

2nd Circle-A Q&A Set for April 25

April 18, 2019

President and CEO Steve Isakowitz will host the second Circle-A Q&A live webcast on Thursday, April 25, from 10 a.m. to 10:30 a.m. Pacific time. He will be responding to employee questions submitted ahead of time and live during the webcast.

Circle-A Q&A was created as a result of feedback provided from the Pulse employee engagement survey in January, which found that employees wanted to hear more frequently from the CEO and other corporate officers about topics of interest to employees.

Employees can submit questions by going to the following link:



Sabrina Steele, executive director of the Corporate Communications and Public Affairs Division, presents questions to CEO Steve Isakowitz during the March Circle-A Q&A. (Photo: Lester Chung)

Artificial Intelligence Takes on Asteroids

April 23, 2019

It's a classic science fiction storyline: An asteroid is on target to smash into Earth and send humans the way of the dinosaurs. It's not total fantasy. In 1908, a meteoroid slammed into Russia near the Tunguska River in Siberia and destroyed an area the size of Manhattan. Most recently, an asteroid roughly the size of a six-story building broke up over Chelyabinsk, Russia in 2013 causing widespread damage and creating reverberations detected as far away as Antarctica.

These space objects are currently monitored by NASA's Planetary Defense Coordination Office, which uses a series of telescopes to monitor the skies to locate moving objects, track them and identify any that might collide with our planet. Every night at locations such as the Catalina Sky Survey, located on Mount Lemmon in Tucson, Arizona, researchers pour over hundreds of images of star fields pulled from telescopes in search of fast-moving objects that might need to be flagged for further scrutiny.

A team from The Aerospace Corporation's Artificial Intelligence Analytics and Innovation Department spent time observing scientists at the Catalina Sky Survey facility to see if artificial intelligence could help speed up the process. Aerospace AI engineers including Dr. Jon Neff, Dr. Nick Perlongo, Anatoli Zaremba, and Collin Erickson, used 100 terabytes of data provided by the Catalina Sky

Survey team to build and train an artificial intelligence model to correctly identify moving objects from false positives. The result, called NEO AID (Near Earth Object Artificial Intelligence Detection), is now being tested at Catalina Sky Survey. Initial analysis appears to increase performance by ten percent and Aerospace engineers are confident that the end results could be even higher.

“What AI is good at is looking at a lot of data and making really fast analysis once it’s correctly trained,” explains Zigmond Leszczynski, Systems Director for The Aerospace Corporation’s Artificial Intelligence Analytics and Innovation Department. “If we can help humans sift through all that data and rapidly pick out of that star field what are the most important things, then we’re working with the humans and their system and giving them that boost.”

[Click here](#) to read the rest of the story.



NASA'S Planetary Defense Coordination Office uses the Catalina Sky Survey facility in Tucson, Arizona, to catalog space objects. (Photo: Catalina Sky Survey)

Aerospace Wraps Up Successful Trip to Space Symposium

April 17, 2019



Dr. Fred Kennedy, Director of Space Development Agency; Jamie Morin, Vice President, Defense Systems Operations; Lt. Gen. John Thompson, Commander, SMC.

The Aerospace delegation at the 35th Space Symposium was busy throughout the week as company employees met with colleagues from other organizations, participated on panels, and in general focused on building partnerships, both nationally and internationally, to deal with threats to space assets.

Various Aerospace representatives were also interviewed by media members — a total of eight interviews were held with outlets, including Aviation Week, Politico, Wired, Space News, and Agence France Presse.

Dr. Jamie Morin chaired a panel on Enterprise Disruption and chatted with Dr. Fred Kennedy, who has been tapped to lead the new Space Development Agency. Space and Missile Systems Center (SMC) Commander Lt. Gen. John Thompson was in the audience and afterward tweeted that he enjoyed listening to the panel.

iLab and Civil Systems Group on the topic of challenges of getting to the moon and beyond. Panelists included NASA leaders, representatives of commercial organizations, and Aerospace members. David Miller, Randy Villahermosa, and Dean Eppler spoke on behalf of Aerospace. Board of trustees member Bonnie Dunbar attended. The non-Aerospace panelists were particularly focused on what happens on the moon and beyond after 2024, the year that a moon landing is expected.

On the international front, Aerospace co-hosted a workshop with the United Kingdom's Defence Science and Technology Laboratory (DSTL) attended by seven nations to discuss science and technology options in support of the CSPO's efforts. Participants from Australia, Canada, France, Germany, New Zealand, the UK, and the U.S. shared what their countries are doing in this space and what hot areas they would be focusing on in the future with an emphasis on deterring aggression.



Dr. Josh Train and Mikhail Tadjikov hosted demos of Space Cloud, a new artificial intelligence project, at the Aerospace booth.

The Aerospace booth at the convention was popular with an artificial intelligence demonstration called Space Cloud. Aerospace engineers recently developed Space Cloud, an artificial intelligence system that uses modern cloud computing to enable satellites to detect and transmit only meaningful data. Space Cloud teaches satellites to send back information of interest to an analyst and discard the rest.

