

LIFT

New Augmented-Reality
Flight Training Tool

Meet the First
Hurricane Hunter

Aerial Firefighters
in the Line of Fire

THE ALUMNI MAGAZINE OF EMBRY-RIDDLE AERONAUTICAL UNIVERSITY

FALL/WINTER 2021



NEW WORLD VIEW

Alumnus leads new space
tourism company to showcase
the majesty of Earth

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FROM THE PRESIDENT



As alumni, you are invested in our performance and the success of fellow Eagles, and so I am proud to share highlights, based on our strategic plan (2018-2023), that raise the value of your Embry-Riddle degree.

ACADEMIC EXCELLENCE. We continue to build a national reputation, with top 10 rankings from *U.S. News & World Report* in multiple areas: Best for Veterans, Best Undergraduate Aerospace/Aeronautical/Astronautical Engineering Programs and Most Innovative. We also ranked highly as a Best Southern Regional University and Best Value.

STABILITY AND GROWTH. Responsible financial management and strong credit ratings allowed us to add academic programs, faculty, staff and resources to support growing enrollment. Over five years, we have directed \$400 million to capital expenditures, and improvements are underway on our campuses.

GLOBAL LEADERSHIP. Embry-Riddle Worldwide reaches more than 22,000 students. Nearly half are active-military personnel, and our Singapore Campus has grown to 600 students.

POSITIONING STUDENTS FOR EMERGING CAREER PATHS. We remain aligned with the needs of aerospace employers, adding programs such as a Master of Space Operations degree that attracted double its predicted enrollment.

RESEARCH EXPENDITURES NEAR \$27 MILLION.

Our Research Park is occupied and expansion is underway. The past year saw eight Small Business Innovation Research and Small Business Technology Transfer programs, new patent disclosures and two patents.

CENTERS OF EXCELLENCE LEVERAGE OUR STRENGTHS.

Research investment will focus on multidisciplinary centers of excellence that reflect our expertise, such as our Center for Aerospace Resilience (CAR). New centers of excellence may focus on autonomous systems, aerospace data science, and artificial intelligence and flight research.

IMPACT OF PHILANTHROPY. An increase in donors and scholarship contributions allowed us to add 50 new scholarships, totaling \$1.18 million. This generosity helps 96% of Eagles land a job or enter graduate school within a year of graduation.

EMBRACING SOCIAL AND ENVIRONMENTAL RESPONSIBILITY. Our efforts to support others worldwide, advance environmental stewardship and address such critical social issues as diversity and inclusion are outlined in a new report, which can be found at alumni.erau.edu/ser. As part of these efforts, please review our plan to reduce *Lift's* carbon footprint, as announced in this issue's letter from the editor on page 4.

These are just some of the ways in which our students, faculty and staff are elevating Embry-Riddle across the globe. With your continued pride and support, I am confident that the best is yet to come.

