Alliance.

Through UPLIFT Engage, the UPLIFT committee connects with the speakers to discuss additional ways to collaborate and stay connected with Aerospace. This includes connecting speakers to the Aerospace organization through social media and monthly newsletters to stay engaged with the happenings in the organization. If applicable, speakers will also be invited to attend networking, educational or developmental events after their Seminar Day.

“When you treat diversity as the asset that it is, you end up with a stronger, better-performing organization,” said Walker.

Both Aerospace employees and speakers benefit from engagement with UPLIFT. Everyone involved is able to collaborate with researchers, industry professionals, professors and students in the field and learn from each other and the research taking place across the industry.

“We really want UPLIFT speakers to enjoy the experience and get the most out of it. Hopefully they walk away thinking Aerospace is an amazing place to start their career, or they are excited to partner with us as



*Aerospace research scientist Don Walker uses a large-area LED solar simulator to test solar cells.*



we move forward,” said Glow.

After the success of UPLIFT’s first year, the program hopes to further expand, featuring even more speakers in 2022 and beyond.

If you know or are a Ph.D. student, post-doc, or professor with research focusing on Physics, Chemistry, Engineering, Materials Science, Space Science, or another related area who would like to participate in UPLIFT, you can contact [uplift-psl@aero.org](mailto:uplift-psl@aero.org).

*The Aerospace Physical Sciences Laboratories (PSL) offer a diverse research portfolio, including 156 different laboratories, blending foundational scientific expertise with cutting edge research to serve a broad customer base. The exclusive ability to work with all stakeholders, including government, industry, and academia, enables us to provide novel solutions to the most challenging issues in current and future technologies. All PSL laboratories, capabilities, and personnel require diverse teams to tackle the new challenges of our space enterprise.*

To learn more visit: <https://aerospace.org/careers/PSL>

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## Volunteer Month: How Aerospace Employees Are Strengthening Our Communities

April 05, 2022

April is National Volunteer Month, which seeks to highlight the impact of volunteers and encourage volunteerism within the community. Aerospace is encouraging employees to give back to their communities with a new program through Aerospace Cares that celebrates and helps to amplify their volunteer efforts.

Throughout the month of April, employees who volunteer for three or more total hours will be awarded a value of \$10 to their Aerospace

Cares account, which can then be donated to any cause available on the platform. Donations must be



Volunteers in the month of April will receive a special reward through Aerospace Cares.

made within one month of receiving the award. Those who wish to participate will need to log their April volunteer hours in Aerospace Cares.



“Aerospace employees have shown time and again a deep commitment to giving back to community service and engaging across a broad spectrum of great causes,” said Ed Swallow, Senior Vice President and Chief Financial Officer of Aerospace. “Volunteerism is a big part of how our people continue to make a difference and deepen our impact. It’s great that we continue to recognize these contributions, and this program is one way to support the causes our employees are passionate about.”

## Recognizing How Our People Give Back

Every month, Aerospace Cares highlights an Aerospace employee as the Volunteer of the Month to highlight their impact as well as help shine a light on the causes they’re supporting. In March, Dr. Davinia Rizzo, a senior project engineer with the Defense Programs Warhead Support, was recognized for the variety of ways she helps the community, including sending shoeboxes full of gifts to children around the world and serving as a grant panel chair for the United Way of Central New Mexico.

“My primary reason to serve is because I feel so blessed and it’s great and humbling to give back — especially to those struggling with poverty,” said Rizzo.

In February, Margie Eastman, a principal engineer with the Software Engineering Subdivision who volunteers as a coach mentor and judge for VEX Robotics, was recognized. In addition to hundreds of hours of volunteering through STEM activities with robotics, she also serves as a local science fair judge, ice hockey team manager and Cub Scout treasurer.

## Encouraging Volunteerism Across Aerospace

Employees across Aerospace have found a number of ways to give back and get involved.

In El Segundo, employees recently participated in a ribbon cutting for the new 96th Street STEAM Academy Community Project unveiling. A book drive was held in January and February on Aerospace Cares, which generated donations of more than 900 books to the school's library.

In Albuquerque, employees recently volunteered in their community by participating in an [Aerospace panel](#) on the STEM Research Challenge for the University of New Mexico's STEM-H Center. The panelists from Aerospace represented a variety of backgrounds and gave students considering joining the STEM field insight and advice on pursuing and navigating their career paths. "The panel was a great way to connect with students interested in the STEM field and companies like Aerospace," said Riaz Musani, Systems Director with the Space Innovation Directorate. "These volunteer opportunities give us the chance to make a difference and to connect with those in our community."

