

YOUTH ACCESS TO AMERICAN JOBS IN AVIATION TASK FORCE (YIATF) MEETING AGENDA

*March 31, 2021 *** 9:00 AM to 3:30 PM EDT*

Topic	Facilitator
Call to Order Federal Advisory Committee Act (FACA) Official Statement Welcome/Opening Remarks	Angela Anderson Designated Federal Officer
Open Meeting Adoption of October 2020 Minutes	Sharon DeVivo YIATF Chair
SUBCOMMITTEE UPDATES	
<i>Trends</i> Speakers: <ul style="list-style-type: none"> • Brett Levanto • Kasey Herzberg • Cyd Smith 	Yvette Rose Subcommittee Chair
<i>Awareness Building</i> Speakers: <ul style="list-style-type: none"> • Whitney Dix • Jennifer Henderson • Stacey Bechdolt • Amy Voss 	Joey Colleran Subcommittee Chair
Break	
<i>Funding</i> Speakers: <ul style="list-style-type: none"> • David Purser • John Huff • Tamera Holmes 	Dr. Ralph Coppola Subcommittee Chair
<i>Expanded Pathways</i> Speakers: <ul style="list-style-type: none"> • Dr. Nancy Shane Hocking • James Hall • Joel English • Jo Damato • John Hornibrook 	Ryan Goertzen Subcommittee Chair
Lunch Break	
GUEST SPEAKERS	
AVSED Overview	Sean Torpey
New Newsletter Covering National Aviation/ Aerospace Workforce Development	Kathryn Creedy
Civil Air Patrol - Aviation Education and Outreach	Dr. Jeff Montgomery

Exploring Other Entry Points: Black Girls Who Drone	Ernanda White
Exploring Other Entry Points: Embraer-Elevate (Urban Air Mobility)	David Rottblatt
Break	
Public Speaker Statement	Sharon DeVivo
Subcommittee Open Discussion & Action Item Review	Sharon DeVivo
Adjourn Meeting	Sharon DeVivo and Angela Anderson

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Youth Access to American Jobs in Aviation Task Force (YIATF)

10/16/2020 YIATF Virtual Meeting • Washington, DC

Meeting Minutes

Date: Friday, 10/16/2020
Time: 9:00am to 2:00pm Eastern
Location: Virtual
Recording: [Youth Access to American Jobs in Aviation Task Force Recording](#)
[Youth Access to American Jobs in Aviation Task Force Recording: Afternoon Session](#)

Youth Access to American Jobs in Aviation Task Force (YIATF) Members:

<u>YIATF Member</u>	<u>Attendance at the 10/16/2020 Meeting</u>
Amy Voss	Present
Brett Levanto	Present
Captain Jennifer Henderson	Present
Cyd Smith	Present
David Purser	Present
Dr. Joel English	Present
Dr. Nancy Shane Hocking	Present
Dr. Ralph Coppola	Present
Dr. Sharon DeVivo	Present
James Hall	Present
Joanne Damato	Present
Joey Colleran	Present
John Huff	Present
Kasey Herzberg	Present
Ryan Goertzen	Present
Stacey Bechdolt	Present
Tammera Holmes	Present
Whitney Dix	Present
Yvette Rose	Present

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Non-Member Presenters:

<u>Name</u>	<u>Affiliation</u>
Elaine Chao	Secretary, United States Department of Transportation (DOT) (presented via video recording)
Daniel Elwell	Deputy Administrator, Federal Aviation Administration (FAA)
Alexandra Randazzo	Office of Chief Counsel, FAA
Angela Anderson	Designated Federal Officer (DFO) for the YIATF; Senior Advisor to the Assistant Administrator of Human Resource Management, FAA
Elizabeth Tennyson	Executive Director of “You Can Fly” for the Aircraft Owners and Pilots Association (AOPA)
Vanessa Blacknall-Jamison	Chair of the Organization for Black Aerospace Professionals (OBAP)
Kenneth Morris	Executive Director for the Aviation Community Foundation (ACF)
Dr. Rebecca Lutte	Associate Professor; the University of Nebraska at Omaha Aviation Institute; Texans for General Aviation
Stephanie Ward	Manager for Aviation Planning at Mead & Hunt

Meeting Summary

The objectives for the meeting were as follows:

- Establish a YIATF baseline
- Introduce members of the Task Force and discuss their interest in YIATF
- Provide an overview of Federal Advisory Committee Act (FACA), including roles and responsibilities
- Discuss governance

Prior to the official start of the meeting, the FAA officials shared that the meeting was being livestreamed. The video will be posted online along with relevant meeting materials.

Angela Anderson, YIATF DFO, opened the first meeting at 09:00 AM on October 16, 2020.

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Dan Elwell, FAA Deputy Administrator, gave his opening remarks and thanked board members for serving on the YIATF. He highlighted the importance of the Task Force to the future of the industry and emphasized the top priorities for the YIATF going forward.

Deputy Administrator Elwell then gave a brief description and introduction of DOT Secretary Elaine Chao. The Board watched her welcome message video. Secretary Chao congratulated members and YIATF chair Dr. Sharon DeVivo on their selection to the Task Force. Secretary Chao outlined the challenges associated with industry workforce shortages and emphasized the role of the Task Force in addressing those challenges and identifying solutions.

Deputy Administrator Elwell then introduced and provided background on Dr. DeVivo, who is also President of Vaughn College of Aeronautics and Technology. Dr. DeVivo thanked Deputy Administrator Elwell and the FAA for their support. She highlighted the breadth of jobs in the aviation industry.

DFO Anderson then provided welcoming remarks and background on the formation of the YIATF.

Dr. DeVivo welcomed everyone to the first public meeting of the YIATF. She underscored the wide variety of viewpoints present on the Task Force that will help raise awareness of the industry challenges. Dr. DeVivo outlined the timeline for and goals of the Task Force.

DFO Anderson provided the statement required by FACA. Alexandra Randazzo from the FAA Office of Chief Counsel then reviewed the policies and procedures associated with FACA guidelines and compliance.

The Task Force took a 10-minute break.

After the break, Dr. DeVivo invited board members to introduce themselves and provide their background and goals for joining the Task Force.

Dr. DeVivo outlined the four subcommittees that comprise the Task Force. She read the specific charge for each subcommittee, introduced members, and invited subcommittee members to provide input. Then she opened the floor for suggestions and discussion regarding the goals for subcommittees before pausing the meeting for lunch.

After the lunch break, Dr. DeVivo introduced the panel focused on understanding the barriers and the needs for successful youth in aviation programs. After the panel finished presenting its research and findings, Dr. DeVivo thanked the members and panelists for their participation in the meeting and opened the floor for discussion to address any lingering questions or introduce additional topics.

DFO Anderson then gave closing remarks and the meeting concluded.

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Detailed Minutes

DFO Opening Remarks

DFO Angela Anderson started her opening remarks by welcoming everyone to the first YIATF meeting. She mentioned that the meeting is hosted on the Zoom platform and is streamed on FAA's YouTube, Facebook, and Twitter livestreams. DFO Anderson advised any reporters watching the livestreams that all discussions were for background only. She then introduced Deputy Administrator Dan Elwell for his opening remarks.

Deputy Administrator Opening Remarks

Deputy Administrator Elwell began his opening remarks by thanking everyone for joining the first YIATF meeting. He emphasized the importance of recruiting the next generation of aviation professionals and reaching them at a young age. He recalled his inspiration in joining the industry at the age of eleven, experiencing his first flight. He shared that his experience at that young age led him to join the Air Force and ultimately to become a commercial pilot. He stressed the importance of having a defining moment that sets youth on a path to join the industry and stated that in today's world, youth are interested in other things because they have not experienced the wonder of flight. He then highlighted how technology has opened the doors for the addition of more industry careers. He underscored the need to develop pathways into the industry and highlighted the different ways that the industry could get more youth involved through scholarships, new curriculum, and initiatives. He shared the story of Caleb from Georgia, who at the age of twelve was studying aerospace engineering at Georgia Technical University. He said that Caleb's story is a great example of how the younger generations can shape the future of the industry.

Mr. Elwell then pivoted to highlight the FAA initiatives geared towards reaching students across the country. He mentioned the Adopt-A-School Program, the Airport Design Challenge, the FAA college internship program, and grant programs to support careers in the industry. Mr. Elwell emphasized that the board members were chosen because of their diverse backgrounds in the industry and noted that they will have a heavy hand in improving the workforce outlook in the industry. He then introduced DOT Secretary Elaine Chao and her welcome video recording. Before playing Secretary Chao's welcome video he highlighted that Secretary Chao is the first Asian-American woman to be appointed to the President's Cabinet in American history, and that she served as the nation's Secretary of Labor under a previous administration and has had a distinguished career in transportation's public and private sectors.

Secretary Elaine Chao Welcome Video

U.S. DOT Secretary Elaine Chao thanked members for serving on the Task Force and highlighted Dr. Sharon DeVivo's role as Chair. She shared that the aviation industry produces 1.6 trillion dollars for the United States economy and is responsible for employing 10.6 million people. She stated that despite the drawbacks of COVID-19, the industry still needs to produce jobs in a number of fields. Secretary Chao said fewer students are entering the industry pipeline, but she is hopeful that the Task Force will develop helpful suggestions to encourage more students to pursue aviation-related curricula. She said that through programs like Aviation Career Education (ACE), the DOT invests in developing the workforce of the future. Secretary Chao closed the message by saying that the Department is looking forward to the Task Force's recommendations, and thanked members again for serving.

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YIATF Chair Introduction

Deputy Administrator Elwell introduced Dr. Sharon DeVivo as the YIATF Chair. Mr. Elwell underscored Dr. DeVivo's accomplishments as the first female President of Vaughn College of Aeronautics and Technology, as well as her Master of Arts degree in public communication from Fordham University and a doctorate in Higher Education from the University of Pennsylvania. He shared that the opportunities Dr. DeVivo gives to her students are the same opportunities that the Task Force wants to give students across the country. Mr. Elwell then gave the virtual floor to Dr. DeVivo.

Dr. DeVivo thanked Deputy Administrator Elwell and Secretary Chao before highlighting the level of support the FAA is providing the Task Force. She stated that there is a wide variety of jobs available in the industry and said that she is honored to be selected as the Task Force's chair. Dr. DeVivo then asked Angela Anderson to introduce herself as the DFO for the Task Force.

Welcoming Remarks in Concert with Requirements by FACA

DFO Angela Anderson introduced herself as Senior Advisor to the Assistant Administrator of Human Resource Management at FAA and the DFO for YIATF before reading the welcoming remarks:

The YIATF is a newly created federal advisory committee formed in response to the FAA Reauthorization Act of 2018. Section 602 of the Statute stated that the Task Force will develop and submit recommendations and strategies to the FAA Administrator. Those strategies will focus on three areas. One of those areas is to facilitate and encourage U.S. high school students, beginning in their junior year, to enroll in and complete career and technical educational courses, including STEM. That would then prepare them to enroll in a course of study related to an aviation career at an institution of higher education, which includes community colleges and trade schools. The second aspect to focus on is for students to enroll in a course of study related to aviation careers including manufacturing, engineering, and maintenance. The third aspect is to identify and develop pathways for those students who complete a course of study related to aviation careers. One of the key aspects is to secure apprenticeships, workforce development programs, or careers in the U.S. aviation industry. Once they develop these recommendations and strategies the Task Force should identify trends that encourage or discourage youth in the United States. They should also consider how the FAA, air carriers, aircraft powerplant and avionics manufacturers, aircraft repair stations, and other aviation stakeholders can coordinate efforts to support youth. They will identify methods of enhancing aviation apprenticeships, job-skills training, mentorship, education, and outreach programs that are exclusive to youth in the United States. Finally, identify potential sources of government and private sector funding, including grants and scholarships that may be used to carry out recommendations and strategies to support youth. The different companies that the Task Force represents are: air carriers, air craft powerplant and avionic manufacturers, aircraft repair stations, educators at the local and high school levels, institutions of higher education including community colleges and trade schools, and other aviation and education stakeholders.

DFO Anderson then gave the floor to Dr. Sharon DeVivo.

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Dr. DeVivo shared her excitement in working with the talented group. She stated that the Task Force represents a wide variety of viewpoints, working to raise awareness and desire in the next generations to pursue a career in aviation and aerospace. She highlighted the support provided by the FAA and stated that the goal of the Task Force is to provide recommendations and strategies that facilitate and encourage students to pursue studies and a career in aviation in aerospace. Dr. DeVivo pointed out that the Task Force has a year to provide these recommendations, and shared her enthusiasm in being able to work with the Women in Aviation Advisory Board (WIAAB) to share information, as their goal is to encourage women and girls to pursue careers in the industry. She stated that before the pandemic, the industry faced a need for qualified employees for the next 20 years based on reports from Airbus and Boeing. These reports identify the need for talent to meet the demand and many people are already working to expand the pipeline to include opportunities for underserved populations like minorities and women. Dr. DeVivo stated that parents and students want to know that aviation and aerospace are high-tech, in-demand fields with well-paying jobs and solid career outlooks. While much of the industry is under severe financial stress due to the pandemic, the latest Boeing outlook points to the longer-term workforce shortage as a problem. She said the efforts of the Task Force come at the perfect time to have a significant long-term impact on the continued growth of the workforce and industry. She then quoted the Boeing report, summarizing the points she previously raised. Dr. DeVivo said every member of the Task Force knows the power of aviation and aerospace in changing lives and providing a lifetime of opportunities. She suggested harnessing that power in the recommendations and strategies that they will provide to meet the future need of what will soon return to be a growing and thriving industry. To meet the need for qualified and well-trained workforce, the Task Force must create awareness in communities that can be the greatest contributors to this in industries' success. She shared the need to create awareness in the elementary and middle school levels, which will then stretch to the high school levels, and stressed the importance of emphasizing math and science, particularly with girls, who tend to not take technical courses after the eighth grade.

Once the Task Force has created awareness, they must find a way to make the pathway affordable. Students from low socio-economic backgrounds need financial support to pursue the credentials to join the industry. By lowering the debt load for families, the Task Force can provide a lifetime career path with success. Awareness and financial support are just two of the barriers that will structure the work of the Task Force moving forward. Dr. DeVivo then referenced how the meeting's panel will explore more barriers in the industry.

Required FACA Statement

DFO Anderson read the official FACA statement:

This meeting is being held pursuant to a notice published in the *Federal Register* on September 4th, 2020. The agenda for the meeting will be as announced in that notice, with details as set out in the agenda posted on the FAA committee website. I am the designated federal FAA official, responsible for compliance with the Federal Advisory Committee Act, under which the meeting is conducted. It is my responsibility to see to it that the agenda is adhered to and that accurate

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minutes are kept. I also have the responsibility to adjourn the meeting should I find it necessary to do so in the public interest.

DFO Anderson then introduced Alexandra Randazzo as an attorney from the FAA Office of Chief Counsel. DFO Anderson stated that Ms. Randazzo will cover policies and procedures associated with FACA.