P. Barry Butler, Ph.D.
President

LIFT

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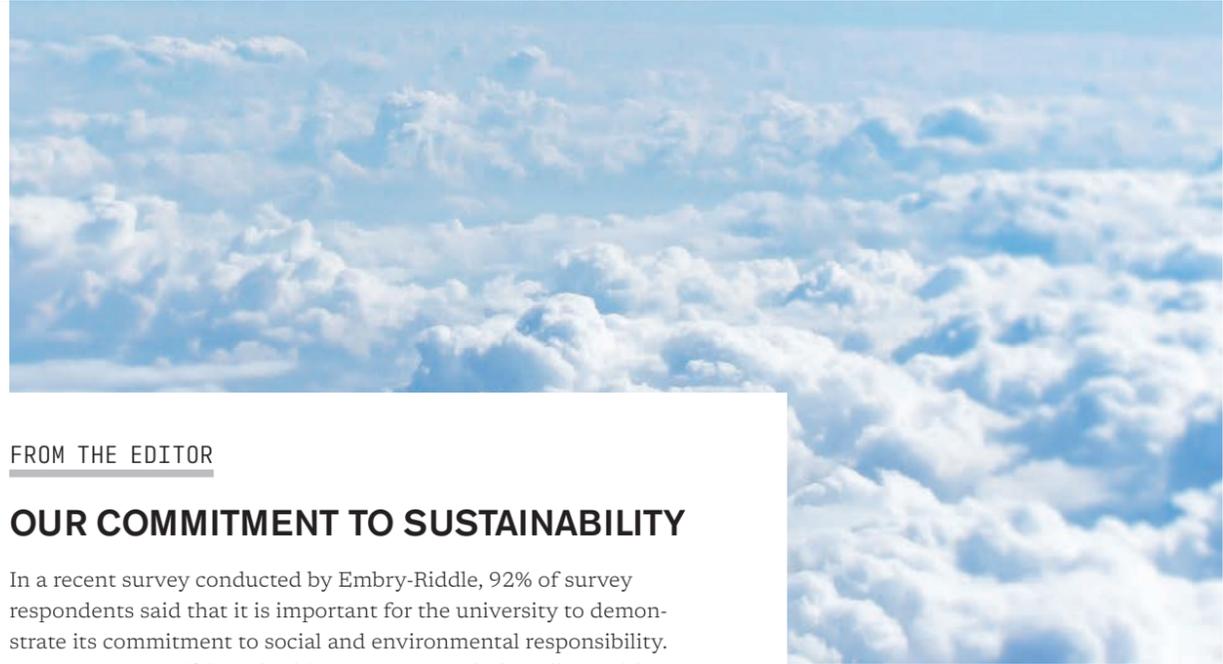
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Find out what your fellow alumni are up to now

ON THE COVER: Rendering of a Stratollite balloon courtesy of World View Enterprises



FROM THE EDITOR

OUR COMMITMENT TO SUSTAINABILITY

In a recent survey conducted by Embry-Riddle, 92% of survey respondents said that it is important for the university to demonstrate its commitment to social and environmental responsibility.

In response, *Lift* is embarking on a new path that aligns with the university's commitment to environmental sustainability, fiscal responsibility and our Eagle values, which call on us to be of service to one another.

Beginning in June 2022 with the Spring/Summer issue, *Lift* will become a "digital-first" publication, available for free to all Eagles, everywhere, with print copies available on a voluntary subscription basis. Further details are as follows:

- **DYNAMIC DIGITAL CONTENT.** *Lift* will take advantage of the added interactive functionality of the digital space, while substantially reducing costs and shrinking the university's carbon footprint. Our goal is to serve as the digital go-to destination for alumni and friends to access news and features about the university and its 140,000-plus alumni community.
- **PRINT COPIES FOR CONTRIBUTORS.** For those who still want the feel of a magazine in their hands, we have developed a print-on-demand option that will allow readers to receive a print subscription to *Lift* for a minimum philanthropic contribution of \$25 annually. Proceeds from the tax-deductible subscription (minus a \$5 premium for the cost of the magazine) will go to the One University Scholarship Fund. To start your subscription now, go to alumni.erau.edu/liftsubscription.

We hope you will share in our excitement over this new direction for *Lift*. Let us know what you think. Email liftmag@erau.edu.

Anthony Brown
Editor



We invite your feedback on *Lift* content or topics related to the university. Letters may be edited for style, length and clarity. Submission does not guarantee publication.

▶ Email liftmag@erau.edu

Inspired to Serve

I was never more proud to finally receive my B.S. in Professional Aeronautics 30-plus years after I started it. I'm even more proud now that I have learned that Jared Isaacman has the same degree.

After reading the article in *Lift* [Spring/Summer 2021: *Blasting Off to Cure Cancer*], it lifted my spirit and made me more determined to start my nonprofit organization for veterans.



I am a 100% disabled veteran, and all I have ever wanted to do is help other veterans. I have helped many with new claims

for disability, but I really want to do more. The problem has been that I have been in a dark place and unwilling to do anything for at least two years. The *Blasting Off to Cure Cancer* article snapped me out of it, and I am more motivated than ever!