Another way Albuquerque employees gave back this year include volunteering for STEM Day at the National Museum of Nuclear Science and History and by packing boxes of food at the Roadrunner Food Bank Warehouse.



*Across the country, Aerospace volunteers are making an impact on their communities through a wide variety of outreach opportunities.*



*Robert Schoenberger proudly represents the Megalodons, one of the Science Olympiad teams he mentors at Mart Twain Middle School.*

As part of Aerospace's ACE K-12 STEM Outreach program, employees are helping to inspire the next generation of space scientists and engineers too.

For example, over the past two years, Robert Schoenberger, Senior Project Engineer with the Advance Programs and Analysis Directorate, mentored the Mark Twain Middle School (MTMS) team, a Title 1 school in Los Angeles, in the Southern California Science Olympiad. This year, MTMS competed in the open competition with two teams, the Megalodons and the Hammerheads, in the SoCal Regionals. The teams came in 20th and 23rd out of 48 teams, with seven top 10 placements in individual events, including a second-place medal in Meteorology.

"It's been amazing to see how much the students have improved and to see how proud they are of all they have accomplished," said Schoenberger. "They worked so hard and learned so much along the way and it means so much to me to be a part of that."

Mentors are always needed for Science Olympiad teams, especially Title 1 schools. Those who are interested in volunteering can reach out to [stem@aero.org](mailto:stem@aero.org).



Aerospace Cares has also shared a number of ongoing volunteer opportunities for those looking for ways to get started:

- ♦ Volunteer with the Space Force – in-person events throughout Los Angeles
- ♦ Virtual Visits with LAUSD – virtual event
- ♦ Visit classrooms in your community with a STEM party pack

*We hope many employees will log their volunteer hours in April and take advantage of April's new program. If you are interested in finding out about other volunteer opportunities, visit [Aerospace Cares](#). For more information about the April special program, [click here](#).*

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## April Fools: Aerospace to Launch CubeSat Condo Constellation

April 01, 2022

Aerospace has long been a pioneer in the field of small satellites. With the pace of new commercial constellations launching into orbit, the corporation is looking to stay on the technical cutting edge with plans to launch its own constellation of CubeSats—and for a mission that's certainly a first of its kind.

In yet another example of innovation pushing the boundaries of what SmallSats can do, several groups at Aerospace have teamed up to develop a constellation concept to study tardigrades in space.

Tardigrades, also known as water bears, are small animals (500  $\mu\text{m}$  to 1 mm long) that can survive extreme pressure, radiation, temperature, and even the vacuum of space. Researchers within Aerospace's Space Material Labs have been studying them for many years.

Recently, they began noticing an unexpected increase in the number of tardigrades in a few of their habitats in the lab. The team believes this increase in population may be due to the ingestion of



quadrotriticale, a hybrid of wheat and rye that was developed by researchers from Canada in the 1900s. Notably, only the groups fed quadrotriticale have seen a dramatic increase in their population.

“At first, we weren’t sure what to do with the overpopulated groups,” said Dr. Andrea Hsu, Principal Scientist in the Propulsion Science Department. “But after speaking with the other teams across Aerospace, we realized this was the perfect opportunity to do what no one has done before.”

In an effort to rehome this billowing population, tardigrades will be transferred to specially designed CubeSats set to orbit the Earth in Aerospace’s constellation, tentatively known as the Aerospace CubeSat Residence Observation Nano-sized Interface Mission (ACRONIM). This type of rehoming project will build on the existing AeroCube bus.

The SmallSats in the constellation will have the capability to periodically dock with one another, allowing tardigrades to explore different CubeSats and avoid the drawbacks of prolonged communal isolation in their living environment.

“We also see this as a great opportunity to test out next generation optical crosslink communication between the vehicles in the constellation, allowing the tardigrades to communicate between the satellites,” said Darren Rowen, Director of the Small Satellite Department.

The team researched what environments would be most hospitable for tardigrades and collaborated with Aerospace’s ergonomic experts to create the concept for the CubeSats that would house the tardigrades as they live out the remainder of their lives in space.

“It was a bit of a challenge to adapt our standards to the size and shape of the tardigrades,” said ergonomic evaluator Nakeisha Seymore in Environmental Health and Safety. “I’ve never done an ergonomic assessment for someone with eight legs before.”

