AEROSPACE

ORBITER NEWS

News, announcements, and more.

Rich Mentoring Culture Continues at Aerospace

February 27, 2020

When Rachel L. Pope joined The Aerospace Corporation in Colorado Springs, she already knew she was joining a company with a rich culture of mentoring.

"I was an intern for two summers and my mentors as an intern were the reasons that I came back as a full-time employee," said Pope, an MTS Associate in the System of Systems Engineering Office. "Aerospace employees are very welcoming, helpful, and knowledgeable."

With nearly 60 years of technical knowledge within the hallways and labs, Aerospace employees have access to a wealth of information and experience shared among their fellow engineers and scientists.

That is what Furqan L. Chiragh, Engineering Specialist in the Communications and Signals Analysis department in Chantilly found when he joined Aerospace.

"I've been at Aerospace for 11 months and during my time here I have been told a lot about the mentoring culture," said Chiragh. "That culture is one of passing valuable information from the more senior personnel to the newcomers. As a new employee, I am looking for opportunities to develop myself and to take increasingly important future roles with the company. The mentoring opportunities at Aerospace will allow me to do so."

Mentoring opportunities have existed at Aerospace for decades in formal and informal settings. The Aerospace Mentoring Initiative (AMI) was first established in 2010 to aid employees interested in being a mentor or a mentee by providing appropriate training, with a goal of reinforcing our corporate value "Commitment to Our People" by "helping create an environment that encourages employee growth."

Marilee Wheaton, former Executive Director for The Aerospace Institute, oversaw the initial AMI implementation, which is now being relaunched to help foster these types of meaningful relationships. Wheaton recalls that "the success of the AMI was due to the strong grass roots efforts by a team of almost 50 employees who volunteered their time and talents over a period of several months to develop the original concept and artifacts. AMI team members, whose experience spanned from early career through mid-career and senior level, all had a real passion for the importance and value of mentoring, and a shared desire to contribute to enriching careers for all Aerospace employees."

Creating a culture that encourages mentoring is key, according to Karolyn D. Young, Principal Engineer/Scientist in the Systems Engineering Division Office. Young was a lead/co-chair of the initial AMI effort. She encourages Aerospace managers and staff to actively foster mentoring relationships.

"A culture in which mentor/mentee relationships flourish will be essential to Aerospace's survival and vital to mission success," said Young. After a brief time of dormancy, the program is now being relaunched to help employees foster these types of meaningful relationships.

Employees like Chiragh and Pope are encouraged by the mentoring opportunities at Aerospace and are looking for a more formalized mentoring relationship. Chiragh recently completed "The Successful Mentee" training offered by Aerospace University and is actively seeking a mentor.

"Mentorship is something that was not available to me in my previous job and I was frustrated by not having insight into how to develop myself for growth in the company," said Chiragh. He hopes having a mentor at Aerospace will help him grow technically and culturally.

"I foresee a relationship with my mentor where I can gain valuable insight as to how to develop my technical skillsets for the best deliverable products for Aerospace's customers while also learning how to navigate the Aerospace culture," said Chiragh.

Like Chiragh, Pope also hopes to find a mentor who can offer guidance and help foster her career at Aerospace.

"I hope that I will find a perspective that does not typically come from a manager or our performance processes," said Pope. "I look forward to hearing advice when I run into difficult situations. I want to learn where my career could take me and what opportunities are and will be available to me."

Aerospace remains committed to helping employees find a mentor or assist them in becoming one. In fact, additional investments in mentoring opportunities are in development.

If you are interested in becoming a mentor or mentee, visit the Aerospace Mentoring Initiative website for more information.

Aerospace Engineer Competes in Olympic Trials

February 25,
2020

Aerospace employee Jonathan Aziz is running down a dream.

On Saturday, Aziz, an Astrodynamics and Mission Design Analyst in Colorado Springs, will partake in the Olympic Marathon trials in hopes of representing the United States at the 2020 Olympic Games in Tokyo, Japan. Only 250 runners from around the country qualify for the trials in Atlanta where they will compete for three spots on Team USA.

Aziz's passion for running began in seventh grade, where he joined the school track team, and continued through his undergrad work at Syracuse University as a member of the Syracuse Cross Country and Track and Field teams.When Aziz moved to Boulder for his graduate studies at the University of Colorado, he found two things: a large running community in the Boulder Track Club and a new running goal.