So, if you get a chance to talk to Mr. Isaacman, please tell him thank you for me. His inspiration has been worth more than all of the mental health classes I have taken. ✨

Gary Bowers ('19)
B.S. Professional Aeronautics



Student Melissa Messenger works in the Thermal Science Laboratory under professors Rafael M. Rodriguez and Sandra Boetcher on thermal storage materials.

CHATTER

NEWS & NOTES FROM THE WORLD OF EMBRY-RIDDLE

Shape Shifters

Embry-Riddle researchers report thermal energy breakthrough with phase-change materials

Synthetic materials capable of shape-shifting from a solid to a liquid state – now under development at Embry-Riddle's Research Park – might someday help building managers save on cooling costs and ease the burden on our nation's aging electrical energy grid.

By leveraging simple desktop equipment to manufacture very thin strings of a special

phase-changing material, Embry-Riddle researcher Sandra Boetcher and her team have opened the door to improved thermal energy storage on Earth and in space, too.

For the first time, the team has demonstrated that thermal energy storage composites can be printed using a 3D printer and fused-filament deposition process,

continued on page 6

ALTIMETER

DARYL LABELLO

This year's *U.S. News and World Report* rankings once again gave Embry-Riddle high marks in several categories:

Aerospace Engineering
#5 Best Undergraduate Aerospace/Aeronautical/Astronautical Engineering Program (of schools whose highest degree is a doctorate).

Daytona Beach Campus
#10 Best Regional Universities in the South (tie).

#4 Best for Veterans.

Prescott Campus
#1 Best Colleges for Veterans, Regional Colleges — West category.

#2 Best Regional Colleges in the West.

continued on page 6

Shape Shifters, continued from page 5 says Boetcher, who is a professor of mechanical engineering and director of Embry-Riddle's growing Thermal Science Laboratory.

The breakthrough, described in an article published by the journal *Additive Manufacturing*, involves encapsulating a phase-change material, or PCM, inside a skinny composite filament that stores heat. The fused filaments can then be 3D-printed to create heat-exchanging devices. When subjected to heat, Boetcher explains, solid-state PCMs absorb large amounts of heat as they change from one phase to another at a constant temperature. This characteristic makes them attractive for use in thermal energy storage tanks.

The research remains at an early stage, but prototype heat exchangers have been successfully fabricated. Associate Professor Rafael M. Rodriguez, a colleague of Boetcher's, says it should be possible to scale up production for a wide range of applications. "Energy drives so many things," he notes. "In the future, maybe we could take a 3D printer to the International Space Station, or even to Mars, to fabricate these types of heat exchangers and store energy more efficiently in space as well as on Earth." 🦋

— Ginger Pinholster

Game Changer

Gaming students develop augmented-reality flight training tool



■ A team of Simulation Science, Games and Animation (SSGA) students are developing augmented-reality (AR) holograms that will eventually play a part in training the next generation of aviators at Embry-Riddle.

The holograms developed by the SSGA team work like this: A student wearing the headset can step through "slides" inside interactive virtual training modules, allowing them to view schematics and information about the CRJ-700 aircraft in 3D. Another type of hologram model in development could let them look around the flight deck and manipulate the buttons, switches and controls as they would

A team of Simulation Science, Games and Animation students, led by Program Chair Derek Fisher and Assistant Professor Michelle Hight, Ph.D., are developing an augmented-reality program to help train future aviators.

in real life. And additional holograms in the works depict the landing gear operation and the external fuel panel.

Next, the team plans to improve the software so that multiple users can interact with the same jet simulation simultaneously. After testing the new prototype, the group will seek funding to expand the program to a full-class experience.

"We are on the leading edge of this technology at Embry-Riddle – both for the pilot students, who are the end users, and the games and sims students, the developers," says Michelle Hight, Ph.D., assistant professor of aeronautical science and Fixed Wing program chair. "This is really the future of pilot training. Imagine what this could do for distance learning." 🦋

— Mike Cavaliere

Engineering students on Embry-Riddle's **Maritime RobotX Team** won the top prize in the Hardware and Systems Design category for their autonomous vessel system at the Association for Unmanned Vehicles Systems International's XPONENTIAL Conference.