Conditions in the cubes will remain fairly consistent and will not feature extreme temperature conditions like tardigrades have been found surviving in.

“Tardigrades are well known for being able to survive in some of the harshest conditions not only on Earth, but also in space,” said Hsu. “Our team is excited to see how tardigrades respond when living in a new environment never seen before, luxury tardigrade condos orbiting the Earth.”

Each CubeSat will be equipped with temperature controls, broadband connectivity, internal microscopical video recording for Teams meetings, as well as a variety of different surfaces throughout the satellites that researchers believe will contribute to the comfort of the tardigrades. Aerospace’s CubeSat experts will monitor and control the constellation as it orbits the Earth and will work with the Space Materials Lab team to analyze their findings.

“This project allowed us to think outside the box and come up with an internal design unlike any we have ever created,” said Catherine Venturini, Small Sat Hub Lead. “This will be something no tardigrade has ever experienced. And talk about a room with a view.”

# Happy April Fools Day! (Reveal)

April 01, 2022

No, Aerospace is not launching a constellation for tardigrades. However, we do have a fleet of CubeSats already in orbit. Learn more about Aerospace's history pioneering the field of small satellites and AeroCube program [here](#). Be sure to meet the fleet while you're there!



Fun fact, Dr. Andrea Hsu has also been hosting a STEM series about Tardigrades on Aerospace's YouTube channel. You can check out the latest episode [here](#).

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# April 2022 Obituaries

April 01, 2022

*Sincere sympathy is extended to the families of:*

- ♦ **Andrea Abate**, member of administrative staff, hired Aug. 24, 1987, retired July 1, 2020, died March 19, 2022
- ♦ **Fred Baskin**, member of technical staff, hired Nov. 24, 1960, retired May 1, 1989, died March 2, 2022
- ♦ **Harold Bernstein**, member of technical staff, hired May 21, 1963, retired July 1, 1994, died March 14, 2022
- ♦ **James Boswell**, member of technical staff, hired July 28, 2014, died Dec. 31, 2021
- ♦ **Linda Clarke**, office of technical support, hired Sept. 13, 1960, retired Oct. 1, 2004, died April 20, 2021
- ♦ **Sally Hanson**, office of technical support, hired July 21, 1986, retired Feb. 1, 1994, died March 9, 2022
- ♦ **Gary Holtz**, member of technical staff, hired April 1, 1963, retired April 1, 2003, died Feb. 9, 2022
- ♦ **Alvin Lowi Jr.**, member of technical staff, hired Sept. 5, 1960, retired March 1, 1990, died Dec. 17, 2021
- ♦ **Thomas McGinnis Jr.**, member of technical staff, hired July 3, 1979, retired Oct. 1, 1993, died Jan. 24, 2022
- ♦ **Robert Mills**, member of technical staff, hired Nov. 21, 1963, retired March 1, 1998, died Feb. 17, 2022
- ♦ **Harry Minert**, member of technical staff, hired March 4, 1980, retired Oct. 1, 1996, died Feb. 23, 2022
- ♦ **Socrates Monos**, member of technical staff, hired April 16, 1973, retired Nov. 1, 2000, died Oct. 10, 2021
- ♦ **Ashok Munjal**, member of technical staff, hired Aug. 21, 1989, retired March 1, 2006, died Feb. 1, 2022
- ♦ **Delois Nealy**, member of administrative staff, hired Aug. 2, 1977, retired Sept. 1, 1995, died Jan. 9, 2022
- ♦ **Ernest Scheyhing**, member of technical staff, hired Nov. 16, 1964, retired Oct. 1, 2013, died March 11, 2022
- ♦ **Kenneth Urquhart**, member of technical staff, hired Jan. 4, 1968, retired Aug. 1, 1994, died Feb. 1, 2022
- ♦ **Mary Walter**, office of technical support, hired Sept. 18, 1961, retired June 1, 1977, died Nov. 12, 2021
- ♦ **Rosemary Walters**, office of technical support, hired Oct. 30, 1981, retired June 1, 1990, died Feb. 17, 2022
- ♦ **Boyd Winn**, member of technical staff, hired Feb. 21, 1961, retired Dec. 1, 1990, died March 14, 2022

*To notify Aerospace of a death and have it included in the Orbiter, please contact People Operations at (310) 336-5107.*

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