FACA Requirements Training

Ms. Randazzo, Managing Attorney at the FAA Office of Chief Counsel, then presented on the FACA requirements, stating the following:

1. FACA governs the YIATF activities
2. FACA dictates that:
 - a. Unless specified by law or presidential directive, Federal Advisory Committees (FACs) must be used solely for advisory functions
 - b. Congress and the public must be kept informed of the advisory committee's purpose, membership, activities, and cost
3. FACA includes requirements on:
 - a. Advisory committee procedures
 - b. Meetings
 - c. Publication of notices in the *Federal Register*
 - d. Federal officer responsibilities
 - e. Recordkeeping
 - f. Annual reports
4. A charter must be filed with the agency head, the Library of Congress, the appropriate Senate/House standing committees, and the Committee Management Secretariat before a FAC can meet or take any action
5. *Federal Register* notice was required when establishing the advisory committee
 - a. Must appear at least 15 calendar days before the charter is filed
6. A FAC terminates two years after its date of establishment unless otherwise provided by statute or renewed
 - a. The Task Force will terminate upon submittal of the report to the FAA Administrator and Congress
7. The Agency must publish a *Federal Register* notice at least 15 calendar days before the meeting, including:
 - a. Date, time, place, and purpose of meeting
 - b. Summary of the agenda and/or topics to be discussed
 - c. A statement regarding whether all or part of the meeting will be closed
8. The Agency, through the DFO, manages arrangements for meetings, including:
 - a. Approving and attending the meetings called
 - b. Approving the agendas of the meetings
 - c. Adjourning any meeting when he or she determines it to be in public interest to do so

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- d. Chairing meetings when directed by the Agency head
- 9. The Agency:
 - a. Ensures detailed minutes are kept and certified for each FAC meeting within 90 days of the meeting, including ones that are closed or partially closed to the public
 - i. The Chair must certify the accuracy of meeting minutes
 - b. Makes minutes and other documents available to the public at a single location for copying and inspection (unless related to closed/partially closed meeting)
 - ii. FACA requires the FAC reports, transcripts, minutes, appendix, working papers, studies, agenda, or other documents that were made available to or prepared by the FAC be made publicly available, unless they are subject to a Freedom of Information Act (FOIA) exemption
 - c. Manages Committee records in accordance with General Records Schedule 6.2
- 10. The Secretary will appoint all FAC membership, including the Committee chairs, to parent committees and subcommittee members
- 11. Non-voting membership designations are prohibited unless otherwise required by statute
- 12. All nominations must be reviewed by the FAA Ethics Official for proper classification prior to submission to the Office of the Secretary
- 13. Member responsibilities include:
 - a. Prepare all committee reports, recommendations, and other similar committee work products based on FAA taskings
 - b. Attend all meetings called by the DFO
 - c. Speak with Congress and the media only in a personal capacity, not on behalf of the FAC
 - d. Do not receive or discuss information concerning the following without prior approval:
 - i. Trade secrets, or commercial or financial information
 - ii. Records, the release of which would constitute a clearly unwarranted invasion of personal privacy
- 14. Subcommittees
 - a. FAC subcommittees must report back to the parent committee and must not provide advice or work products directly to the Agency or to another subcommittee
 - b. Subcommittees must be created by the FAA Administrator
 - c. Subcommittees are not subject to the following requirements:
 - i. To hold public meetings (unless determined otherwise by the Agency)
 - ii. To announce meetings in the *Federal Register*
 - iii. To take minutes and post those minutes (there are, however, other recordkeeping requirements)

After the presentation, DFO Anderson announced a 10-minute break.

Member Introductions

Dr. DeVivo then provided the opportunity for the Task Force members to introduce themselves. She read the member list and asked the members to introduce themselves and provide background on why they joined the Task Force.

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- **Amy Voss** is a Regional Training Manager for Cirrus Aircraft. Her role is to oversee their network of designated flight schools and independent flight instructors in efforts of promoting safety, quality, and standardization, as well as bolstering flight school and flight training. She appreciates how members of the Task Force entered the aviation industry in different ways and can share their different perspectives with youth pursuing careers. She started flying after college but never became an airline pilot because she felt it was not the right path for her. She is excited to show the variety of different jobs available in the industry.
- **Brett Levanto** is the Vice President of Operations for the Aeronautical Repair Station Association, which primarily represents holders of U.S. repair stations and international approved maintenance organization certificates or approvals. The organization also has members across the regulatory chain, including manufacturers, operators, and service providers. While he was interested in aviation in his youth, he did not join the industry until working with a charity called Angel Flight in Virginia Beach as an adult. From there, he sought out additional education and ended up with his current organization, creating policy related to workforce development. He highlighted that the industries continued engagement in the workforce crisis will lead to a healthy future for the industry.
- **Captain Jennifer Henderson** is an Engineering Test Pilot at Boeing. She had her first flight at the age of two, and her interest took hold in middle school and she set her educational goal to become a pilot. She graduated from the University of Maryland with a degree in Aerospace Engineering before attending Johns Hopkins University for a Master of Science in Systems Engineering. She started out working for the U.S. Navy, primarily conducting shipboard flight testing, before being accepted into the U.S. Naval Test Pilot School. She later decided to pursue her dream of becoming a military pilot and joined the Air Force reserve, where she flew C-17 aircrafts in support of Operation Iraqi Freedom and Enduring Freedom. Captain Henderson then began working at Boeing, and is now the chief pilot for the 737 Program. She is also a member of the Society of Experimental Test Pilots, and a proud mom of two. She would like to facilitate pathways into the industry through mentoring, awareness, and encouragement of youth.
- **Cyd Smith** is in her ninth year as an upper-elementary school counselor in Montgomery County, Pennsylvania. Previously, she was a high school counselor for eight years and a middle school counselor for four years. Prior to that, she ran a non-profit where she wrote grants to develop grassroots after-school enrichment programs which focused on youth in low-income housing communities. During that time, she served on the board for Communities and Schools and the county Dropout Prevention Task Force. She underscored that early intervention is the key to getting youth interested in the industry. Her interest in aviation started when her son attended an OBAP summer camp when he was in the eighth grade. She is passionate about working with boys in the after-school program called Leadership Academy, which exposes children to aviation careers.
- **David Purser** is a Physics and Aviation Professor at Kansas City High School, which teaches a four-year aviation curriculum. The curriculum has been sponsored primarily by AOPA. The high school is one of 25 in the nation that began the development of the curriculum, and is advising AOPA on the curriculum. The school offers lessons in airplane construction and flight. The intent

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is to fly juniors and seniors during their last two years of high school. David's excitement is in aviation itself as a career, but he recognizes funding as one of the bigger barriers.

- **Dr. Joel English** is the Executive Vice President of the Aviation Institute of Maintenance. The Institute has 13 locations across the country and each campus is an FAA-certified Part 147 school. The network of schools hosts 4,500 students pursuing FAA certification as Aviation Maintenance Professionals (AMPs). The Institute is passionate about giving people the opportunity to find their passion in aviation maintenance. Dr. English caught the aviation bug when he joined the Aviation Institute of Maintenance. He is excited to hear the Task Force speak about the great need for vocational education in aerospace. He believes that the emergence of alternatives to four-year college programs and technical education programs will help develop more aerospace professionals.
- **Dr. Nancy Shane Hocking** is a Manager of Pilot Gateway Programs at JetBlue Airways. She has a master's degree in both Aviation and Education along with a PhD in Aerospace Sciences. She previously taught middle and high school, and at the college level. In the industry, she has been a head of training and pilot recruitment and has a private pilot and dispatcher certificate. She is passionate about education and aviation and is looking forward to getting youth excited about the aviation industry.
- **Dr. Ralph Coppola** is President of RKC International and founder and Executive Director of the Real World Design Challenge (RWDC), which helps prepare teachers and students at the secondary level to design Unmanned Aircraft Systems (UAS) with a particular mission. He shared that this year's mission is to deliver packages in urban areas and focus on safety. His interest in aviation comes from his childhood. He hopes that the Task Force can transfer its excitement and enthusiasm to the next generation.
- **James Hall** is Dean of Aviation Manufacturing at the National Center for Aviation Training. He is also the Chair of the Transportation Commission for the Kansas Department of Education, where he develops high school pathways for students to move from high school programs to aviation careers. He started in aviation manufacturing as a sheet metal worker, became an Aviation Maintenance Professional (AMP), and ultimately shifted to education. He shared that in Wichita, Kansas, aviation makes up 27% of the economy and the variety of aviation jobs is prevalent.
- **Joanne ("Jo") Damato** represents the National Business Aviation Association (NBAA), serving as vice president of Educational Strategy and Workforce Development. She was passionate about aviation from a young age and learned how to fly in high school. She is a mom of children who are involved in several aviation initiatives, and her husband is also an airline captain. Ms. Damato shared that NBAA is passionate about diversity, equity, and inclusion, and about bringing the aviation pipeline along and developing future leaders through internships, mentoring, and scholarship opportunities.
- **Joey Colleran** is the Director of Business Development at Redbird Flight Simulations and is also a board member of the University Aviation Association (UAA), representing colleges and universities across the country. She stated that she got the bug to fly at a young age and got her private pilot's license, and became a member of the Task Force through her service on the UAA

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board. Ms. Colleran said that she is excited to make a change and be impactful in the industry, and that she is looking forward to making the industry more diverse and giving students opportunities they need.

- **John Huff** is Vice President of Human Resources for Hong Kong Aircraft Engineering Company (HAECO) Americas, an aviation maintenance, manufacturing, and engineering company based in North Carolina. He is passionate about building career opportunities for people and ensuring that they can be financially secure. He is looking forward to showing youth what the industry has to offer in terms of opportunities and careers.
- **Kasey Herzberg** is the Director of Engineering for Aircraft Data Fusion, a technology company in Minneapolis that provides digital tools, innovation, and support systems for airports and airlines around the world. She is also the Executive Director for the Challenger Learning Center of Minnesota, a local non-profit that provides science, technology, engineering, and mathematics (STEM) education to students through simulated space missions. The organization conducts community outreach to underserved communities. Getting robotics into the hands of youth is one of the more rewarding parts of her job as she spreads interest in the industry. Ms. Herzberg holds a degree in Aerospace Engineering and Mechanics, and a double master's from Embry Riddle Aeronautical University. She represents the engineering side of the industry and is passionate about opportunities beyond piloting and providing opportunities for youth.
- **Ryan Goertzen** is the Vice President of Maintenance Workforce Development with AAR Corp, which is a global aerospace company located in Chicago, Illinois, focusing on heavy maintenance repair and overhaul. He was passionate about aviation from a young age and acquired his pilot's license in high school. Facing adversity, he was unable to continue his dream of flying and instead found passion in aviation maintenance. He has worked as a president of an aviation maintenance school; Maintenance, Repair, Overhaul (MRO) in Oklahoma City; and now is in workforce development. He wishes to change lives through education and sees students as the future of aviation. Mr. Goertzen has been focused on workforce needs moving forward and getting youth interested in the industry.
- **Stacey Bechdolt** is the President and founder of the Aerospace Education Resource Organization (AERO), a non-profit located in the DC metro area. Through AERO, Ms. Bechdolt works to increase diversity in aerospace fields by facilitating educational and career opportunities in underserved communities. Stacey is a private pilot and has two decades of experience in general business and airline industries as an attorney and safety professional.
- **Tammera Holmes** is the founder and CEO of the Aerostar Avion Institute. She became interested in aviation at the age of 16 when she participated in the Young Eagles program. Her experience in the program as a young African American woman in an underserved community heavily influenced her decision to join the industry. She excelled academically and said that aviation saved her life. Her goal on the Task Force is to provide resources and opportunities to underserved populations who do not have the exposure, empowerment, and opportunities to pursue careers in aviation. She graduated from Southern Illinois University with a degree in Aviation Management and she holds over 100 hours of flight time. Ms. Holmes spent 11 years as a professional Airport Planner, an experience that opened her eyes to the litany of jobs that

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undergird Airport Operations Maintenance and infrastructure for facilities across the country. She was the only African American at the company for seven years, so it is important for her to represent diversity on the Task Force both in terms of gender and underserved communities.

- **Whitney Dix** is the Manager of Dispatch Training at Southwest Airlines and has been a dispatcher for 20 years. She was fascinated with aviation at a young age and went on to an aviation university, where she found her career in dispatching. Ms. Dix is passionate about exposing youth to jobs in aviation because there are many jobs out there that students do not know about. She has spent a lot of time establishing scholarship opportunities and is involved in several initiatives to get youth interested in aviation. She is excited to be part of the group and come up with ideas and opportunities to give youth access to jobs in aviation.
- **Yvette Rose** is the Senior Vice President for the Cargo Airline Association and also serves as the President of the Aero Club Foundation of Washington. She is excited to inspire the next generation of aviators. The mission of the Aero Club foundation is to advance aviation, aerospace, and STEM education mainly in middle and high schools, focused on the District of Columbia public and public charter schools. Many of the students that the Aero Club Foundation serve are from underserved communities and have never been on an airplane. Ms. Rose shared a story of a young girl experiencing her first flight simulator, which sparked her interest in the field and led to her pursuit of a career in aviation. She highlighted the need for diversity and identifying barriers of entry.

Overview of YIATF

Dr. DeVivo then shifted the discussion to the structure of the Task Force, including communication tools, work schedule, and subcommittee structure. Dr. DeVivo reminded the Task Force that they will be using Microsoft Teams to stay connected with each other and advised those who are having technical difficulties with Microsoft Teams to reach out to DFO Anderson for help.

Dr. DeVivo shared that the structure will follow four distinct subcommittees, which will meet regularly. The chairs of the subcommittees will also meet on a regular basis to discuss where subcommittees might overlap or have similar resource and data needs. Dr. DeVivo reminded the group that they have a year to formulate recommendations and strategies. She stated that she will walk through the subcommittee charges and questions to consider before opening up the discussion to Task Force members.

Trends Subcommittee: Yvette Rose, Kasey Herzberg, Brett Levanto, Cyd Smith

Specific charge for this committee: Identify industry trends that encourage or discourage youth in the United States from pursuing careers in aviation.

Questions to consider:

1. What are the existing programs that work well in reaching youth?
2. What are the impediments to reaching young people and why is aviation not considered as a career choice?
3. What role do teachers and guidance counselors play in shaping a student's decision to pursue aviation?

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4. What is the best age to reach young people with the idea of aviation, and how many exposures does it take to capture a student's interest?
5. What are the best approaches to exposing students to the richness of the aviation industry, as well as reducing the impediments?

Discussion:

- Yvette Rose shared that the subcommittee met last week, and as each subcommittee is going to be covering a work plan, they went through the information that was provided. They covered the questions to consider and tried to refine the role of teachers and guidance counselors in each level of schooling. They made sure to capture the role of universities, colleges, and technical schools to tie different levels of education to the industry. They're looking forward to hearing what other members have to say to ensure they are capturing everything needed, in terms of trends, programs, and impediments.
- Tamera Holmes shared her belief that this subcommittee is extremely important in terms of their findings being able to drive what other committees are going to do. She said that one of the most important trends found was the presence of a mentor or instructor that students could relate to. Because the industry does not have many minorities present in mentorship roles, Tamera is curious if the statistics on the STEM side could translate to trends that would encourage or discourage students to excel—especially females, as they do not usually pursue STEM careers.
 - Ms. Rose responded to Ms. Holmes, saying mentors are crucial to making an impact on students from different educational levels. She stressed the importance of a representative workforce and students being able to see themselves or people like them in aerospace-related careers.
- Dr. DeVivo encouraged the use of Microsoft Teams in sharing data, resources, and questions among the group.
- Jo Damato stated that she was excited to see the findings that the panel would present later in the meeting and shared her excitement in the parallels between the trends subcommittee and the subcommittees on the WIAAB. She raised the question of being mindful of parents and their role as influencers.
- Dr. DeVivo shared her experiences of dealing with parents of students and the level of support they provide.
- Ryan Goertzen inquired about the relationship between the YIATF and WIAAB, as the groups would be covering similar topics.
 - Dr. DeVivo replied that some information and collaboration has already begun to take place organically. She also shared that she has a scheduled meeting with the WIAAB chair, Dr. Heather Wilson. Dr. DeVivo highlighted that one of the members of the WIAAB, Dr. Rebecca Lutte, would be giving a presentation during the meeting. Lastly, she stressed the need for information sharing between the two groups and stated that she would provide an update of her conversation with Dr. Wilson.

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Awareness Building Subcommittee: Joey Colleran, Stacey Bechdolt, Whitney Dix, Jennifer Henderson, Amy Voss

Specific charge for this committee: Consider how the Administration, air carriers, aircraft, powerplant and avionics manufacturers, aircraft repair stations, and other aviation stakeholders can coordinate efforts to support youth in pursuing careers in aviation.