"The Olympic Trial marathon was not something on my radar until I moved to Boulder," Aziz said. "Seemingly everybody in the running community was captivated by it. That was the goal to shoot for."

Inspired by a roommate who qualified for the 2016 Olympic trial, Aziz began to prepare himself for his own attempt. After completing marathons in 2017 and 2018, his running career suffered a setback when an injury sidelined him during preparations for the Chicago Marathon in 2019.

"Five or six weeks ahead of the Chicago marathon I went to run a tune-up half-marathon in Philadelphia," Aziz said. "Just before halfway I pulled my soleus, the result of running through a nagging Achilles injury."

Aziz spent the rest of 2019 training. He assembled a support staff from other members of the Boulder Track Team, including a strength coach and massage therapist and has focused on rehabbing through physical therapy. "We get a lot of physical therapy appointments covered by the Aerospace health plan. They love me over there," he laughed.

His aerospace industry background helps him in another way: data. He regularly analyzes his running stats with an engineer's eye for data. "I love looking at the stats I get from my GPS watch and how that goes into

my training log," Aziz said. "I look at the progression of how I perform in workouts week to week. Am I struggling to hit my paces? Am I hitting even better paces at the same workout? And I love clicking around the map and looking at elevation profiles and routes."

With the trial looming, Aziz is currently running anywhere from eight miles before work and six miles in the afternoon. Long runs could stretch 22 to 23 miles. He is also working on his game plan. While he set a personal record of 2:16:36 at the California International Marathon, it came on a notoriously fast course in contrast to the challenging hills of the course he'll face in Atlanta. With that in mind, he is focused on beating competitors, not the clock.

"What I've set out as my main goal instead is to beat my seed where I'm ranked going in," Aziz said. "I want to beat the people who I am supposed to beat and then beat some more people who I'm not predicted to beat."

Regardless of what happens, Aziz already plans to be back for the 2024 trials.

"My drive to be more than a one-trick pony and Dad's influence to give any pursuit 100-percent enthusiasm and effort, and do it correctly with no shortcuts, have fostered a belief that you should be 'all-in' on multiple fronts," said Aziz. "Right now, that is Aerospace and running."

Aerospace Employees Share Their Visions of the Future by Spinning the Wheel of Foresight

February 25,
2020

The Aerospace Career Development Club (ACDC) teamed up with the Strategic Foresight CSI to set up the thought-provoking "Wheel of Foresight" in AGO A3 Cafeteria on February 12th. Aerospace employees were invited to stop by during the lunch hour to share their thoughts and sketch out what they imagined the future would look like for the space enterprise.

The Wheel of Foresight featured many questions and scenarios based on formal foresighting techniques to the attendees who dared to spin the wheel. Some were asked "What if" questions like "What if cryptocurrency became the world standard? How would it affect the economy?" or "What happens if global instantaneous information transmission is realized?" Others were asked to consider a mashup scenario, in which Elon Musk was able to get to Mars and cookies are baked in space (per recent experiment on the ISS). Someone answered that Elon would probably launch "Red Planet Cookies" in the latest Martian-edition Tesla to deliver to other planets!

After answering the questions posed by the Strategic Foresight Team, the attendees wrote their thoughts on whiteboards, creating a real-time exhibit of thoughts collected on the future. For their efforts, attendees were rewarded with cool space swag, such as space-theme enamel pins, cricket chips: "the food of the future," and space tourism posters. At the neighboring tables, guests drew what they thought the future would look like and included a short description. These doodles of space avatars, inflatable satellites, and sailboats on Titan's moons were showcased on a whiteboard for all passersby to see.

The future is not shaped passively. We have to dream and imagine futures, so we can achieve preferred futures. Brainstorming activities such as this one, while seemingly frivolous, are an essential first step in creating a better future. Consequently, the Wheel of Foresight demonstrated just how curious and creative Aerospace is in imagining the future!

While we do not know what the future will hold with exact certainty, by engaging in these thinking-outside-the-box exercises, Aerospace can prepare and participate in shaping the future of the space enterprise.

Gen. Lyles Keynote Evokes MLK's "Fierce Urgency of Now"

by **Conor Shine**
February 24, 2020

Retired Air Force General Lester Lyles visited The Aerospace Corporation last week, delivering a keynote address during African-American History Month that wove together his personal history, reflections on the importance of voting rights and lessons learned from his long career in the military and space industry.