Worldwide Campus

#1 Best Online Bachelor's Degree Programs (four of the past six years).

#1 Best Online Bachelor's Program for Veterans (six consecutive years).

ALTIMETER



Modeling Monsoons

Low-altitude flights help Eagle researchers predict storm formation

■ To better predict damaging, destructive thunderstorms associated with monsoons in Arizona, Embry-Riddle researchers are deploying drones and a manned airplane, each outfitted with a suite of meteorological instruments, to explore the mostly uncharted complexities of the lower-atmosphere boundary layer.

"We believe existing computer models are not capable of accurately predicting the storm initiation locations because of the fact that we have to make educated guesses in our computer models in the lower atmosphere – the boundary layer," says Curtis James, Ph.D.,

professor of meteorology and a co-investigator of the project. "There are a lot of processes that happen down near the ground – moisture and heat from the ground, fine-scale mountain forcings, thermal circulations and turbulent eddies over mountains. We suspect computer models are not handling those processes correctly."

The research is a collaboration between Embry-Riddle's Prescott and Daytona Beach campuses, involving faculty from both, representing specialties in meteorology, geographic information systems, remote sensing and unmanned aircraft systems. Kevin Adkins, Ph.D., associate professor in the Department of Aeronautical Science and a project co-investigator, will transport the drones – which can

A group of Embry-Riddle students, led by researchers Mark Sinclair, Curtis James, Dan Macchiarella, Michael Kaplan and Kevin Adkins, performed field research outside of Prescott, Arizona, to help predict monsoons.

measure three-dimensional wind speeds, temperature, humidity and air pressure – to Prescott from Daytona Beach.

Prescott's manned aircraft, an Aeroprakt A-22 Foxbat, will be outfitted to take the same measurements over an extended range to gather better data, says Ronny Schroeder, Ph.D., assistant professor in the Department of Applied Aviation Sciences and the principal investigator of the project.

"Instead of one patient with one doctor, you would have a

continued on page 8

CONNOR MCSHANE

JASON MADAH

CHATTER

Monsoons, continued from page 7
whole hospital,” Schroeder says, referring to the multi-aircraft approach. He adds that existing forecasting models do a poor job of depicting the initiation and propagation of the convection cells that produce thunderstorms, at least partly because measurements from stationary local weather stations located miles apart don’t reflect the meteorological interactions that occur over complex terrain.

A Better Forecast, Driven by Data

The project, which uses low-cost, lightweight sensors tested on the drones flown on the Daytona Beach Campus, will greatly amplify the available data.

“The denser and more frequent the data, the better the forecast,” James says.

Brian Sandford, an unmanned aircraft systems (UAS) major who graduated in May 2021, has been involved with the UAS collection of data.

“This project is important because of the nature of the data we need to collect. We need a series of data sets from morning to afternoon over several sites relatively close in time to each other, and a drone is a cost-effective and reusable platform,” Sandford says.

Bailey Cortright, a UAS major entering his senior year, will be working with the data collected during the project.

“The work that I will be doing comes in the later stages, when I will work with the wind and temperature data in post-processing,” Cortright says. “I will use ArcGIS Pro to represent the data in a 3D space and analyze how it changes over time. Converting these irregular wind measurements into a uniform grid will be a crucial part of this process, as it will allow us to feed the data into the weather analysis software. This will allow us to study the monsoon conditions and how they form and mature in northern Arizona.” 🌟

— Michaela Jarvis



The drones used in the research project can measure three-dimensional wind speeds, temperature, humidity and air pressure.



Marwa El-Sayed, Ph.D., is focusing on air pollution and microplastics research in her new Sustainability and Environmental Engineering Lab.