Questions to consider:

1. How are the FAA, employers, non-profits, and others currently involved in workforce development?
2. What would be the best structure to having these groups work together and use best practices to reach young people?
3. Are there existing “umbrella groups” that could be leveraged to provide a “one-stop-shop” for both organizations, students, parents, and educators to learn more about aviation?

Discussion:

- Joey Colleran shared that the subcommittee had their first meeting on October 7th. They reviewed the work plan and decided to identify their strengths to attack the different segments of the subcommittee’s goals. Ms. Colleran shared her excitement in being able to work with her subcommittee members.
- Dr. DeVivo asked if the group discussed how they were going to collect information.
 - Ms. Colleran stated that the subcommittee had planned on discussing information collection and tasking at their second meeting.
 - Whitney Dix said that she came up with the idea for subcommittee members to answer the questions to consider individually. This will allow them to come to their second meeting with an understanding of what subcommittee members’ strengths and specialties are.
- Dr. DeVivo stated that members should answer the survey that was disseminated to have a better understanding of the background and expertise of members. She also stated that the panel presentations occurring later in the meeting would provide another perspective.
- Brett Levanto said that awareness building is extremely important for individuals in the industry. He referenced Jim Brough from the FAA, stating that Mr. Brough had underlined the importance of avoiding duplication and connecting the different efforts. Mr. Levanto reinforced Mr. Brough’s position, stating the importance of connection and communication.
 - Ryan Goertzen mirrored the sentiments shared by Mr. Levanto, stating that many people have no idea what pathways are available. He underlined the importance of getting the message out there: What is aviation? What are those pathways? Mr. Goertzen also shared his support of a clearinghouse of information.
- Dr. DeVivo agreed with what Mr. Goertzen said, and pointed out that skills learned in one section of the industry can be applicable in several other places.

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- Dr. Joel English reinforced this and said that many people within his institution understand and respect the connection of different fields.

Expanded Pathways Subcommittee: Ryan Goertzen, Jo Damato, Joel English, James Hall, Nancy Shane Hocking

Specific charge for this committee: Identify methods of enhancing aviation apprenticeships, job skills training, mentorship, education, and outreach programs that are exclusive to youth in the United States.

Questions to consider:

1. What are the current pathways to careers in aviation (please consider the following: maintenance technician, pilot, engineer, technician, airport manager/operations, dispatcher, air traffic controller, unmanned aerial systems, and any others that are applicable)?
2. How can apprenticeships be best promoted and leveraged with employers to create more pathways for students?
3. How can mentorship and outreach programs be leveraged to attract more underserved populations to aviation?
4. What are aviation colleges and universities already doing to reach students (especially underserved populations) and could those efforts be scaled at a national level?

Discussion:

- Ryan Goertzen stated that diversity of the subcommittee will be crucial in answering their questions. He said that in their first meeting, the group discussed how to take the things that already exist and funnel them into helping people understand pathways and careers. The group also talked about high school pathway programs, colleges, military transition, and credential-based programs, and discussed ways to remove the barriers associated with these pathways and emphasized the need to reach underrepresented groups. He said that the development of a national website where all programs can be linked would be beneficial in helping people understand pathways and how to navigate them.
- Dr. Joel English stated the importance of the awareness subcommittee in promoting aviation programs across the country.
- Dr. Nancy Shane Hocking stated that there are many possible pathways out there and they do not all have a connection from start to finish. She stressed the importance of working backwards by deciding what the goal is and then identifying pathways to reach that goal.
 - Dr. DeVivo agreed with what Dr. Shane Hocking said and stated that even regional or geographical differences could have a large effect on what pathways are available.
- Jo Damato shared her pleasure in the subcommittee's meeting discussion. She underlined the importance different points of entry into the industry and shared that she has had difficulties in connecting career dots for her children with an interest in aviation, and recognized how difficult it could be for other parents as well.

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- Dr. DeVivo mentioned that there are resources available for subcommittees to conduct a focus group or gather more information from students through members of the Task Force.
 - Ms. Colleran added that UAA would be happy to reach out to its members for additional information or support.

Funding Subcommittee: Ralph Coppola, Tammera Holmes, John Huff, David Purser

Specific charge for this committee: Identify potential sources of government and private sector funding, including grants and scholarships that may be used to carry out the recommendations and strategies and to support youth in pursuing careers in aviation.

Questions to consider:

1. What are the federal, state, and industry funding programs that can assist individual students in attaining training, licensure, etc.?
2. Many aviation associations provide scholarship funding for students—is it enough? How can students easily find that information?
3. Are there foreign countries we can look to for best practices in terms of funding workforce development?
4. Are there companies funding initiatives right now that are interested in scaling those projects?

Discussion:

- Dr. Ralph Coppola shared that the subcommittee has had two meetings wherein they discussed strategies and ideas to address a large problem in funding. Funding programs nationally and over a long period of time is critical to ensuring a lasting impact on the workforce. Ongoing, lasting funding is the best way to support people through these various initiatives and programs. Dr. Coppola said that the group has started writing their ideas down and is looking forward to sharing a draft with the group.
- Dr. Coppola said the group also identified the need for a national database, which will be a critical variable in finding funding and opportunities. He shared the idea to have funding sources come to the programs via incentives as opposed to the traditional funding approach. One of the things clear to the group is that financial support is key in making a difference in the workforce. Without funding, great ideas will not have the impact intended.
- Tammera Holmes thanked the members for bringing a wealth of experience to the subcommittee. She shared that the funding structure has been a problem which negatively affects non-profit organizations. She stated that the only way to get the best candidates is to prepare them for the jobs in high school, so funding those programs must be a top priority. She stressed the need for creating positions that are specially focused on workforce development at the high school level.
 - Dr. DeVivo said that having a unifying resource for students, parents, educators, etc. will be a priority for the Task Force moving forward. She also shared an example of an engineering organization that is trying to create a similar unifying resource and underscored the importance of taking best practices from other places and incorporating them into the Task Force's vision.

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- David Purser emphasized that part of what Ms. Holmes means is making sure funding is equally available to different groups of students.
- Mr. Goertzen added that there is a wealth of funding opportunities available to students and suggested that the subcommittee speak with financial offices to add another perspective. He stated that outcomes are the key, and if your educational programs are not leading to anything, then they're lacking value.
- Dr. DeVivo stated that grants are usually not enough. Training programs and flight programs are expensive, and there needs to be additional options for students.
 - Tammera Holmes agreed with what Dr. DeVivo said. She added that the earlier students engage in training, the cheaper that training will be. Students aren't exposed to aviation training until they reach the college level and at that point the training is usually too resource-intensive to be practical. She used the Second World War as an example of youth getting engaged in the workforce at a young age and emphasized that youth need to be engaged earlier.
- Whitney Dix said that from an industry perspective, they understand the need to get youth engaged early on. She said they are trying to figure out ways to reach kids, and this Task Force will provide a lot of ideas to improve the experience. She also shared that there were no state-funded aviation schools that she could attend, so she had to go out of state to get the education she wanted. She continued to say that there is a lot of scholarship money out there that goes unused every year because students are not aware of it.
- Dr. Shane Hocking added that there are a lot of people who want to become pilots but cannot. Much of the federal funding that exists is not able to be used for flight, so expanding funding to other flight schools and making it more readily available would be something to investigate.
 - Dr. DeVivo, in referencing what Dr. Shane Hocking stated, shared that an increase in student financial aid would be necessary to cover flight training and tuition.

Dr. DeVivo then previewed the upcoming panel and adjourned the meeting for a lunch break.

Panel: Understanding the Barriers and Needs for Successful Youth in Aviation Programs

Panel Participants: Elizabeth Tennyson, Vanessa Blacknall-Jamison, Kenneth Morris, Dr. Rebecca Lutte, Stephanie Ward (should we list in the order they presented?)

Vanessa Blacknall-Jamison

Dr. DeVivo introduced the first panelist, Vanessa Blacknall-Jamison, a Chair of OBAP. The group has reached more than 70,000 students since 2006.

Ms. Blacknall-Jamison thanked the DOT and the FAA for the opportunity and shared her excitement in being able to speak to the members of the Task Force. She shared an anecdote highlighting how the Task Force has already started to make a difference. She then introduced OBAP, which was founded in 1976 by Ben Thomas. She said that 10 to 15 years ago, the organization changed its name from the Organization of Black Airline Pilots to the Organization of Black Aerospace Professionals. She outlined the five pillars that the organization follows: aerospace professionals in schools, aerospace career

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enhancement, collegiate programs, aerospace development programs, and scholarship awards totaling over \$5.8 million. Ms. Blacknall-Jamison then displayed the organization chart for OBAP's Board of Directors and highlighted how the board has been diligent in ensuring they are moving in the right direction.

Overview of OBAP 2020:

- COVID-19: Impact on OBAP
- Courageous Conversation Series: What We Learned
- Leadership Changes
- OBAP Spring Meeting, Virtual
- OBAP Annual Conference, Virtual – Mask Off 25K

Ms. Blacknall-Jamison then shared statistics of OBAP's Courageous Conversation series, which was centered around ongoing social issues. She stated that OBAP is known for its advocacy but also for its education and youth programs. She shared social marketing statistics surrounding the Courageous Conversations, and added that the majority of those who participated in the conversations were not OBAP members. Ms. Blacknall-Jamison emphasized the importance of conversations and funding in ensuring grassroots organizations like OBAP can continue to conduct outreach. She then shared statistics of OBAP's Aerospace Professionals in Schools (APIS) program, which visited 228 schools and had over 55,000 students participate in 2019. She emphasized the need to get parent and teachers involved in creating awareness for these programs. Ms. Blacknall-Jamison also shared statistics from the ACE Academy. While many of the in-person academies were cancelled, OBAP was able to host their first virtual ACE academy. There were over 104 applicants and 70 students were selected. She shared that participants said it was one of the best experiences they had.

Collegiate Chapters:

- OBAP Collegiate Chapters are registered student organizations chartered at colleges and universities nationwide. They provide essential guidance to aspiring aerospace professionals of color, offering mentorship, scholarships, internships, and career readiness programs.
- OBAP currently has 15 Collegiate Chapters established on college campuses across the United States.
- Community-service involvement includes:
 - Food pantries
 - Shelters
 - Participation in local fundraising events for the chapter and community

Ms. Blacknall-Jamison shared the growing list of OBAP Collegiate Chapters, and pictures of Collegiate Chapters conducting outreach and volunteering. She then shared statistics from the OBAP-sponsored Lt. Col. Luke Weathers Flight Academy.

Aerospace Professional Development Program (APDP)

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- Designed to assist in critical profession decision-making
- Scholarship and career advancement
- Support for members facing furloughs
- Furlough resources guide
- Professional development webinars
- Career center resources
- Mentorship

Ms. Blacknall-Jamison asked the Task Force to look at OBAP and other minority groups to establish resourcing and be part of the solution. She stated that grassroots organizations like OBAP can be a great resource and advocate beyond organizations that have funding on the national level.

Questions:

- Cyd Smith thanked Ms. Blacknall-Jamison and OBAP for their support of the community. She stated that the reason she became interested in aviation was through her son's experience at an OBAP summer camp.
- Dr. DeVivo asked what the next steps for Courageous Conversations would be.
 - Ms. Blacknall-Jamison stated that there would be another series of conversations. She mentioned that the next round of stimulus checks and the outcome of the election would be a source of next steps. She underscored the importance of having a discussion regardless of if the parties agree.
- Dr. Shane Hocking asked for one piece of advice or a biggest hurdle for the Task Force moving forward.
 - Ms. Blacknall-Jamison highlighted the need to develop a pathway or pipeline of funding.

Kenneth Morris

Dr. Sharon DeVivo then introduced Kenneth Morris, the Executive Director for the Aviation Community Foundation (ACF), which represents more than 30 different youth organizations across the country.

Mr. Morris thanked Dr. DeVivo and the Task Force for the opportunity. He stated that he has been in aviation since 1998 and that he believes in a grassroots strategy to diversify aviation. He stated that he did not have much money or resources from large organizations, so he relied on his interpersonal skills and that has paid off for him. He stressed understanding the barriers and needs for a successful youth in aviation program and shared a quote emphasizing the need to see something different to be something different. He shared that he did not see African American, Latino, or woman pilots when he was growing up and that affected his thought process. In the ACF, equity and inclusion are paramount. Mr. Morris added that the goal of ACF is to cultivate unity, challenge the status quo, change lives, and create new standards. He made the point that there is an abundance of great programs across the country and there is not a need for more. Instead, he suggested that these programs collaborate, talk to one another, and share resources to improve their function. Mr. Morris shared that he did not get into aviation until later in his life.

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- U.S. Navy Veteran, Naval Aircrew
- Commercial Pilot and Drone Pilot
- Advanced Ground Instructor
- Enlisted Aviation Warfare Specialist
- Board member, Legacy Flight Academy
- Founder, Universal Elite Aerospace
- (FMR) Director of Education, Lone Star Flight Museum
- DOT “Forces to Flyers” U.S. Aviation Academy graduate

Mr. Morris found a mentor in a Navy Recruiter and ended up joining the Navy. He shared that he scored high on the exam and was given options for careers. Mr. Morris said he took on the challenge of the hardest job, Anti-Submarine Warfare Systems Operator. On his way to boot camp, he experienced his first flight after being told that African Americans do not fly in planes. After having an established support system, Mr. Morris quickly rose through the ranks with success. From his experiences at the Lone Star Flight Museum, he gained enough business acumen to create his own non-profit. He stated that he had passion in his work but lacked resources to continue, and that OBAP gave him a scholarship to start his flight training. He stressed the need and value for technical and vocational schools. Mr. Morris shared several pictures that outlined his humble beginnings and made the point that environment and support systems have a large impact.

Mr. Morris then shifted to discussing the mission of ACF. He stated that the purpose of the foundation is to connect top-tier educational programs nationally, improve the quality of leadership, empower youth, and diversify the emerging talent pipeline in the aviation industry.

By the Numbers:

- Headquarters: Houston, Texas
- Satellite Locations: Denver, CO
- Board Members: 5
- Advisory Board Members: 15
- Community partners: 20
- Students Engaged: 20,000+ (Pre-COVID)
- 501(C)(3) Information on Guidestar: Aviation Impact Foundation

How the Program Works:

- Phase 1: Student/parent sign-up for an aviation introduction connection meeting
- Phase 2: Student/parent attend a local youth aviation event
- Phase 3: Simulator and intro flight
- Phase 4: Student is connected to a specific mentor/program bridging them to their desired career choice
- Phase 5: Follow up and track student progress

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Mr. Morris then shared an image of ACF partners and associates. He stressed the need for bilingual outreach, reaching parents and students in their native language and making them more comfortable.

Community Outreach:

- Grow – Sister of the Skies
- OBAP Convention – Houston
- U.S. Coast Guard (USCG) School Fly-In
- Double V Summer Camp
- Wings Over Houston Airshow
- National Aeronautics and Space Administration (NASA) Subsonic Test Flights
- Aim High Flight Academy
- Aviation Club – Houston Airport System and more

Mr. Morris made the point that younger generations are influenced by what they see on TV. He shared that when he conducts outreach, he shows students pictures of celebrities on airplanes or next to a pilot to try and gain their interest.

Barriers:

- Lack of exposure
- Lack of accessibility

Needs:

- Focused research and development (R&D) for local aviation programs
- Dedicated resources to help bridge

Potential Hurdles:

- Lack of cohesion
- Lack of continuity
- Lack of consistency
- Lack of collaboration
- Lack of communication

Mr. Morris closed his presentation by stating how things have changed and how we need to meet students where they are and relate to them in order to get their interest.

Discussion:

- Captain Jennifer Henderson thanked Mr. Morris for his presentation and asked what the most successful means to reach students are.
 - Mr. Morris stated that he conducts research to try and find points of connection between himself and the students.

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- Tamera Holmes congratulated Mr. Morris on the work that he has been doing over the last few years. Ms. Holmes asked what specific funding areas underserved communities need support in that the general youth does not.
 - Mr. Morris responded by providing an example of how he used financially incentivized students and motivated them with a common goal.
 - Ms. Holmes said that the most successful programs she had experienced were those that provided a stipend to the students.