Elsewhere, Aerospace employees participated in sessions called “tech tracks.” The employees and their topics included:

Karen Jones participated in “Blockchain Technology: Practical Applications in the Space Sector” during the Future Space tech track session. The overview included a description of blockchain or distributed ledger technology and the various types of open and closed ledger systems that might develop.

Josef Koller discussed the concepts of GEOINT Singularity and Regulatory Paradox during his talk, which projected the trends of artificial intelligence and data analytics combined with constellations of communication satellites and real-time monitoring from space. The result could be ubiquitous intelligence available globally to the general population.

Mick Gleason talked about space traffic management standards, guidelines, and best practices and different ways to prioritize their development.



Clockwise from top left: Aerospace team members Ed Swallow, Karen Jones, Dr. Josef Koller and Dr. Mick Gleason spoke at the 35th annual Space Symposium.

By week’s end, the 35th annual Space Symposium saw Aerospace representatives at the center of every aspect of space enterprise—from policy debates and changes in government to discussions on emerging technologies, space travel and thought leadership. Aerospace was everywhere.

D8 Site Council Hosts Tower Competition

April 10, 2019

The D8 Site Council hosted a team-building event on Thursday, April 4. About 130 people attended the “Build it Higher” competition where employees from the D8 building worked in teams of four to create a structure in 20 minutes using only 100 dry noodles, 80 large and small marshmallows, and adhesive tape. The structures had to remain standing until all of the structures were measured.

Six teams participated while spectators enjoyed pizza, cookies, and punch as they watched.

Each team was given identical supplies and were required to have one member from a different division than the rest of the team. Kevin DeBruin of the Systems Engineering Division (SED) was MC for the event.

President and CEO Steve Isakowitz was the judge and awarded first-, second-, and third-prize medals to the winning teams.

The first-prize team, which built a structure 65 inches tall, was: Don Denham, Vehicle Systems Division (VSD); Adrian Sun, Electronics and Sensors Division (ESD); Erin Hong, VSD; and Vi Tran, VSD.

Second-place winners, with a tower 48 inches tall, were: Jonathan Rodriguez, VSD; Dave Well, SED; Pavel Babuska, VSD; and Zachary Fox, VSD.



Aerospace President and CEO Steve Isakowitz, right, measures the height of a competition tower that ended up in second place. Pavel Babuska is at left. (Photo: Elisa Haber)

The third-place medal went to a team with a tower 20 inches high. Members were: Daniel Winton, SED; Donald Yang, ESD; Shayna Goldberg, ESD; and Farah Toosi, ESD.

A New Tool to Fight GPS Jammers

April 12, 2019



The 24 satellites that keep global positioning system (GPS) services running have a higher calling than helping you locate the nearest gas station. The military relies on GPS for everything from ground missions to missile systems and more. The military has grown so dependent on GPS that military personnel and agencies have warned that GPS is at risk for becoming a single point of failure, and armed forces regularly stage drills without it in case the system fails. Civilian life around the world relies on GPS more than we realize.

While those 24 satellites could fail for any number of technological reasons, there is also the fear that GPS access could be blocked by adversaries using jamming technology. An attack like that would impact critical applications in civilian infrastructure — electric grids and ATM networks rely on GPS — and drastically disrupt military operations.

Over the past several years, a team from Aerospace's Communication System Implementation Subdivision has been developing the Blind Interference Signal Suppression (BLISS) technology — which is designed to counter jamming signals that would interfere with GPS reception.

[Click here](#) to read the rest of the story.

Aerospace Goes to Colorado for 35th Space Symposium

April 09, 2019

Aerospace is well-represented again at this year's Space Symposium, the premier space industry policy and program forum taking place this week in Colorado Springs.

Company executives will be conducting media interviews as well as meeting with customers and potential customers in industry and government.

Various Aerospace experts will participate in panels and workshop presentations during the week.

Aerospace also has a booth on the exhibit floor that features a demonstration of the company's work in artificial intelligence.

Want to know more? Follow us on [Twitter](#) @aerospacecorp and [Instagram](#) @theaerospacecorporation.



The Aerospace delegation at Space Symposium. (Photo: Jeffrey Wong)

Strategies to Outpace the Threat Discussed on Capitol Hill

April 02, 2019

"Space is more diverse, disrupted, disordered, and dangerous." — thus Todd Harrison of the Center for Strategic & International Studies framed the urgency driving changes to defense space acquisition at "Strategies to Outpace the Threat: Lessons Learned and New Ideas," a public Aerospace event in the Hart Senate Office Building in Washington, D.C., on March 28, 2019.

This event served as a forum for ideas on accelerating defense space development, including concepts from Project Thor, and as an exposition of the feedback from industry at closed discussions in February at both Aerospace's headquarters and Crystal City location.