Airborne Plastics

Civil engineering professor researches air pollution and microplastics in new lab

When she was a child, Marwa El-Sayed, Ph.D., remembers feeling frustrated when seeing smog in the air over her home in Cairo, Egypt, or plastic trash strewn on the beach at the Red Sea.

“I knew the problems were there because I was seeing and smelling them,” El-Sayed says. “And I felt like we needed to do something about it.”

Now an assistant professor of civil engineering at Embry-Riddle’s College of Engineering, El-Sayed is working toward that goal, focusing on air pollution and microplastics research in her new Sustainability and Environmental Engineering Lab.

JASON KADDAH

The lab was established in 2020 to measure, monitor and analyze environmental contaminants, with a focus on researching atmospheric pollutants.

Undergraduate students Alexis Smith and Atharv Dangore are working with El-Sayed on microplastics research, collecting and analyzing samples from the atmosphere. They will be partnering with Johns Hopkins to examine the health effects on humans of inhaling these microplastics through the air.

“Microplastics in the atmosphere are tiny, and they can be transported with wind,” El-Sayed says. “We don’t know how they affect us when we inhale them.”

Smith and Dangore presented their research in 2021 at the National Conference for Undergraduate Research, as well as the university’s Discovery Day.

TOP: DARYL LABELLO; RIGHT: DAVID MASSEY

They also presented at the 2021 Air Quality Workshop at the University of Florida, which highlighted research projects from throughout Florida concerning air quality.

El-Sayed encourages her students to look holistically at environmental engineering solutions. “You have to think about the big picture,” she says. “You have to see if the proposed solutions are economically and socially sustainable.”

Ultimately, El-Sayed says she hopes to make a positive impact on the environment with her research, and she encourages her students to strive to do the same.

“I like to convey to my students that they shouldn’t fear making a difference,” she says. “They can stand out and be willing to be agents of change.” 🌟

— Melanie Stawicki Azam



THE ROBOTS ARE HERE!

University offers environmentally friendly robotic delivery service

In August 2021, Embry-Riddle became the first university in Florida to offer automated robotic delivery service to its students through Starship Technologies.

Starship’s fleet of 20 autonomous robots delivers from 10 campus eateries. Nearly 7,000 students and faculty can now use the Starship Food Delivery app (iOS and Android) to order food and drinks from local retailers to be delivered anywhere on campus, within minutes.

“It’s just another example of Embry-Riddle staying at the cutting edge of science and technology,” says Associate Vice President for Facilities Kevin Kreide. “Not only do we get to add this innovative new service option, but Starship also hires many students to handle the programming and maintenance for these autonomous machines, which is a perfect fit for students in engineering and robotics programs.” 🌟

— Mike Cavaliere



Leonard J. Povey, the first hurricane hunter, trains a group of cadet pilots at Carlstrom Field in Florida.

MEET THE FIRST HURRICANE HUNTER

Embry-Riddle executive's historic flight launched generations of storm chasers

BY KIM SHEETER

Floridians were focused on fun over Labor Day weekend in 1935. They had no idea a Category 5 hurricane was about to hit the Florida Keys. Their only warning came, in the eleventh hour, thanks to an American aviator living in Cuba.

The aviator who confirmed the monster storm's path was himself larger than life – arguably larger than fiction. Leonard J.

Povey was a legendary air circus performer, occasional bootlegger, aerobatic innovator, honorary captain in the Cuban air force, and later, an Embry-Riddle

executive over four contract-flying schools established before America entered World War II.

He was also the first hurricane hunter.

Povey was based in Havana, establishing ground and flight training for the Cuban air force and serving as the personal pilot for President Fulgencio Batista. He landed the job in 1934 when a Cuban official watched him stunt flying over Biscayne Bay.

At the beginning of September in 1935, the Cuban weather service detected a storm intensifying 145 miles east of Havana. On Sept. 3, a Pan Am flying boat pilot making a Key West-to-Havana run alerted the Cuban National Observatory of heavy weather to the east. Povey volunteered to help pinpoint the location and movement of the storm.