Elizabeth Tennyson

Dr. DeVivo then introduced Elizabeth Tennyson, who is Executive Director of “You Can Fly” for AOPA.

- “You Can Fly” is a collection of engaging, donor-funded initiatives designed to reach pilots, and future pilots, at key moments in their journey. The program is focused on breaking down barriers by using a four-year aviation curriculum delivered for credits.

High School Aviation STEM Curriculum:

- Discover and prepare for career opportunities
- Pilot and UAS pathways
- Rigorous four-year STEM curriculum
- Completely free schools
- Lessons, presentations, activities, projects and assessments included
- Teacher professional development
- Leads to FAA Private Pilot Knowledge Test or Part 107 Drone Test, capstone projects
- Aligned to Common Core, Next Generation Science Standards (NGSS,) and FAA Airmen Certification Standards (ACS) standards

2020-21 AOPA Curriculum:

- 460+ classrooms
- 220 schools
- 38 states
- More than 8,500 students

Ms. Tennyson then shared several graphics that display the spread of school locations, school types, participant genders, participant ethnicities, and participant economic statuses.

High School Aviation STEM Symposium:

- Aviation industry experts and exhibitors
- Focus on creating and growing aviation STEM opportunities for high school students
- Best practices from experienced educators
- Learn more about AOPA curriculum
- Sign up to use the program

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- Most recent symposium sold out
- November 14-16, 2021—Orlando International Airport
- November 17, 2020—virtual event

National Center for the Advancement of Aviation:

- Bipartisan legislation introduced in both chambers
 - Senators Inhofe and Duckworth
 - Representatives Carson, Young, and Larsen
- Support aviation and aerospace STEM curriculum development
- Aviation workforce development
 - Pilots, UAS, maintenance, technicians
- Economic and safety data analysis
- Forum for cross-industry collaboration

Discussion:

- Dr. DeVivo asked if the organization is able to track students who participate in the curriculum and determine how many of them end up pursuing a next step in terms of aviation education.
 - Ms. Tennyson responded that the program is not old enough yet to have students graduate from it, and they are field testing their 12th-grade curriculum now. She stated that they do keep up with the students at different junctures and will have that data ready in the near future.
 - Brett Levanto added that AOPA has been working alongside the FAA on two workforce development grant programs that would give \$5 million to pilots and \$5 million for technicians. He advised members that are leading grassroots efforts to do more research on grant funding to be used as supporting resources.
 - Ms. Tennyson reinforced Mr. Levanto's message by stating that the funding could make a significant difference in any program.
- Cyd Smith inquired if there have been conversations about developing a similar curriculum for younger students.
 - Ms. Tennyson said that there have been those conversations, and underscored the cost and difficulty of creating a national curriculum. She went on to say that they would need to stand this program up on its feet before turning their eyes to other education levels.
- Ryan Goertzen shared a similar initiative to develop a general FAA curriculum. He stated that he sees success with what AOPA is doing and wants to recreate it with an added maintenance component.
 - Ms. Tennyson responded by highlighting that every state and school district has to be approached and handled differently and individually, which is one of the greatest challenges.

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Dr. Rebecca Lutte

Dr. DeVivo introduced Dr. Rebecca Lutte, who is an Associate Professor at the University of Nebraska at Omaha Aviation Institute, to present her workforce report on women in aviation.

Dr. Lutte shared that she conducted research on outreach, recruitment, and retention of women in aviation. She also stated that she serves on the WIAAB as a chair of the Understanding the Problem and Industry Trends subcommittee. She shared that she is excited for the overlap of the two committees.

Dr. Lutte introduced the Women in Aviation Workforce Report, which was done in cooperation with Women in Aviation International and the University of Nebraska at Omaha, and was funded by the NASA Nebraska Space Grant.

Dr. Lutte shared a graphic displaying the percentage of women in the field by occupation. The spectrum showed less than 5% of women in the field serve as maintenance technicians or airline executives, while less than 70% of women in the field serve as travel agents or flight attendants.

- The greatest gender gap is in maintenance, where 2.4% of workers are women
- 19% of dispatchers and air traffic controllers are women
- 13% of aerospace engineers are women
- 16.6% of airport managers are women
- 24% of the Aerospace Industries Association: Aerospace workforce are women
- 21% of aviation higher education faculty are women
- 11% of cybersecurity workers are women

Women Pilots:

- 7% of all pilots
- 5% of airline pilots
- 1% of airline captains
- Challenge – women have a lower conversion rate from student pilots to private pilots compared to men

Dr. Lutte stated that 54% of the respondents said early exposure to aviation as a child positively influenced their decision to pursue a career in aviation. She emphasized how important outreach is to youth.

“Influencers” are defined as people who influence young women’s decision to pursue aviation and what role they will play.

- Parents: 55% positively influenced the respondents’ decision to pursue a career in aviation
- High school counselors: 84% had no influence
 - When they did, it was more negative than positive

Citing the Experimental Aircraft Association (EAA) Women Soar Survey, Dr. Lutte shared a graphic that displayed the right age for women to get interested in aviation.

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- The majority (64%) became interested in aviation at the age of 20 or less
- 29% became interested when they were younger than the age of 10
- 41% of pilots who responded started flight training between the ages of 16 and 20

The study explored what draws women into aviation:

1. Passion for aviation
2. Perceived as adventurous
3. Perceived as fun
4. Desire to prove personal abilities
5. Desire for a challenge

Greatest challenges and barriers:

1. Workplace culture
2. Cost
3. Family, work-life balance
4. Training-related issues
5. Lack of support

Dr. Lutte then shared an Aviation Outreach Model: Essential Elements of Good Outreach. The steps to achieving good outreach include:

- Preparation
- Contact
- Engage
- Sustain
- Evaluate

Final thoughts:

- Outreach
 - Age appropriate—know your target
 - Includes awareness and empowerment (“see it, be it”)
 - Consider outreach to better inform influencers
 - Sustain the momentum and include clear pathways
- Continued industry focus on barriers: cost, family/work balance, policies, inclusive workplace culture
- Diverse faculty/flight instructors/leadership
- Develop community of support

Discussion:

- Dr. Ralph Coppola asked if Dr. Lutte could share the study after the meeting.

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- Dr. Lutte stated that she would put a link in the chat that points to the different studies referenced in the report.
- Tammera Holmes asked if there were any partnerships with the Sisters of the Skies to collect survey data, as African American women are severely underrepresented in the industry.
 - Dr. Lutte responded by stating that she is in the process of reaching out to individual organizations that represent underserved groups to obtain their data.

Stephanie Ward

Dr. DeVivo introduced Stephanie Ward, who is the manager for Aviation Planning at Mead & Hunt, and presented her report for the Airport Cooperative Research Program (ACRP) on Developing Pathways to Aviation.

Ms. Ward noted that there were many similarities in her research and that of other panelists. She stated that the project conducted for ACRP stemmed from ACRP reaching out to the National Association of State Aviation Officials (NASAO). She pointed to the workforce shortage crisis in the aviation industry as a catalyst for the research.

Target Group and Focus:

- Focus on the 10- to 25-year-old age group
- Develop and implement strategies for promoting aviation as:
 - A career
 - For business
 - For recreation

Ms. Ward highlighted that aviation is much more than just being a pilot, it's about all of the aviation careers and the various employers. She shared a graphic displaying examples of aviation career options by employer, and underscored the need to expose students to diversity in the industry.

How do we get kids exposed to aviation?

- School
- Speakers
- Open houses
- Camps
- Classes
- Workshops
- Tours
- Flights
- Clubs
- Contests
- Internships
- Grants and scholarships

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Pathway to establishing an aviation career program:

1. Spark the interest
2. Continue the interest
3. Discern a pathway for a career
4. Find a program
5. Become employed as an aviation professional
6. Give back to aviation organizations

Organizations involved in aviation:

- Example of 32 national agencies involved in aviation education in some form
 - Federal
 - FAA, NASA
 - National industry and trade organizations
 - AAAE, AOPA, NAAA
 - National youth organizations
 - 4-H, Project Lead the Way
- Countless state and local agencies

Key Takeaways:

- Spark the interest
- Showcase all of the career opportunities
- Do something—start small—scale to fit resources
- Look for creativity
- Learn from others
- Database of opportunities is missing to help support the connections

Discussion:

- Dr. DeVivo asked if the report points out best practices for each of the topics covered.
 - Ms. Ward responded that the report does not include best practices to the extent they would have liked. With the focus being mostly on the local level, expanding the research to a broader context may provide some best practices. Ms. Ward stated that she will post the link to the report in the chat.

Public Speakers

Dr. DeVivo thanked the panelists and said that there were no requests from members of the public to speak today. She highlighted that members of the public may present a written statement to the Task Force at any time by sending it to the organizational email address that was identified in the *Federal Register* notice.

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Other Business and Action Item Review

Dr. DeVivo highlighted the important role of the panelists in supplementing the Task Force's discussion and thanked everyone who attended the meeting. She opened the floor for any last-minute questions or comments before the meeting adjourned.

- Dr. Ralph Coppola inquired about getting access to the PowerPoints used in the meeting. Dr. DeVivo replied that the access to the presentations would be provided.

In preparing the topics for the next meeting, Dr. DeVivo said that the next step would be to get the subcommittee chairs together to discuss overlap and where data can be stored and shared. Dr. DeVivo will then set up a time for another virtual session.

Meeting Adjourn

DFO Anderson thanked the Task Force members for their help and support with the effort. She also stated that all relevant information would be posted to the committee website within a month. DFO Anderson then adjourned the meeting.

Additional Information

Detailed Meeting Agenda

1. Call to Order by DFO Angela Anderson
2. Welcoming Remarks by FAA and DOT
3. Introductions by FAA
4. Meeting Opening by YIATF Chair, Dr. Sharon DeVivo
5. Welcome
6. FACA Statement
7. Overview of FACA
8. Member Introductions and Overview of YIATF
9. YIATF Objectives and Tasking Discussion
10. Understanding the Barriers and Needs for Successful Youth in Aviation Programs: Panel with Ms. Elizabeth Tennyson, Ms. Vanessa Jamison, Mr. Kenneth Morrison, Dr. Rebecca Lutte, Ms. Stephanie Ward
11. Public Speakers
12. Other Business and Action Item Review
13. Meeting Adjourn



Trends Subcommittee

YOUTH ACCESS TO AMERICAN JOBS IN AVIATION TASK FORCE

PUBLIC MEETING: MARCH 31, 2021

Trends Subcommittee Members

- Yvette Rose
President, Aero Club Foundation of Washington & Subcommittee Chair
- Kasey Herzberg
Director of Engineering, Aircraft Data Fusion
- Brett Levanto
Vice President of Operations, Aeronautical Repair Station Association
- Cyd Smith
School Counselor at Elkins Park School, Cheltenham School District,
Cheltenham, PA

FAA Subject-Matter Experts

James Brough, Analyst, National Aviation and Space Education Program
Christina Drouet, Manager, Aviation Workforce and Education Division

FAA's National Engagement & Regional Administration
Office of Policy, International Affairs, and Environment

Trends Subcommittee Task

Identify industry trends that encourage or discourage youth in the United States from pursuing careers in aviation

Trends Subcommittee Process

Met Weekly

- Virtual meetings with subcommittee and FAA SMEs

Personal Interviews and Outreach

- Task Force members and other stakeholders

Program Survey

- Deconstructed our task to determine the core questions underlying our assignment and turned that into a survey

Youth Survey

- Identified need to target young people in aviation

Surveys



Coordinated with Women in Aviation Advisory Board Member, Rebecca Lutte, Ph.D. Associate Professor, University of Nebraska Omaha and Chair of the “Understanding the Problem and Industry Trends” subcommittee



Refined survey questions based on feedback and discussion; used survey as a basis for interviews



Youth Survey: targeted post-secondary students intending to have a career in aviation/aerospace *(enrolled in higher education, aviation maintenance school, flight school or technical program)*



Program Survey

Programs that work well and why

Best age to reach young people

Opportunities to inform and engage parents

Role teachers and counselors play

Best approaches to inspire students

Excluding Covid-19 impacts, what are trends

Impediments and why aviation is not a career choice

Tracking placement into the aviation workforce



36+ interviews

Youth Survey

What inspired the responder to pursue a career in aviation/aerospace

What age did the responder first get interested in aviation

Role of high school teachers/school counselors

Barriers to entry

340+ responses

Key Takeaways – Program Survey



Programs that Work Well and Why

- **EAA Young Eagles**
 - Parent engagement opportunity
- **Pathway Programs**
 - Corporate commitment and connections to local communities
- **Higher Education Institutions' Outreach**
 - Partnerships with local communities and other organizations
- **Aviation/Aerospace Career Education (ACE) Camps**
- **Civil Air Patrol (CAP)**
 - Provides full training experiences
 - JROTC; including expansion to an aviation component
- **Girls in Aviation Day (Women in Aviation International)**
 - Large exposure opportunity and memorable

Best Age to Engage Youth and How Often

- **Kindergarten**
 - The younger the better; build the interest early
- **Elementary School**
 - Opportunity to get parents engaged; brief, but frequent exposure
- **Middle School**
 - **Formative years; hands-on activities; starting to think about future career; impressionable**
- **High School**
 - Focused on career goals; might be perceived as less impactful age; would benefit from regular touchpoints throughout

Key Takeaways – Program Survey

Opportunities to Inform and Engage Parents

- Field trips
- Facebook groups (*Raising Aviation Teens*)
- **Social media influencers**
- Community and family events (Air Shows)
- **College and career readiness platforms (i.e., Naviance, CareerZone, CareerConnect, Xello)**

Role of Teachers and Counselors

- Key touchpoint to students
- Train the teacher concept; aviation “summer camp” for teachers
- Opportunities for consortium of colleges with aviation programs to invite counselors to visit
- Career fairs; colleges/universities with aviation programs visiting high schools
- Promote foundational math and critical thinking skills
- **College and career readiness platforms**



Key Takeaways – Program Survey



Best Approaches to Reach Youth

- Virtual reality and gaming experiences
- Bring aviation to the classroom
- **Go to where they are (YouTube; Instagram; TikTok)**
- Clubs; speaking events; career days
- Summer camps/hands-on experiences
- Share the wage/salary expectations
- **Get parent buy-in**

Trends

- **Still viewed as predominately white, male-dominated industry**
- Events happen, but not good follow-up
- Enrollment trends in technical education is on the rise
- Increase in drone pilot industry
- Aviation has lost its luster
- **Poor efforts by industry to market itself**

Key Takeaways – Program Survey

Impediments

- **Cost (or perceived cost)**
- The connect the dots piece is missing; entry points are so varied
- Lack of awareness of aviation careers; seems unattainable
- Personal responsibility of entry into and throughout career
- Aligning resources; collaboration among all the programs available to youth
- Lack of representation
- **Parent buy-in**
- Over focus on STEM students

Tracking Program/Measuring Success

- High School and beyond programs have better success tracking
- Generally, teacher/school tracking placement
- **Career and apprenticeship pathway programs track**
- Military path tracked
- **Competitions, scholarship recipients can be tracked**