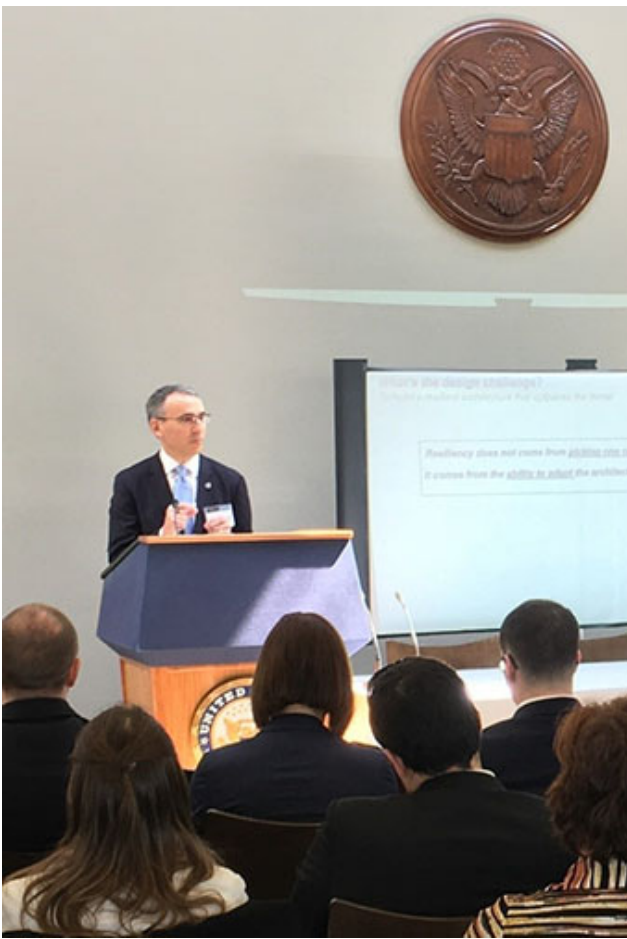
An audience of congressional staff, media members, industry leaders, Department of Defense, NASA, and other government officials, research institute experts, and others listened and reacted to presentations ranging from Harrison's overview of threats from China and Russia to a discussion on the connection between space acquisition and military space and ground operations.

"What happened with Apollo 11? We were in a race with the Soviet Union," said Aerospace President and CEO Steve Isakowitz when asked why he thought well-established DOD space acquisition practices would change. "I think we're in a place like that now."

Isakowitz presented ideas from Project Thor as well as industry feedback on those ideas. He was preceded by Harrison's overview of threats in space from China and Russia, and an explanation of the DOD space budget from Russell Rumbaugh of Aerospace's Center for Space Policy and Strategy.



Command Sgt. Maj. Dennis Riggs of the West Virginia Army National Guard explains the implications of space for special operations. (Photo: Alison Bauerlein)



Steve Isakowitz shares ideas from Project Thor. (Photo: Alison Bauerlein)

The event concluded with a panel discussion connecting space acquisition to operations, both in orbit and on the ground. The panel was moderated by CSPS Executive Director Jamie Morin and included an Air Force space acquisition expert, an Air Force space systems operator, and a senior enlisted Army National Guard Special Forces operator.

"At a tactical level, we lose focus on what space is providing us," said Command Sgt. Maj. Dennis Riggs, 2nd Battalion, 19th Special Forces Group, West Virginia Army National Guard. "But I'm hearing acronyms and concepts about acquisition and space that I didn't know four or five years ago that I do understand now. We're moving so far forward in terms of taking the warfighter out of his or her environment to spend time with a developer of a piece of kit."

Lt. Col. Dan Walter, Chief, Frontiers Division, Space and Missile Systems Center, echoed the need for collaboration between space development and terrestrial operations. "We need to develop space capabilities on the ground, alongside the warfighter," Walter said.

"When it came to requirements and acquisition, I didn't understand why the process was so laborious," said Col. Lorenzo "Che" Bradley, Chief, Space Superiority Division, Strategic Plans and Requirements Directorate, USAF. Prior to his recent assignment to the Pentagon, Bradley was the operations group commander for the 460th Space Wing, where he and his airmen found novel ways to use missile warning systems to support ground operations but also felt that it took too long to operationalize new ideas.

"I implore those in a position to do something about it to flatten this acquisition process," concluded Bradley.

April 2019 Obituaries

by Christine T Kato
April 01, 2019

Sincere sympathy is extended to the families of:

Ernest Baldini, member of technical staff, hired June 12, 1962, retired Aug. 1, 1986, died March 4, 2019
Samuel Claridge, Jr., office of technical support, hired May 19, 1969, retired Feb. 1, 1986, died Feb. 17, 2019
Lawrence Cothran, member of technical staff, hired Aug. 24, 1981, retired June 1, 2009, died Feb. 17, 2019
Donald Davies, member of technical staff, hired Sept. 17, 2007, died March 4, 2019
David Johannsen, member of technical staff, hired Aug. 17, 1987, died March 16, 2019
Helen Siegner, office of technical support, hired Jan. 21, 1963, retired May 1, 1981, died Jan. 17, 2019
Melvin Sweet, member of technical staff, hired Feb. 17, 1981, retired Nov. 1, 2007, died Feb. 13, 2019
Joseph Thames, Jr., member of technical staff, hired Sept. 2, 1980, retired Sept. 1, 2003, died March 1, 2019
Wai Wong, member of technical staff, hired Sept. 10, 1973, retired Nov. 1, 2004, died Feb. 21, 2019

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