He flew his Curtis Hawk II over the Straits of Florida, where he located “an inverted funnel cloud” farther north than predicted and moving northwestward. He circled it to get a better idea of its motion, but in his open cockpit biplane, he did not dare to fly into the eye of the storm. He later told reporters, “I was able to fly close to the disturbance. It appeared to be a cone-shaped body of clouds, inverted, rising to an altitude of 12,000 feet. The waves in the sea below

broke against each other as if they were striking a sea wall.” (*St. Louis Post-Dispatch*, 23 September 1935)

The observatory dispatched a warning to the Keys, but the news came too late for an effective evacuation. Though small, the hurricane lasted 13 days, making landfall twice in Florida. Winds of 200 mph and a 20-foot storm surge destroyed the Overseas Railroad, flattened Islamorada and flooded the Florida Panhandle. Estimates put the death toll between 400 and 600.

Povey became an advocate for aerial hurricane patrols. However, the type of recon missions he envisioned did not happen until July 1943, when Colonel Joe Duckworth flew an AT-6 from their base in Texas into the eye of a hurricane churning toward Galveston.

Today, five Embry-Riddle alumni are official hurricane hunters, serving with the Air Force Reserve's 53rd Weather Reconnaissance Squadron.

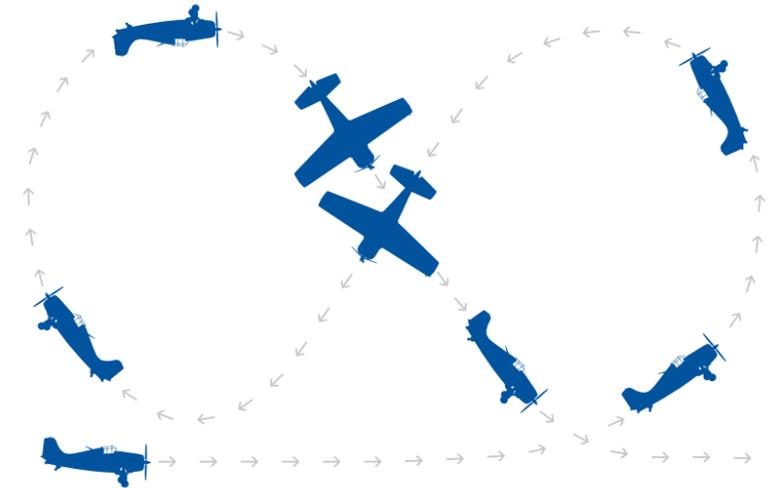
Bragging Rights to Fill Several Lifetimes

In a haze of cigar smoke, between swigs of bourbon, Povey recounted his aerial adventures to young fliers at Carlstrom Field in Florida. Even on the ground, he commanded a rapt audience. His pilots-in-training knew he could fly anything with wings and an engine – upside down and sideways.

John Paul Riddle valued Povey as an administrator, but more crucially, as a talent scout. He had worked for the government re-rating instructors, which made him the perfect choice to recruit the most highly skilled pilots. Povey personally selected many of the instructors who would train more than 19,000 pilots for World War II.

Povey was a self-taught pilot who tried to join the Canadian air force at 14. In 1922, he reported to Mitchell Field to learn to fly (officially) and train as a mechanic. By 1925, he left the service to test Rolls-Royce automobiles and Granville Gee-Bee race planes. He began barnstorming over the Great Lakes in a Curtis Flying Boat and earned the nickname “Upside Down Povey” as a headliner with the Brinton-Bayles Flying Circus. (He also did a bit of bootlegging, running whiskey from Canada to New York.)

EVEN ON THE GROUND, POVEY COMMANDED A RAPT AUDIENCE. HIS STUDENTS KNEW HE COULD FLY ANYTHING WITH WINGS.



WHAT IS A CUBAN 8?