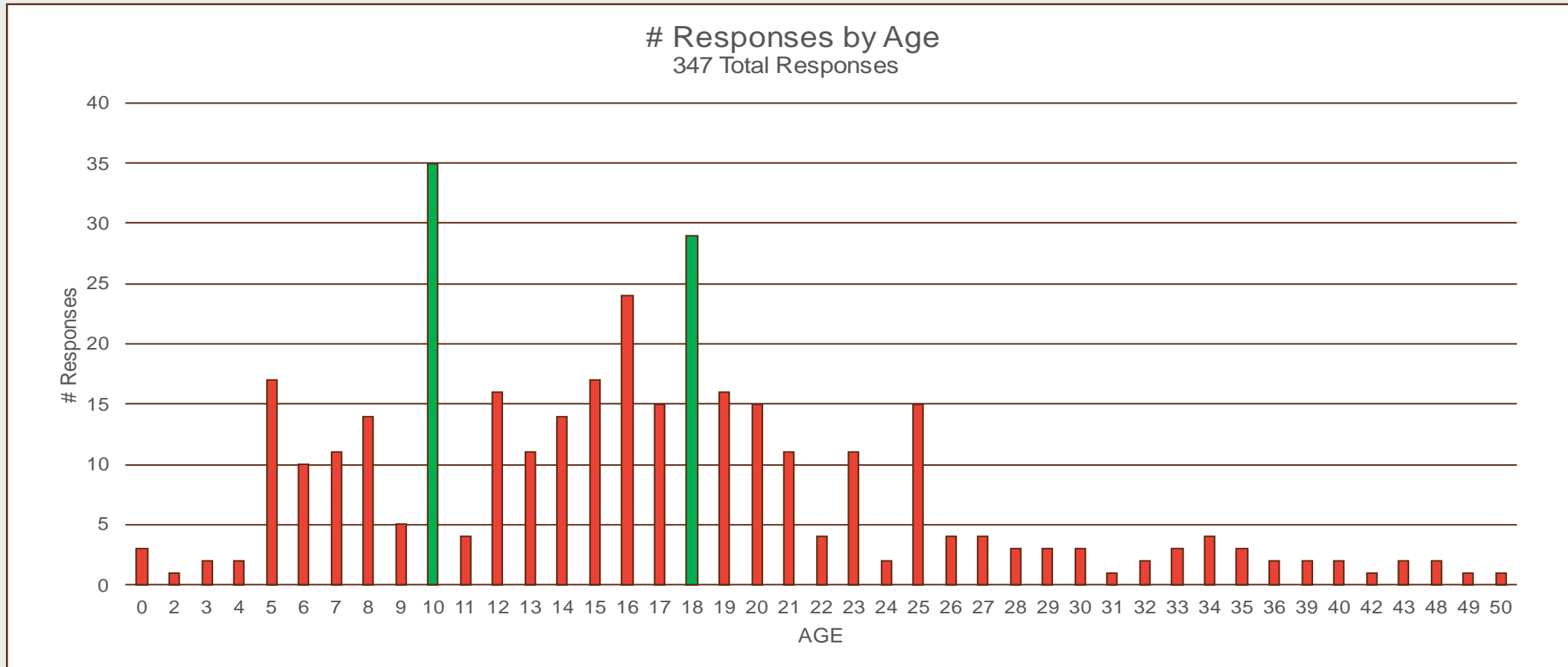
Key Takeaways – Youth Survey

What Fueled Interest/Inspiration

- **Immediate family member, relative or friend working in aviation**
- **Airplanes**
- Opportunity to travel
- **Good paying career**
- Similar to working on cars, but better



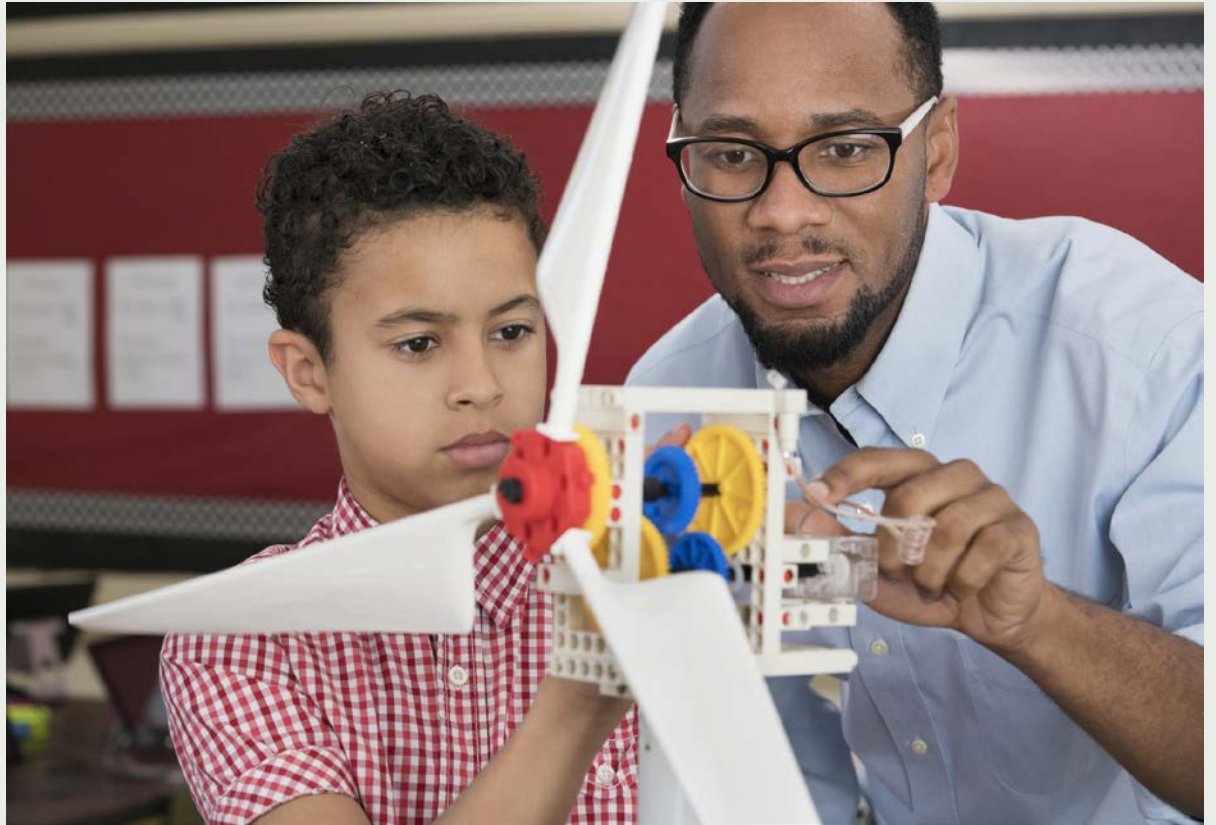
Key Takeaways – Youth Survey



Key Takeaways – Youth Survey

Role of High School Teachers and Counselors

- More classes related to aviation; be more knowledgeable about aviation
- More information about the various aviation careers
- More information about various career paths (including trade programs)
- Class field trips, guest speakers, more extra-curricular activities



Key Takeaways – Youth Survey

Barriers to Entry

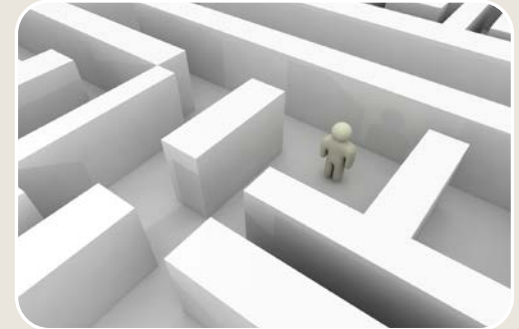


It's expensive
Cost of training and education
Financial barriers
C-O-S-T!



Challenging work
A lot of personal responsibility
Fear and self-doubt; intimidating
Stressful

NOTE: Could be perceived as too hard



Lack of knowledge about career paths
No mainstream exposure
Veers from traditional careers
Not enough information out there

Next Steps

Develop Strategy
for
Recommendations

Formulate
Recommendations

Work to help
inform other
Subcommittees





Questions

Awareness Building

March 31, 2021

Members of the Committee

- Stacey Bechdolt
 - President and Founder of Aerospace Education Resource Organization (AERO)
- Joey Colleran
 - Director of Customer Success at Redbird Flight Simulations
 - Board Member of University Aviation Association
- Whitney Dix
 - Manager of Dispatch Training at Southwest Airlines
- Captain Jennifer Henderson
 - Engineering Test Pilot/Chief Pilot of 737 at Boeing
- Amy Voss
 - Regional Training Manager at Cirrus Aircraft
 - Co-host “The Flight School Business Lab” podcast

Charge to the Subcommittee and Questions to Consider

- Consider how the Administration; air carriers; aircraft, powerplant and avionics manufacturers; aircraft repair stations; and other aviation stakeholders can coordinate efforts to support youth in pursuing careers in aviation.
1. How are the FAA, employers, non-profits and others currently involved in workforce development?
 2. What would be the best structure to having these groups work together and use best practices to reach young people?
 3. Are there existing “umbrella groups” that could be leveraged to provide a “one-stop-shop” for both organizations, students, parents and educators to learn more about aviation?

Approach to the Work

- Developed questions and topics that support answering our three tasks
- Outlined our questions to develop support topics
- Divided the topics amongst our committee members
- Interview stakeholders
- Work with and support other committees
- We will determine recommendations on research and gap analysis
- Recommendations will include how to integrate across industry

Key Observations

How are the FAA, employers, non-profits and others currently involved in workforce development?

- Education initiatives
- Funding mechanisms
- Outreach and work experience opportunities
- A lot of information and programs available, but lack of partnerships and connections between the organizations

Key Observations

What would be the best structure to having these groups work together and use best practices to reach young people?

- Establishing and developing key partnerships
- Having educational organizations and business stakeholders work closely together and in sync
- Social media influence
- Virtual experience and education

Are there existing “umbrella groups” that could be leveraged to provide a “one-stop-shop” for both organizations, students, parents and educators to learn more about aviation?

- Yes! But can any one of them be leveraged as a “one-stop-shop”?
- Most have hurdles that would have to be overcome
- Creation of a new group/platform to achieve this goal?
- Task Force feedback!

Next Steps

- Applying the Trends Subcommittee survey results and to our tasks
- Gap analysis looking at what is currently being done for question #2
- While there are no one-stop shops today...
 - Research what should be included and how to coordinate with stakeholders
 - Begin searching for groups that could build a one-stop shop for students, parents and educators to learn more about aviation careers

Funding Subcommittee

March 31, 2021

Members of the Funding Subcommittee

Ralph K. Coppola

Chair, Funding Subcommittee
Founder & Executive Director, Real World
Design Challenge & President
RKC International

Tammera L. Holmes

President & CEO of AeroStar Consulting
Corporation & AeroStar Avion Institute

John Huff

VP of Human Resources, HAECO Americas

David Purser

Aviation Physics Instructor
Karnes City High School

Jonni Christian

FAA AVSED

Michelle Christensen

FAA AVSED

Key Terms & Acronyms

- **Aerospace** - refers to aviation and space
- **AVSED** - Aviation & Space Education
- **Cage Code** - Commercial And Government Entity Code
- **DoD** - Department of Defense
- **DoT** – Department of Transportation
- **DUNS Number** - Data Universal Numbering System
- **FAA** - Federal Aviation Administration
- **Funders** – Corporate Funding Source
- **List** – Aerospace Education Program List
- **Programs** – Aerospace Education & Training Programs
- **RFP** – Request for Proposal

Charge to the Youth Access to American Jobs in Aviation Task Force also known as YIATF

060

Overall goal of the YIATF is to provide recommendations and strategies that (1) facilitate and encourage high school students in the US, beginning in their junior year, to enroll in and complete technical education courses that would prepare them to enroll in a course of study related to an aviation career at an institution of higher education or trade school. (2) Facilitate and encourage those students to enroll in a course of study related to an aviation career including aviation manufacturing, engineering and maintenance at an institution of higher education including a community college or trade school. (3) Identify and develop pathways for those students who complete a course of study to secure registered apprenticeship, workforce development programs or careers in the aviation industry in the US.

Specific charge to the Funding Subcommittee: *Identify potential sources of government and private sector funding, including grants and scholarships that may be used to carry out the recommendation and strategies and to support youth in pursuing careers in aviation.*

Questions to Consider

- What are the federal, state and industry funding programs that can assist individual students in attaining training/licensure/certification, etc.?
- Many aviation associations provide scholarship funding for students—is it enough and how can students easily find that information?
- Are there foreign countries to look to for best practices in terms of funding workforce development?
- Are there companies funding initiatives right now that are interested in scaling those projects?

Additional Questions to Consider

Goal: Obtain ongoing funding to support programs that lead to students going into the aviation workforce.

Questions that help address the goal:

- How can funding be generated to support quality aviation education programs nationally?
- How can quality aviation education programs be identified?
- How is it possible to ensure all quality aviation programs are eligible for funding support?
- How can the funding mechanisms to support quality aviation education programs be used to encourage more students to enter the aviation workforce?

Approach to the Work

- Work as a group
- Have action steps after each meeting
- Identify specific areas of research
- Meet with other YIATF Subcommittees
- Meet with the Women in Aviation Advisory Board
- Meet with the FAA AVSED Program
- Determine recommendations based on research, Task Force and Funding Subcommittee charge and goals
- Consider benefits for each recommendation
- Write the Funding section of the report.

Approach to the Work: Funding Subcommittee Task Outline

064

Goal: Obtain ongoing funding to support programs that lead to students entering the aerospace workforce.

Obtain Funding

- Develop an incentive model that leads to obtaining the funds needed to support aerospace education programs.
- Determine how much funding can be obtained to address the aerospace workforce problem nationally.

Identify Quality Aerospace Programs

- Identify the most effective way to spend the funds to solve the problem.
- Identify programs that are solving the aerospace workforce issue.
- Develop a measure of success for aerospace education programs.

Approach to the Work: Funding Subcommittee Task Outline Continued

Market Funding Opportunities to Aerospace Education & Training Programs

- Develop a plan to inform aerospace education and training program providers about the available funds.
- Develop funding eligibility criteria.

Market the Aerospace Programs to Corporate Funders

- List the aerospace programs and market them to the corporate funders.

Coordination

- List groups to coordinate with.
- List objectives for coordination with each group.

Funding Requirements

- To increase the number of qualified aerospace workers, a funding strategy to provide support to aerospace education programs that impact the aerospace workforce is needed.
- The funding strategy needs to be both national in scope and provide ongoing support to aerospace education programs in order to impact the aerospace workforce.

Key Observations

Draft Funding Subcommittee Recommendations

1. Incentive-based funding solution and proposed legislation
2. Aerospace education program list

Draft Funding Subcommittee Recommendations

068

1. Incentive-Based Funding Solution and Proposed Legislation

- The U.S. Department of Defense (DoD) and the U.S. Department of Transportation (DoT) appropriation legislation should include 0.25% in the budgets of all aerospace contracts with DoD and DoT to be used for aerospace education programs that demonstrably lead to jobs in the aerospace and defense workforce.
- The proposed legislative modification is designed to connect corporate funders and programs to work collaboratively to address the aerospace workforce need by providing incentives to both groups.
- To be eligible for funding, aerospace education and training programs need to show how they address aerospace workforce diversity needs and shortages.
- The 0.25% for aerospace education and training programs should be included in the existing contract budgets.

Draft Funding Subcommittee Recommendations

2. Aerospace Education Program List

- Develop criteria to evaluate how education programs are impacting the aerospace workforce.
- Place programs meeting those criteria on the Aerospace Education Program List.
- Company funders can identify programs that contribute to the aerospace workforce and recruit the programs to be part of companies' responses to RFPs.
- The List will have three tiers based on aerospace education program workforce outcomes that result in getting students in the aerospace workforce.
- Programs must enter data used to evaluate the program's contribution to the aerospace workforce in order to be placed on The List.

Criteria for being on the Aerospace Education Program List

070

- Total number of students the program impacts.
- Total number of minority students the program impacts. These include: African Americans, Hispanics, Native Americans and Pacific Islanders.
- Total number of female students the program impacts.
- Percentage of students who moved into an aerospace related program after finishing K-12. This can be a college, university, trade school, apprenticeship program, etc. as long as it is a program that is preparing people for post secondary aerospace careers.
- Percentage of students from a sample that go into the aerospace workforce.
- Percentage of the students from the program going into the aerospace workforce with a large enough sample to be able to generalize to the whole population.
- Percentage of the students holding an aerospace job for 2 or more years.