Lyles, who served as commander of the Space and Missile Systems Center from 1994 to 1996, recounted attending the March on Washington in his hometown of Washington D.C. as a 17-year-old and hearing Dr. Martin Luther King Jr. deliver his "I Have a Dream" speech.

Speaking to dozens of Aerospace employees last Thursday, Lyles recalled King's words about the "fierce urgency of now" and related them to the continued struggle to ensure voting rights for all, particularly African Americans and other minorities. The theme for this year's African-American History month is "African Americans and the Vote" in recognition of the sesquicentennial of the ratification of the Fifteenth Amendment, which granted black men the right to vote, in 1870.

"It's a reminder that we can't rest on our laurels. You have to make sure you don't just assume things will always be good and apply gradualism instead of attacking things head on," Lyles said as he recounted declining voter participation in recent elections. "My fear is those statistics are likely to get worse unless we ensure people are conscious of what the situation is and take positive acts to make sure those statistics go up."

During his speech, Lyles traced his career from an initial Air Force assignment in Los Angeles to eventually serving as the Vice Chief of Staff of U.S. Air Force and as Commander at the Air Force Materiel Command at Wright-Patterson Air Force Base.

After retiring from the military, Lester has served in a number of roles in government and private industry, including as Chair of the NASA Advisory Council and as a member of the User Advisory Group to the National Space Council.

Thursday's event was co-hosted by the Aerospace Black Caucus and Aerospace Military Veterans. ABC will host its annual jazz brunch on Feb. 27 featuring Da'Breeze Jazz Band. Earlier this month, the group hosted the Robert H. Herndon Black Image Award ceremony.

Shining A Light to Space With a New Ground Beacon

February 10, 2020

They call it the mohawk. A pair of curved metal fins, each sporting a dozen laser diodes, that collectively are capable of blasting 800 watts of light bright enough to be seen by spacecraft passing overhead.

The durable, heat-controlled beacon can be mounted to a trailer that allows for mobile deployment wherever it's needed for calibration and validation of space assets.

And when you're dealing with that much power, there's bound to be lots of heat, which could hurt the performance and lifespan of the beacon if left unaddressed.

That challenge led a team of Aerospace engineers to come up with a novel approach using an array of off-the-shelf parts to create a beacon that meets the mission specifications in a cost-effective – and quickly manufacturable – manner.

"It's like a spotlight," said Dan Mabry, director of xLab's Electrical and Software Engineering department. "The idea was to make this cheap so if they want another one and another one, we can do it fast."

Read more about the beacon here.

Two Aerospace Employees Recognized With Herndon Awards

February 05, 2020

As an engineer, a mentor and a humanitarian, Robert Herndon blazed trails during the course of his career at The Aerospace Corporation, advancing to the top of his field as a black engineer in the wake of the civil rights movement and working to ensure greater opportunities for those who came after him.

After starting in 1961 as a structural engineer, Herndon advanced to become the group director of the Advanced Mission Analysis Directorate, where his work included helping Aerospace carry out system studies for NASA. He also played a key role in efforts to foster equal opportunity with Aerospace and the broader industry.

While Herndon's ascent was cut short following his death in 1976, his spirit and dedication to helping others lives on.

On Monday, Aerospace honored those who are carrying forward Herndon's legacy at the annual Robert H. Herndon Black Image Award ceremony, which recognizes African-American employees who exemplify professional and humanitarian qualities at the individual, corporate and community levels.

“We are proud to celebrate Robert Herndon’s legacy annually by recognizing our best and brightest colleagues who exemplify Mr. Herndon’s exceptional work ethic, humanitarian spirit and tireless dedication to the community,” said Sherreth Vaughan, National President of the Aerospace Black Caucus.

Two Aerospace employees were recognized at the ceremony, which was attended by Aerospace employees, executives and Herndon’s granddaughter Jessica Herndon and her family.

Jerome Johnson is a Senior Contracts Manager in the Civil Systems Group, where he is the primary point of contact for several NASA and Civil contracts.

After graduating high school, Johnson enlisted in the U.S. Air Force and later served in the Air Force Reserves. He received a bachelor’s degree from Norfolk State University and a masters degree from Northrop University before embarking on a career as a contract management professional.