Leonard J. Povey performed the first figure-eight aerobatic maneuver at the 1936 All American Air Race Meeting in Miami. Here are the tech specs:

1. Perform five-eighths of a loop to the 45-degree line
2. Half roll, then six-eighths of a loop at the 45-degree line
3. Half roll, then one-eighth of a loop to level flight

Flying for Cuba from 1934 to 1938, he earned 17 exhibition trophies in his silver and yellow Curtis Hawk P-6S. During a 1936 competition, he attempted a double snap roll on top of a loop, but he was flying too fast. He turned his biplane on its side and performed a half roll at each end of the loop. When Judge Jimmy Doolittle asked him what he called his “freestyle” move, he improvised again, answering, “It’s a Cuban 8.”

After World War II, Povey left Embry-Riddle for Fairchild Aircraft Division, where he developed training aircraft and demonstrated the C-119 military transport. He went on to work for Mackey Airlines (which became Eastern) and a fixed-base operator in South Carolina.

Povey died in 1984. At 80, he had survived a mid-air collision, an encounter with a turkey buzzard that sheared off his left aileron, a near-fatal car accident and a flight so close to a Cat 5 storm that a later pilot likened the experience to being “swallowed by a whale with epilepsy.”

He had lived up to his lifelong credo: “The Lord hates a coward.” ✎



A NEW WORLD VIEW

ALUMNUS
LEADS NEW SPACE
TOURISM COMPANY
TO SHOWCASE
THE MAJESTY
OF EARTH

BY MELANIE STAWICKI AZAM

As CEO of World View Enterprises, Ryan Hartman ('09) envisions a new kind of space tourism – one that doesn't explore distant planets, but rather showcases the wonders of Earth.

"If people have a shifted perspective of our Earth, maybe they will find a newfound respect for our planet and make different decisions about how they treat it," Hartman says.

Headquartered in Tucson, Arizona, World View recently announced plans to launch a stratospheric balloon more than 100,000 feet above Earth, carrying a spacecraft capsule with eight passengers and two crew members, in 2024. The spacecraft would rise and hover, allowing for a view of Earth, the Earth's curvature and space, Hartman says.

Key to the plan is the construction of seven spaceports around the world, located near wonders that include the Grand Canyon in the U.S.; the Great Barrier Reef in Australia; the Great Wall of China in Mongolia; the Aurora Borealis in Norway; the Giza Pyramids in Egypt; Amazonia in Peru; and the Serengeti in Kenya.

Led by Ryan Hartman ('09), World View Enterprises plans to launch a stratospheric balloon, carrying eight passengers, more than 100,000 feet above the Earth in 2024.

WORLD VIEW ENTERPRISES

Tourists would embark on a six-to-eight-hour flight from one of the spaceports as part of a five-day immersive experience, which would also include on-the-ground excursions to allow for a deeper understanding and appreciation of the place. For example, Hartman says, those who visit the Grand Canyon may experience the stratospheric balloon ride, plus a helicopter tour of the canyon and visits to local Native American communities.

“Through all those experiences, they are learning more about the Earth and the fragility and beauty of each of these places,” he says. “It’s an opportunity for customers to fully engage and experience our Earth.”

Aviation Innovation

For Hartman, leading World View is a culmination of his love of flight, innovation and adventure.

Growing up on his family’s Arizona cattle ranch, he heard stories about his father’s achievements as a bull rider. “My parents were to be married on July 4th in Prescott, Arizona,” he says. “But the bull riding finals were always on July 4th, and my dad entered the rodeo, made the finals and told my mom that they couldn’t be married on that day. So they had to be married the day before, and he came in second place.”

He credits his grandfather, who served in the Army Air Corps flying B-29s during World War II, for inspiring his love of aviation.

“He used to pick me up from school and take me to the Stagecoach Inn Cafe to eat and tell me stories,” Hartman recalls. “He had 10 or 12 stories that he just put on repeat.”

His grandpa talked about the comradery of the pilots and aviation innovation, including when he witnessed the delivery of the first Boeing B-29.

“It just sounded so cool to be a part of that,” Hartman says. “I decided I wanted to be involved in aviation in some fashion.”