Tier 1: Ranking criteria: Impact on the aerospace workforce

071

Program Name:		
Criteria	Raw Score	Rating 1-5
Total number of students the program impacts.		
*Total number of minority students the program impacts. These include: African Americans, Hispanics, Native Americans and Pacific Islanders.		
*Total number of female students the program impacts.		
Total Rating Score		
* The information in these criteria categories is not required to be in Tier 1 but they increase the overall score in the rating.		

Tier 2: Ranking criteria: Impact on the aerospace workforce

072

Program Name:		
Criteria	Raw Score	Rating 1-5
Total number of students the program impacts.		
Total number of minority students the program impacts. These include: African Americans, Hispanics, Native Americans and Pacific Islanders.		
Total number of female students the program impacts.		
Percentage of students who moved into an aerospace related program after finishing K-12. This can be a college, university, trade school, apprenticeship program, etc. as long as it is a program that is preparing people for post secondary aerospace careers.		
Total Rating Score		
All these criteria categories are required to be in Tier 2.		

Tier 3: Ranking criteria: Impact on the aerospace workforce

073

Program Name:		
Criteria	Raw Score	Rating 1-5
Total number of students the program impacts.		
Total number of minority students the program impacts. These include: African Americans, Hispanics, Native Americans and Pacific Islanders.		
Total number of female students the program impacts.		
Percentage of students who moved into an aerospace related program after finishing K-12.		
Percentage of students from a sample that go into the aerospace workforce.		
*Percentage of the students from the program going into the aerospace workforce with a large enough sample to be able to generalize to the whole population.		
*Percentage of the students holding an aerospace job for 2 or more years.		
Total Rating Score		
* The information in these criteria categories is not required to be in Tier 3 but they increase the overall score in the rating.		

Market the Funding Opportunity to Aerospace Education Programs

074

Steps to get the Funding

1. Fill out the Aerospace Education Program List criteria online.
2. Ensure your program has the following:
 - Cage Code
 - DUNS Number
 - Have a sound accounting system
3. Learn about Department of Defense (DoD) and Department of Transportation (DoT) contracting requirements.

Get the Information Out to Aerospace Education Programs

- Government agencies
- Non-Government Organizations (NGOs)
- Institutions of higher education
- Professional societies
- Business organizations
- Education programs
- Schools

Market the Aerospace Education Programs to Companies

Identify Education Programs that Contribute to the Aerospace Workforce

- Once the proposed legislation is included in the DoD and DoT contract RFPs the companies seeking these contracts will need to know how to identify the aerospace education programs to include in their proposals.
- Getting the information to the companies is key to success. Language will be included in the RFP's directing the companies to the Aerospace Education List.

Additional Marketing of the Aerospace Education Programs to Companies ⁰⁷⁶

- U.S. Department of Defense Office of the Undersecretary for Research and Engineering
- U.S Department of Transportation (DoT)/Federal Aviation Administration (FAA)
- Aviation Week
- Aerospace Industries Association (AIA)
- American Institute of Aeronautics and Astronautics (AIAA)
- National Defense Industries Association (NDIA)
- The General Aviation Manufacturers Association (GAMA)

Next Steps

Collaboration

Meet with the YIATF Subcommittees

- Trends
- Pathways
- Awareness

Meet with the Women in Aviation Advisory Board Subcommittees

- Understanding the Problem & Industry Trends
- Training & Recruiting
- Mentoring & Professional Development
- Success Stories

Next Steps Continued

- Additional Research
- Coordination of the development of materials with other Subcommittees.
- Write a draft Funding Subcommittee Report Chapter for consideration.

Expanded Pathways Subcommittee

March 31, 2021

Members of the Committee

- Joanne Damato, CAM, VP, Educational Strategy & Workforce Development; National Business Aviation Association
- Dr. Nancy Shane Hocking, Manager, Pilot Gateway Programs; JetBlue Airways Corporation
- James Hall, Dean, Aviation Technologies; Wichita State University
- Dr. Joel English, Executive Vice President; Centura College
- Captain John Hornibrook, VP; The Boeing Company
- Ryan Goertzen, VP Maintenance Workforce Development; AAR
- Ed Cormier, Program Analyst, FAA

Charge to the Subcommittee and Questions to Consider

- *Identify industry trends that encourage or discourage youth in the United States from pursuing careers in aviation.*
- What are the existing programs that work well in reaching youth?
- What are the impediments to reaching young people and why is aviation not considered as a career choice?
- What role do teachers and guidance counselors play in shaping a student's decision to pursue aviation?

Approach to the Work

- Case Studies

- Fly Norfolk
- AeroStar Avion Institute
- Oklahoma Career Tech
- S.H.E. Can STEAM Summer Camp by the National Air & Space Museum
- OBAP ACE Academies

- Interviews

- FAA AVSED
- DODSTEM
- Boys Scouts – Aviation Merit Badge
- Kitsap County School Aviation/STEM Program

Key Observations

083

High School Programs Expansion

- An Industry-Recognized Credential Earned as Part of the Program
- Nationally-Approved Curriculum
- Removal of Cost Barriers for High Schools and Students
- Motivation and Benefit for the Secondary and Post-Secondary Partners to Participate

Importance of Teachers and Parents

- “You can’t be it if you can’t See It”
- Inspired teachers are contagious and impact not only students but parents.
- Creation of a Summer Teaching Academy Program.
- Industry must support through travel, hotels and transportation

Information is Critical

- Information is fragmented; lack of centralized clearinghouse for “one stop shopping”
- Many pathways exist but information on how to find/enter them is not readily available to all
- Lack of tracking of students in existing programs means they are missing key career information

Next Steps

- Develop the concepts of a Nationally Approved curriculum leading to industry recognized credentials.
- Develop the concepts of a Summer Teaching Academy Program.
- Develop the concept for a robust national aviation website.
- Creation of a Virtual Counselor platform.

Federal Aviation Administration
STEM and Aviation and Space Education (AVSED)
Presentation for the
Youth Access to American Jobs in Aviation Task Force

085

By: Sean Torpey

Date: March 31, 2021



**Federal Aviation
Administration**



FAA and STEM AVSED

086

- FAA's STEM and Aviation and Space Education program history
- FAA Reauthorization and Aerospace Workforce Steering Committee (AWSC)
- STEM AVSED Working Group



Federal Aviation
Administration

Working Group Outcomes

- Corporate STEM AVSED Strategic Plan for Fiscal Years (FY) 2021-2024
- Recommendations for Agency-wide STEM AVSED governance
- Realignment of the program under the office of National Engagement and Regional Administration, part of the Office of Policy, International Affairs and Environment
- Proposed revision to our Order on the STEM AVSED Program



Accomplishments

- Established the Aviation Workforce and Education Division in spring 2020.
- Hired additional staff in spring/summer 2020, and have dedicated analysts in six of nine regional offices
- Combined existing staff from other offices into this division
- Making headway fiscally. Our funding request for FY 21 was approved. Funding requests for FYs 22 & 23 are in process.
- Supporting the Task Force subcommittees with subject matter experts from this division



Strategic Plan for FY21 – FY24: Four Goal Areas

089



Goal 1

Pipelines and
Pathways to
Aerospace
Careers



Goal 2

STEM Education
for Every
Student



Goal 3

Strategic
Partnerships to
Maximize the
Benefits



Goal 4

Cross-Agency
Collaboration
to Optimize the
Program



**Federal Aviation
Administration**

Detailed view: Goal 1

090

Goal 1 **Pipeline & Pathways** **to Aerospace Careers**



Objectives

1. Implement pipeline outreach activities aimed at introducing students to opportunities in aerospace careers
2. Develop focused outreach efforts to address career or skill area shortages across the aerospace community based on data and stakeholder input
3. Create opportunities for ongoing engagement with students to encourage participation in pathway activities
4. Leverage critical influencers, (e.g., educators, parents, etc.) and provide them with tools to inspire students to pursue aerospace careers



**Federal Aviation
Administration**

Detailed view: Goal 2

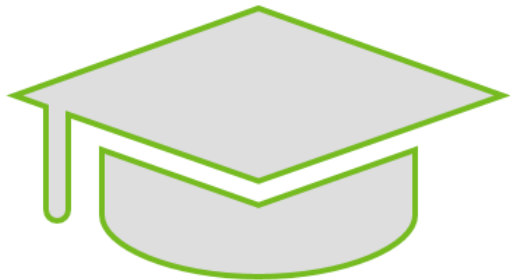
091

Objectives

Goal 2

STEM Education for Every Student

1. Use a data-driven approach to identify populations with diverse backgrounds to conduct targeted outreach
2. Identify and implement strategies to effectively conduct outreach to underrepresented populations
3. Provide FAA employees involved in STEM with training, resources, tools and opportunities to incorporate equity, diversity, and inclusion into their outreach



Federal Aviation
Administration

Detailed view: Goal 3

092

Objective

Goal 3

Strategic Partnerships to Maximize Benefits

1. Form strategic partnerships with government organizations at all levels, as well as with key stakeholders in industry and academia, and build relationships aimed at reaching our STEM and aerospace education goals



**Federal Aviation
Administration**

Detailed view: Goal 4

093

Goal 4 Cross-Agency Collaboration to Optimize the Program



Objectives

1. Develop, support, and implement policies, procedures, and processes that enable cross-Agency collaboration on STEM and aerospace education activities
2. Optimize use of FAA internal resources, including STEM AVSED Outreach Representatives
3. Ensure reliable funding stream for cross-Agency STEM and aerospace education activities
4. Develop and implement effective approaches for data collection, analysis, and reporting for STEM-related activities across the Agency



**Federal Aviation
Administration**

Contacts

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Federal Aviation
Administration

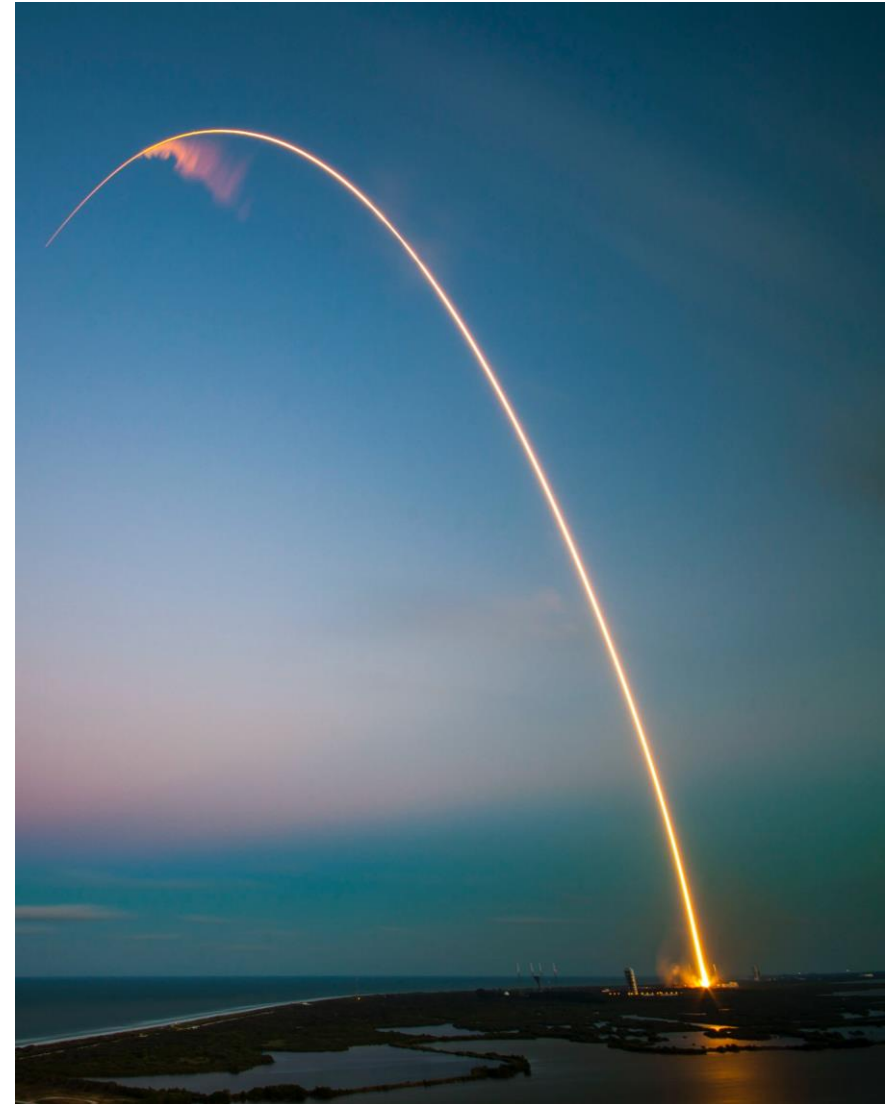
Why Launch FA/AW News?

- Workforce coverage restricted to pilots & technicians
- No assessment of promotion and education
- No coverage of funding strategies, barriers to entry, required legislative/regulatory changes
- No tools to help industry compete against Silicon Valley & gaming
- No coverage of shortages in other disciplines or skills needed for the future
- How emerging technology will change the workforce and business



Accomplishments

- The first comprehensive list of education and corporate workforce development programs
- First comprehensive list of women in aviation, aerospace & defense
- Coverage of
 - ✓ future workforce needs and skill gaps
 - ✓ how emerging technology will change the workforce and business
 - ✓ how education is changing
 - ✓ problems with diversity equity & inclusion programs
- Development of Global Assessment of workforce and skills for all segments



Problems

- Wrong assumptions
- Not about aviation alone
- We keep reinventing the wheel
- Too many people are looking at different facets of the problem
- Little general assignment press coverage of resources, opportunities
- Silos



We Face Incredible Challenges

- Changing trends in education Pre K-Higher Ed, aviation training, industry needs
- Developing industry-wide education mandate
- Diversity, Equity & Inclusion
- Creating life-long continuing education programs
- Provide schools with modern tools to prepare students for aircraft electrification, modern engines & avionics





Connecting the Dots....

- Education & corporate workforce development programs
- Between social justice movement and workforce development
- Between workforce policies and diversity, equity, inclusion
- Between organizations for equal treatment and diversity, corporate workforce development programs and corporate culture reform



What We Need - Publicity

- Stories in publications targeted a youth, educators, kids, under-represented groups
- How young is too young? Pre-school is the place to start.
- Messages – Cool advanced tech & innovation, education & funding strategies



What We Need - Student Funding


- Scholarships
- Expanding Scholarships, Fed/State to non-traditional schools
- Developing new resources

Recommendations

- Create Workforce Ecosystem – National Center for Advancement of Aviation?
- Work with diversity groups, leveraging contacts and skills while crafting a Just Culture.
- Develop college/industry K-higher ed mentoring programs
- Develop relationships with the right media and materials for parents, guidance counselors, kids and diversity pubs



My Wish List

- 
- Creating the tools for aviation/aerospace to compete with other industries
 - Developing tools to communicate with youngsters, parents
 - Working with Aviation/Aerospace PR Pros to gain access to the right publications
 - Better Design for Women in Aviation, Aerospace & Defense
 - Better design for Education Resources -- State by State, Country by Country Guides to Resources
 - Diversity Lists for Black, Latino, LGBTQ

Civil Air Patrol Aerospace Education

Dr Jeff Montgomery





CAP

Overview

- Who we are
- CAP major missions
- Focus - Aerospace Education (AE)
 - Products & programs
 - Underserved
 - Metrics
- Q & A



Our History

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First CAP

Board Chairman

General Carl A. "Tooey" Spaatz

1st Chief of Staff of the USAF



1941

Founded,
December 1



1946

Congressionally
Chartered as a
Nonprofit Corporation



1948

Named as an
Auxiliary of the
US Air Force



2015

Named as USAF
"Total Force
Partner"



**We are unique... as both a
501(c)3 nonprofit corporation**

AND

**Part of the Total Force as the
USAF Auxiliary**

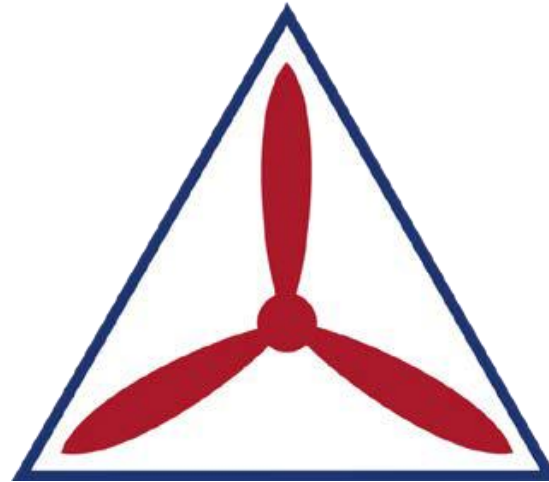


Our Purpose

Supporting America's **communities**
with emergency response, diverse aviation and ground service,
youth development, and promotion of air and space power.