He’s spent 30 years in the space industry, including at Aerospace, NASA’s Jet Propulsion Laboratory and Raytheon.

At Aerospace, Johnson serves as leader and mentor, helping interview, hire and develop interns and junior staff, as well as actively participating in the ABC and the Aerospace Military Veterans group. He further shares his knowledge as an Adjunct Professor in government contracts at Webster University.

Outside of work, Johnson is a longtime docent at the California African American Museum and an active member of Toastmasters International and other professional organizations. He also enjoys spending time with his family and traveling.

In his remarks, Johnson spoke about the importance of commitment to whatever you’re doing, a value he first learned when he enlisted in the Air Force.

“In order to be committed to something, you cannot be selfish,” he said. “Looking back over my career in the military and my civilian body of work, my unselfish commitment to serve has been at the forefront of my being.”

Dr. Mark McKelvin Jr. is a Senior Engineering Specialist in the Systems Engineering and Launch Division, where he works to infuse model-based systems engineering practices into space systems development.

McKelvin graduated from Clark Atlanta University and later received his Ph.D. in Electrical Engineering and Computer Sciences from the University of California, Berkeley.

After starting his career at NASA's JPL, McKelvin joined Aerospace, where he has contributed significantly to the training and practice of MBSE and digital engineering across the corporation.

He has authored several internal and external publications on modeling, analysis verification and design methodologies for cyber-physical systems, and further shares his knowledge by serving as president of the Los Angeles chapter of the International Council on Systems Engineering.

McKelvin is active in volunteer efforts to engage kids with STEM subjects, leading pop bottle rocket experiments and teaching the basics of computer programming to middle and high school students.

He has also produced a YouTube video that introduces engineering to students and is an instructor at the University of Southern California in the Systems Architecting and Engineering program.

Outside of work, he coaches Little League softball, enjoys playing basketball and riding his motorcycle and spends time with his wife and two daughters.

McKelvin shared advice he received from a mentor while still in college about the importance of hard work and resilience.

"You must be resilient because life will be tough, sometimes due to an unjust cause," McKelvin recalled. "[He] was teaching me the lessons of life and the burdens I would have to bear as a black engineer. It is that burden that keeps me motivated and inspired to do great things no matter where I'm at."

McKelvin will also be honored later this month at the Black Engineer of the Year Awards with the Most Promising Engineer in Industry Award.

Black History Month Continues

Monday's Herndon awards ceremony was the first of several events planned for Black History Month, which this year marks the sesquicentennial of the passage of the Fifteenth Amendment, which granted black men the right to vote.

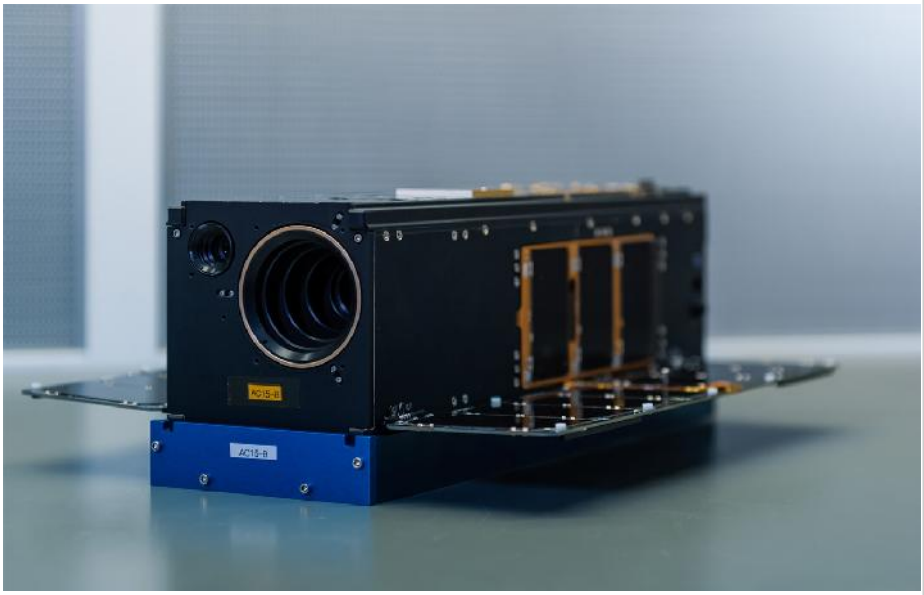
On Feb. 20, General Lester L. Lyles will be the keynote speaker at an event organized by the ABC and AMV. And on Feb. 27, the ABC will host the annual Jazz Brunch.