Emergency Services/Operations

- Search & Rescue/Disaster Response
- Homeland Security
- Counterdrug
- Humanitarian Services
- Orientation Flights



***3 Programs
Which Propel
Our Mission***

Cadet Programs

- Leadership & Character Development
- Cyber

Aerospace Education

- STEM Advancement
- Curriculum
- K-12 Teacher Support



Our Reach



**Value of CAP Members' Service
Hours to America \$193M+**

2020 Statistics

Membership – Our Volunteers

Adult Members	33,865
Cadets	21,723
Total	55,588

Units

NHQ, Region, Wings, Groups, Squadrons	1,442
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Equipment

Aircraft	560
Small UAS	2,000
Gliders	47
Hot Air Balloons	2



Aerospace Education (AE) Mission

110

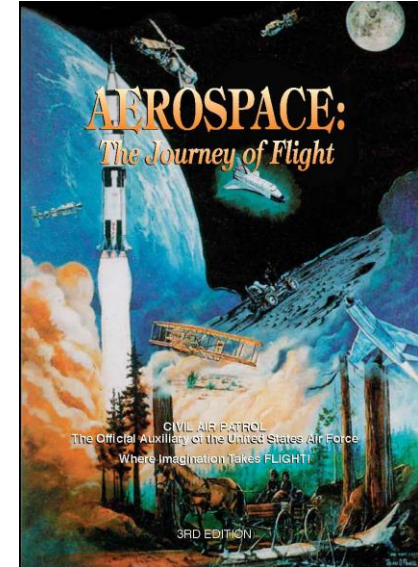
- Empower members with opportunities & resources to promote AE-related STEM education & careers
 - Promote AE & STEM
 - internal mission - cadet & adult members
 - external mission - general public – schools, teachers & organizations





AE Products & Programs

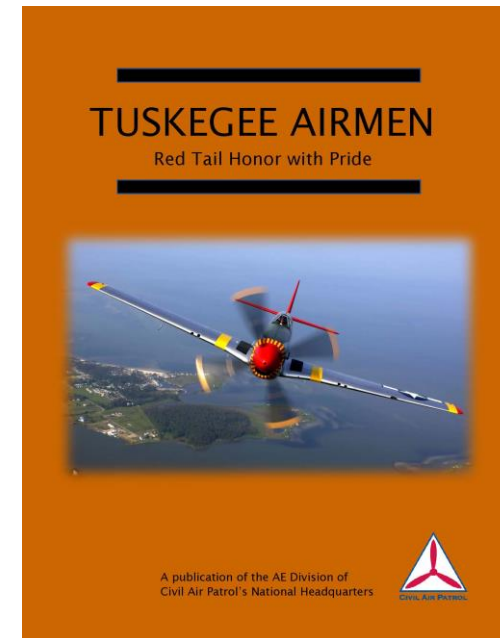
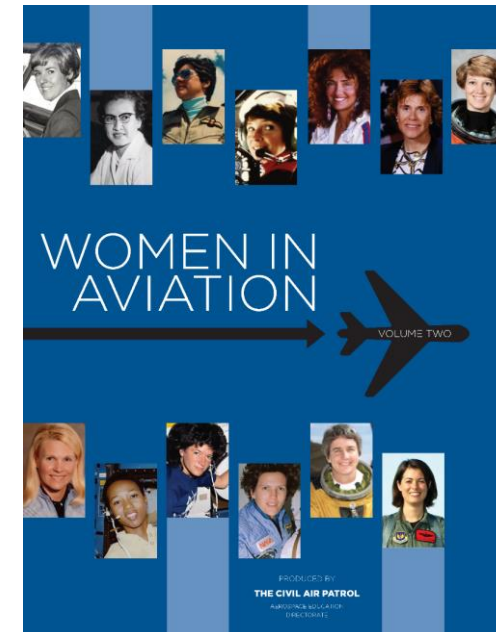
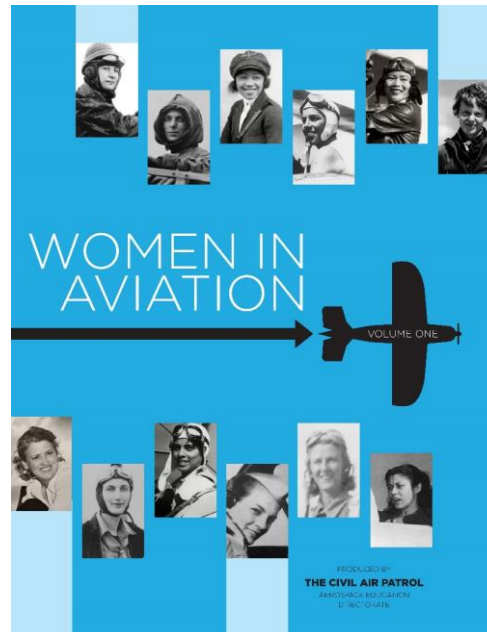
- Best way to accomplish mission – products & programs
 - Over 40 curriculum products
 - K-12 & beyond
 - Meet national educational standards
 - AE/STEM related
 - Contain hands-on activities
 - Career emphasis





AE Products

- Newly developed curriculum
 - Women in Aviation I & II
 - Tuskegee Airmen





AE Programs

Aerospace Education Members (AEMs)

AEMs (teacher members)

- Special membership category - \$35
- They promote AE/STEM in classrooms
- Use CAP products/programs
- Expand our outreach and impact
- In-kind free renewals





Aerospace Connections in Education (ACE)

114

- K-6 grades
- 21 grade-specific lesson plans
 - character development, physical fitness & academics - all aerospace theme
- 55,250 students, 513 teachers, 417 schools, in 47 CAP wings
- Exposure to CAP & AE





Adopt-a-Classroom

- Launched mid December
- Squadrons sponsor 6th classes
 - expanded to 5th-8th grades
- Key – interaction between sq & teachers
- Intro AE/STEM
- All 8 CAP regions involved
- 19 wings; 34 teachers; 1,600 students





STEM Kit Program

- Began FY13, started with 5 kits, now 20
- Filled over 15,000 apps; over 30,000 kits
- 99% squadrons have at least 1
- Distributed to squadrons and classrooms
- 80% youth more interested in AE/STEM careers
- Reached over 400,000 in FY20
- Free and keep





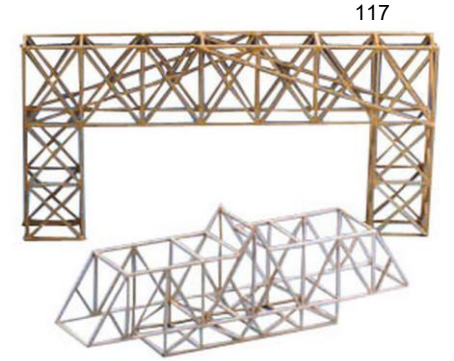
Astronomy



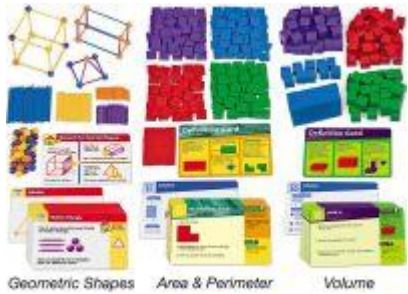
AngLegs



Bee-Bot/Code & Go Mouse



Bridge Building



Build & Learn
Geometry



Cross Country
Navigation



Flight Simulator



NewBeeDrone



Quadcopter



Raspberry Pi



Rocketry



Sphero Mini/Sphero
SPRK+



STEM Kit Program

Provides free Science, Technology, Engineering, and Mathematics resources for hands-on, inquiry-based learning that members apply for online, receive, and KEEP!

Available STEM Kits:

AngLegs

Bee Bot/Code & Go Mouse

Build & Learn Geometry

Flight Simulator

NewBeeDrone

Raspberry Pi

Remote-Controlled Aircraft

Robotics

Snaptricity

VTOL

Astronomy

Bridge Building

Cross Country Navigation

Hydraulic Engineering

Quadcopter

Ready To Fly Quads

Renewable Energy

Rocketry

Sphero Mini/Sphero SPRK+

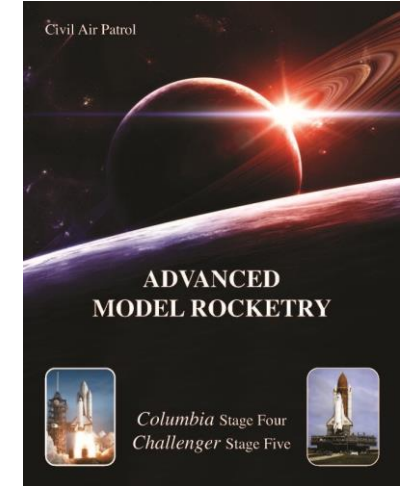
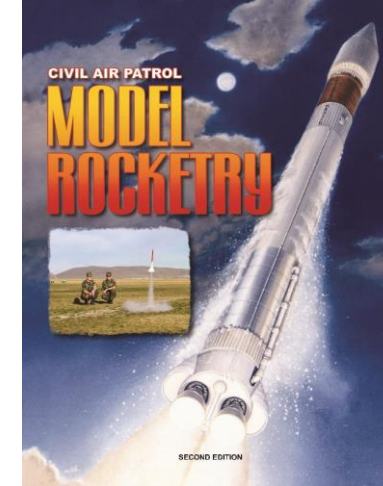
Weather Station

80% of participants have a higher interest in STEM



Additional Programs

- Model Rocketry Program
- sUAS Program
- Stratostar – High-Altitude Balloon
- CyberPatriot
- StellarXplorer
- TOP Flights

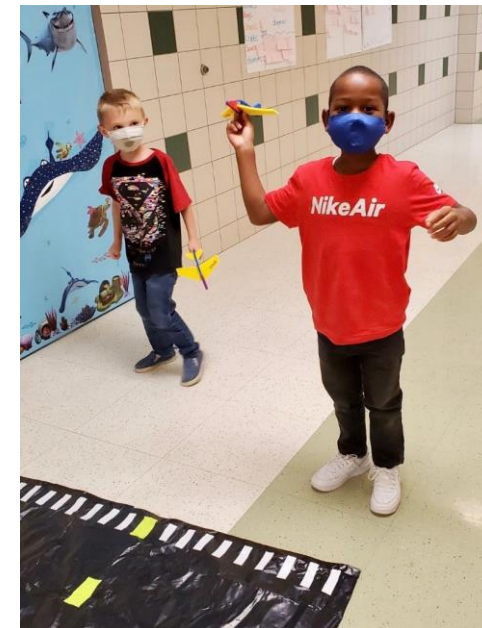




CAP

Diversity & Ethnicity

- Gender – male 73%, female 27%
 - AE teacher members – female 70%, male 30%
- Ethnicity
 - White 71%
 - Hispanic 11%
 - Asian 8%
 - Black 5%
 - Two or more races 5%





Underserved

CAP Strategic Plan

AE Objective

- Provide increased support to Title I schools
 - Target teachers and schools to maximize engagement with diverse and underserved communities
 - emphasizing programmatic efforts
 - communicating/ coordinating with squadrons
 - demographics, surveys, evaluations
 - Title I schools – AEMs – 55%; ACE K-6 teachers – 71%



Program Outcomes

AEM (teachers) Outcomes

- 83% more interested in AE/STEM
- 65% better teamwork
- 44% improved behavior
- 17% improved classroom scores
- 14% better attendance

STEM kit Outcomes

- Pre & Post tests: 28-point average gain
- 80% more interested in STEM



AE

Program Successes

- AEM – before COVID 19 – teacher members – 7,200
- ACE – before COVID 19 – 76,000 students in 517 schools
- STEM Kits – in 8 years reached over 2 million students



AE

Areas of improvement

- Trying to provide everything for everybody
 - budget doesn't support
 - prioritize and focus
- Retention efforts
 - 1st year – 42%
 - 2nd year – 35%
 - 3rd year – 28%



Q & A

We Do More than Fly Drones!

Black Girls Drone Inc.,
Ernanda White
Founder, CXO, Executive Director
Vice-Chair NCTCOG UAS Training Group

<https://www.blackgirlsdrone.org>



Drones are..

Tech Tools that automate risky workforce tasks which historically have been performed manually.

Used Globally in Operations from Military to Real Estate.

Career Pathways into high paying Aviation, Aerospace, and Engineering Careers.

Most likely to be flown by boys and not girls.

Widely popular in Film, Agriculture, Solar and Energy and Construction.

Easily misunderstood as being only good for toys.



We Change the Narrative!

Black Girls Drone Inc. wants to increase representation in the Drone UAS Aviation industry for more women and girls. Especially for women and girls of color from underserved communities with transformational soft **skills** needed to enter high paying tech aviation careers.

Black Girls Drone Inc. has provided Aviation and Aerospace Education for Career Awareness to promote continuing education, career exploration and internship opportunities for workforce to young women and girls in middle school and high school to college from underserved communities. **We serve Gen Z! (ages 16-26)**

Black Girls Drone Inc. provides introduction into the Aviation ecosystem by introducing the technical, opportunity and earning potential of becoming **Drone Literate**.

“Get Lit”- “Drone Lit”

Top 10 skills
of 2025

128

WORLD
ECONOMIC
FORUM

Type of skill
● Problem-solving
● Self-management
● Working with people
● Technology use and development

- Analytical thinking and innovation
- Active learning and learning strategies
- Complex problem-solving
- Critical thinking and analysis
- Creativity, originality and initiative
- Leadership and social influence
- Technology use, monitoring and control
- Technology design and programming
- Resilience, stress tolerance and flexibility
- Reasoning, problem-solving and ideation

Source: Future of Jobs Report 2025, World Economic Forum

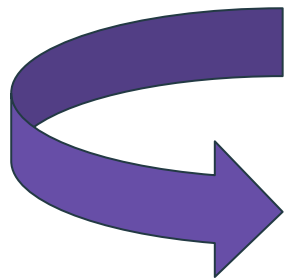


Black Girls Drone

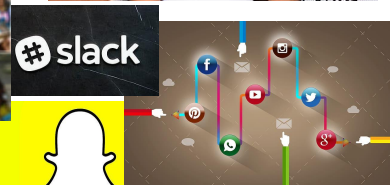
Take Flight with the Future of Drones



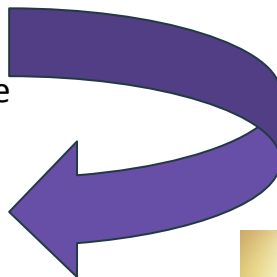
Accelerating the Workforce Pipeline



Middle School Aviation
Social/ Emotional,
Literacy Clubs, Camps
Career, Community



High School Aviation
Social Impact, Summer
Interns, Camps, Compete



Collegiate Aviation Social Media
Community , Networking
Workforce Accelerators,
Interns, Corporate Sponsors,
Career Entry Programs



Youth Aviators for Workforce

Our 2021 Career Objectives for our high school to college girls:

Partner with schools, career technical education campuses to increase participation for girls to enter the Aviation Workforce: Aviation Pilots, Aviation Maintenance, Aviation Manufacturing, Airport Planning, Air Traffic Controllers, UAS Operators, Drone Engineers, AAM, UTM, Airspace Mapping, Aerospace Engineers, Drone Technology, Gaming, Coding, Software Programming , Hardware , Data Science, Artificial Intelligence, Robotics, Inventory Control, Quality Assurance Specialists, Communications (FCC) and Logistics, Dispatchers

Small parcel delivery

Automatically plan and execute the optimal routes for drone deliveries of clothing, food, and other small packages.