Aerospace President and CEO Steve Isakowitz provided closing remarks at Monday's Herndon ceremony, reflecting on the example set by Herndon and the continuing efforts at Aerospace to build and support a diverse workforce.

"Commitment to our people is about commitment to all our people. Aerospace not only recognizes the significance of diversity and inclusion but actively works to promote them across our company," Isakowitz said. "Diversity isn't something that's handed to you, it's something you have to work hard at every day…We need to do more, just as Robert Herndon always did more."

New AeroCube Experiments, STP-Sat4 Successfully Deployed to Orbit

February 03, 2020



After several months docked at the International Space Station, a pair of Aerospace AeroCube experiments were successfully delivered to their operational orbits on Friday.

A separate satellite that featured extensive work from Aerospace employees, Space Test Program Satellite-4, also deployed last week from the International Space Station.

AeroCube-14 and AeroCube-15 were launched in November on board Northrop Grumman's Antares Cygnus launch vehicle as part of the NG-12 Commercial Resupply Mission. Friday's low-earth orbit deployment marks the start of their mission experiment plan.

AeroCube-14 consists of a pair of identical 3-unit cubesats built by Aerospace engineers as part of the National Reconnaissance Office's IMPACT program, led by the Advanced Systems and Technology directorate. The program is a research and development effort to evaluate new technologies in space.

AeroCube-14's experiments include nanotechnology payloads that will test new and emerging materials, including structural materials and thermal straps, in a space environment. Click here to read more about the AeroCube-14 mission.

AeroCube-15, also known as the Aerospace Rogue Alpha/Beta CubeSats, was built and launched on a compressed timeline of just 18 months, serving as a pathfinder for studying rapid reconstitution. Click here to read more about the Aerospace Rogue Alpha/Beta mission.

While meeting the launch deadline was the primary goal, the Aerospace Rogue Alpha/Beta CubeSats will provide valuable data while on orbit during their 12-month mission, where they'll observe cloud backgrounds and ground targets to research the capabilities of commercially derived technology for space mission applications.

The successful deployment of AeroCube-14 and AeroCube-15 brings the total number of Aerospace CubeSats on orbit to 25.

Aerospace employees also had a hand in the development of another satellite that was deployed from the International Space Station on Jan. 29 after launching as part of the same NG-12 mission in November.

The STPSat-4 is the latest spacecraft in the Space Test Program and carries five Space Experiment Review Board payloads.

STPSat-4 is a collaborative effort between the Department of Defense Space Test Program, the Air Force Research Laboratory, the Aerospace Corporation, the Space and Naval Warfare Systems Command, the U.S. Air Force Academy, U.S. Naval Observatory, National Aeronautics and Space Administration, and aerospace industry partners. It's experiment objectives range from Atmospheric/Space Weather, Space Domain Awareness and Materials Science and Technology Demonstrations.

It is the first satellite placed into orbit by the United States Space Force.

Aerospace employees were integrated with the satellite construction team, utilized extensive ETG resources and also provided tailored mission assurance. It's the first free-flyer satellite built on-site by the Space Test Program-Houston team.

Read more about STPSat-4 here.

February 2020 Obituaries

February 01, 2020

Sincere sympathy is extended to the families of:

- **Earl Eakle,** member of administrative staff, hired April 13, 1963, retired Nov. 1, 1991, died April 16, 2019
- **Joseph Hubbard,** member of technical staff, hired June 26, 1969, retired Jan. 1, 1989, died Dec. 25, 2019
- **Raymond Knauss**, member of technical staff, hired Oct. 12, 1970, retired Nov. 1, 1991, died Jan. 4, 2020
- **James McCurry,** member of technical staff, hired Aug. 29, 1960, retired May 1, 1990, died Dec. 21, 2019
- **George Rohrer,** member of technical staff, hired July 28, 1964, retired Sept. 1, 1989, died Jan. 8, 2020

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

These articles are reprinted from The Orbiter, a publication of The Aerospace Corporation 2310 E. El Segundo Blvd., El Segundo, CA 90245-4691 310-336-5000
Visit: Aerospace.org
Contact Orbiter staff: Orbiter@aero.org