Medical deliveries

Cargo transportation

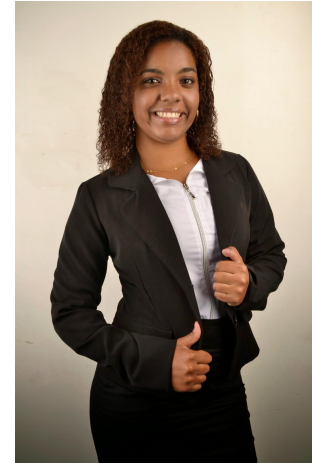
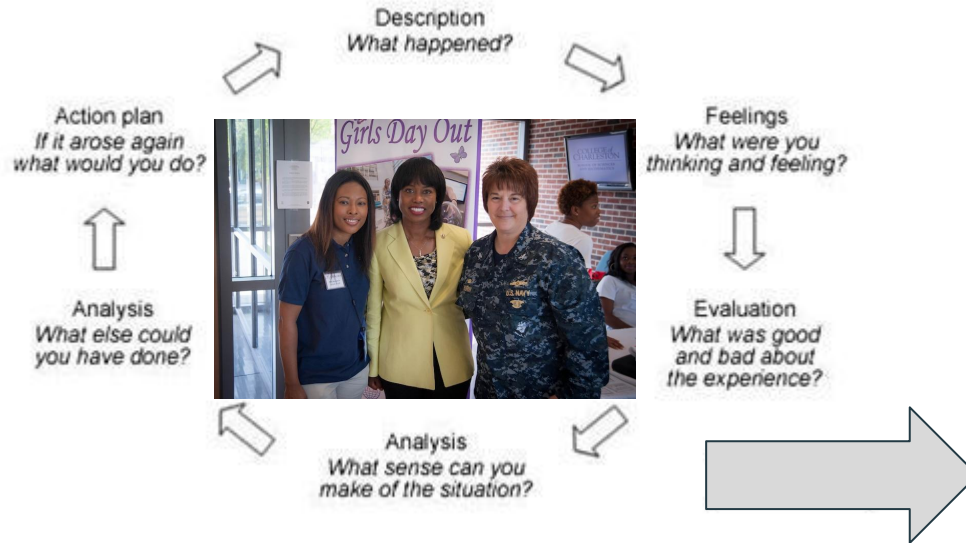
[Learn more](#)



“The Future of Flight is in Your Hands”



YIA Diversity Equity and Inclusive Council



Aviation Careers? Where Do I Belong?

- **Military (USN, USMC, USAF, USA, USCG)**
- **Government (State, Federal)**
- **Corporate/Business**
- **Law Enforcement (Local, State, Federal)**
- **Customs & Border Patrol**
- **National Oceanic and Atmospheric Association (NOAA)**
- **Firefighting**
- **Flight Instructor**
- **Mosquito & Pest Control**
- **Agriculture**
- **Cargo (FedEx, UPS, DHL, Amazon)**
- **Commercial Airlines (SW, American, Boeing, Alaska)**
- **Charter (Air Taxi)**
- **Medical (Organ deliveries, patient transport, evac)**
- **Media (Traffic, news, etc.)**
- **Air Tours**
- **Airshow Stunts/Racing**
- **Test Pilot**
- **Astronaut**



- **Air Traffic Control**
- **Dispatchers**
- **Flight Attendant**
- **Aircraft Design**
- **Airport Design**
- **Airspace Planning**
- **Aircraft and Avionics Mechanic**
- **Manned & Unmanned (Drones) Drone Operator**
- **Agriculture**
- **Real Estate**
- **Media**
- **Law Enforcement**
- **Military**
- **Construction**
- **Engineering**
- **Wildlife & Forestry**





"No one had ever heard of a black woman pilot in 1919. I refused to take no for an answer."

-- Elizabeth "Bessie" Coleman

Representation Matters



In the words of Vice President Kamala Harris: “If she can see it , then she can be it.”

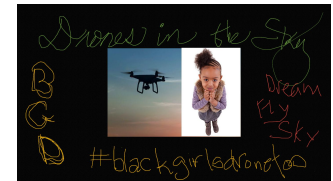
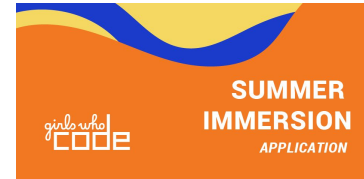
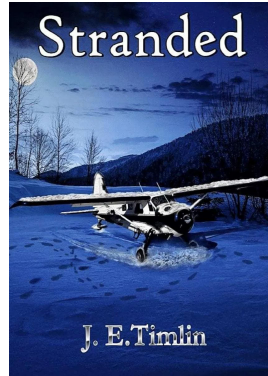
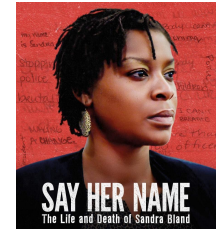
The statistics tell us the story. There are too few. The lack of diverse skill sets and experiences leave voices left unheard as we innovate today for our future.

We require social impact and strong social capital to help us (Black Girls Drone Inc.) to raise awareness, take a parent and child learning approach to accelerate career tech readiness and skill development.

We implore the hands of community, civic, state and federal leaders to help us accomplish this task with broad strokes of inclusive work.



Educate a Girl, Empower the World



Thank You!



Visit Us: <https://www.blackgirlsdrone.org>

Drones in Aviation Summer Camp Register: <https://forms.gle/Z2iRW9GbmDva8TrA7>

138
EMBRAER^X



EVE Urban Air Mobility

EVE

MOBILITY REIMAGINED

JOURNEY OF WONDER 50 →



To build and develop **disruptive new businesses** that
transform how people engage with the world.

EMBRAER^X
EMPOWERING PEOPLE, TRANSFORMING BUSINESS.

Eve Urban Air Mobility: Benefitting from Embraer DNA¹⁴⁰

A Top 3 Aircraft OEM and A Long Standing Commitment to Excellence

Key Advantages

- Embraer has an extensive **history of designing, delivering and certifying aircraft on-time and on-budget**, building industry-leading expertise that Eve will be able to leverage
- Combines experience and know-how of Embraer – a clear leader in the aviation industry – with the focus, innovation, speed and agility of a startup
- **Embraer will be a major investor and commercial partner for Eve**, including \$15M invested at the seed stage and a commitment to invest \$15M in the Series A

's 50 Year Track Record of Success

80+

Commercial Airline
Customers

50+

Countries
Served

60+

Military
Customers

1.4K+

Commercial Aircraft
in Operation

10

Seconds Between an
Embraer Aircraft Taking
Off Globally

0.2%

Flight Cancellation Rate
for Embraer Aircraft⁽¹⁾

Eve's Focus: The Need for UAM



Urban Demographics

Over half the world now lives in urban areas and the absolute urban population is expected to double by 2050 to ~70% of the global population⁽¹⁾



Traffic Accidents

Pressure to reduce road traffic injuries, estimated to be the eighth leading cause of death globally for all age groups⁽²⁾



Traffic Congestion

The proliferation of ride-hailing services has increased traffic congestion concurrent with record levels of automobile ownership and historic average commute times⁽³⁾



Environmental Benefits

eVTOLs produce 35% lower emissions than internal-combustion road vehicles traveling the same 100km journey⁽⁴⁾



Democratization of Air Travel

The US Office of Science and Technology Policy (OSTP) recognizes eVTOL and UAM's potential to democratize affordable air travel⁽⁵⁾



Economic Benefits

Increasing public and political recognition of traffic congestion's economic costs, with \$88B estimated in lost 2019 productivity in the United States alone⁽⁶⁾



The Urban Air Mobility Opportunity

Aggregate TAM (Up to 2035)

\$200B Revenue

3B Passengers

50K eVTOLs



MOBILITY REIMAGINED

Eve at a Glance

- Established as an independent company in October 2020
- Previously incubated for nearly four years within EmbraerX
- Developing a complete Urban Air Mobility (UAM) solution
- Successfully conducted flight simulations in July 2020
- Delaware corporation with operations in Brazil and the US

Comprehensive UAM Solution

Traffic Management Solutions

Developing a next-generation air traffic management solution that provides shared situation awareness, enables equitable airspace access.

eVTOL Development¹⁴⁵

Designing, developing and certifying an eVTOL (electric Vertical Take-off and Land)



Fleet Operations

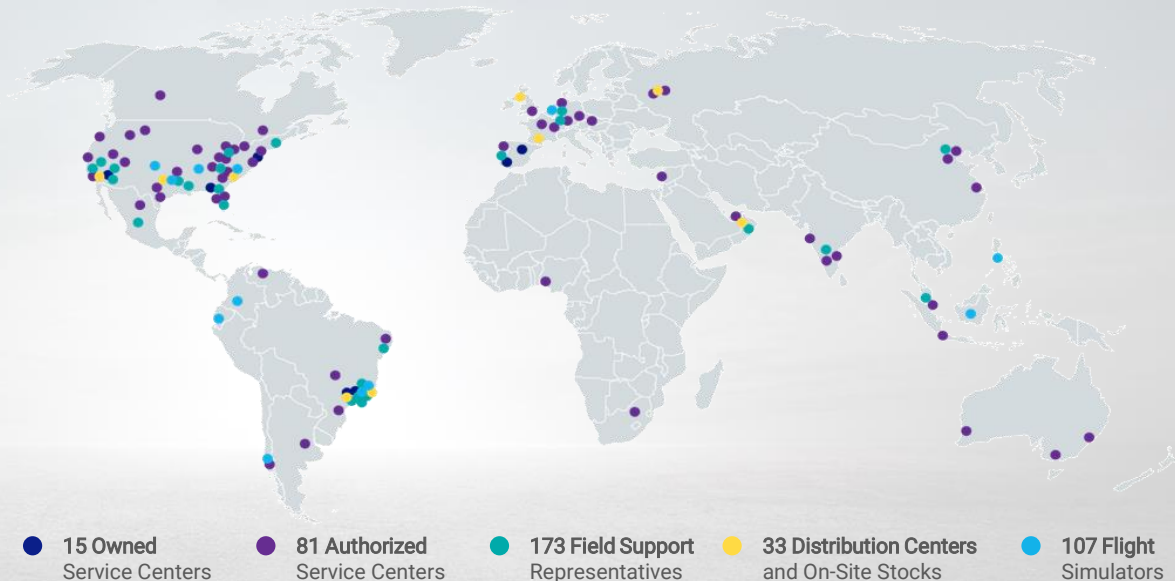
Providing a comprehensive flight capacity, service and support and training network



Global Service and Support Infrastructure

Eve Will Leverage Embraer's Global Footprint to Provide Comprehensive Maintenance and Support Services

- Eve will leverage Embraer's global service network, including legal entities, warehouses, regulatory relationships, personnel and sales teams
- Eve will receive access to Embraer's network at preferred rates
- This arrangement provides Eve with **significant time-to-market and cost advantages**



Disruptive Design Specifications



Simple & Intuitive

Optimized for understandable functionality, reliable solutions and minimal complexity



Light Airframe

2,000kg, lighter than a compact car



Peace of Mind

Minimalizes perceived dangers, creating fearless onboarding and confidence in design safety



Efficient Cost

Up to 50% cost-per-seat improvement over existing helicopters at EIS



High Utilization

1,500+ FH / 5,000+ Cycles per year



Robust Range

60 miles (100 km)



Bridge to the Future

Blends pathway to autonomy (e.g. pilot interaction replaced with vehicle inputs) with futuristic design cues



Community Friendly

100% electric with over 80% lower mission noise footprint over helicopters



No Tilt Rotors

Overhead wings with distributed VTOL rotors and rear propellers for forward flight, removing the need for tilting rotors and improving reliability

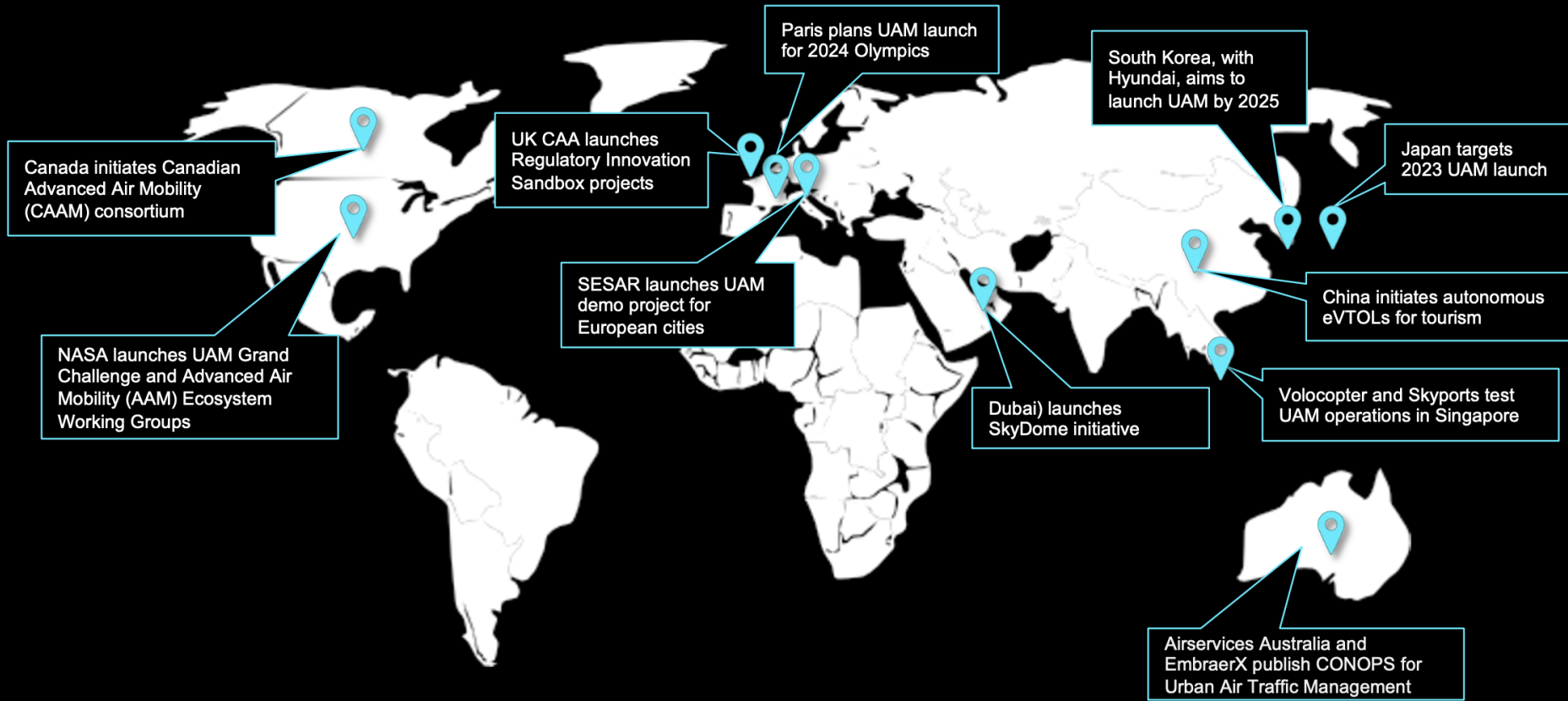


Design for All

Balances visual aesthetics with comfort, attainable appeal, universal accessibility and an affordability



EXAMPLES OF GLOBAL UAM INITIATIVES





Thank You!