UAS Leader

After serving 10 years in the military, Hartman worked as a hardware engineer at Raytheon Corp., then led its Unmanned Systems Directorate of the Advanced Programs Division.

Through his unmanned aerial systems (UAS) work, he got to know Steve Sliwa, who was president of Embry-Riddle from 1991 to 1998. When Hartman met him, Sliwa was CEO of Insitu, Inc., which specializes in UAS for military and commercial applications. When Hartman accepted a business development job at Insitu, Sliwa became a mentor to him.

“Dr. Sliwa always talked about how you can put people in a position to be a rock star,” Hartman says. “If you are a strong cultural fit and have the skills, you can be a rock star.”

Eventually, Hartman, who is married with three sons, became CEO of Insitu, serving for four years in that role.

“I lead in an unconventional way,” he says. “I lead from a place of passion and purpose, and I let everything fall into place.”

Insitu, now a wholly owned subsidiary of The Boeing Company, had about 200 employees when he joined the company, and it grew to 1,500 people by the time he left in 2018, Hartman says.

“When I left Insitu, we had customers in 27 countries around the world,” he says.

When World View hired him as CEO in 2019, its business was focused on using the advanced stratospheric balloon technology it had developed for persistent remote sensing, communications, weather, and research for commercial and government customers.

“Stratospheric balloons are a very Earth-friendly way of getting people or sensors to the edge of space,” Hartman says. “They use renewable and natural resources, not jet fuel.”

The company’s balloons, known as Stratollites, collect images and data closer to Earth than traditional satellites, so they offer outstanding resolution and accuracy for viewing strategic geography, while providing persistent coverage without weather constraints. They can be used for everything from monitoring an oil pipeline or powerline to tracking storms, he says.

New Horizons

While the remote sensing line of business will remain, World View is excited to embark on its new space tourism venture, which Hartman believes could have a healing impact on the Earth and humankind.

“We are not interested in being in the space tourism market focused on getting away from the Earth,” he says. “We are talking about the importance of going to the stratosphere and rediscovering the Earth. That is very important to us – we want people to come away with a newfound appreciation and respect for the planet.”

Space tourism should also be about time, place, affordability and accessibility, Hartman says. World View’s tickets will start at \$50,000, with financing offered. And the helium-filled, zero-pressure balloon flight system, instead of a rocket, will allow for a gentler ascent from the spaceport. The balloon will hover at more than 100,000 feet for up to eight hours, then start its gradual descent. To land, the capsule will deploy a



The pressurized capsule means passengers won’t experience weightlessness, making the journey accessible for most adults.

patented parafoil system, separate from the balloon, and then navigate to a landing zone near the spaceport.

Passengers will not experience weightlessness in the pressurized capsule, so the flight is accessible for most people, ages 18 and up, without special training, he says. An operator and a concierge will accompany passengers on each flight. Ultimately, he predicts World

THE BALLOON WILL HOVER AT MORE THAN 100,000 FEET FOR UP TO EIGHT HOURS BEFORE STARTING ITS DESCENT.

View’s space tourism will radically impact passengers’ lives and lead to them becoming conservation advocates.

“My career is a great example of intersecting passion and purpose with opportunity,” Hartman says. “One of the things Embry-Riddle represents for me is that you can control your own destiny. If you have a dream, you can make it happen. It may not be the easy or conventional path, but you can make it happen.”

World View tickets will start at \$50,000, with financing offered.



DREAMING EAGLE

While in high school, Ryan Hartman ('09), shown left with his wife, Sierra, visited Embry-Riddle’s Prescott Campus, but his family told him that financially it was not an option.

“I fell in love with the campus and Embry-Riddle, but I had no money,” Hartman says. “So it was a broken dream, but I continued having that dream.”

He joined the U.S. Air Force and served four years, including as a crew chief on aerial refueling aircraft. He later joined the U.S. Navy as a flight engineer.

In 2009, Hartman achieved his goal of becoming an Embry-Riddle graduate, earning a bachelor’s degree in technical management through Embry-Riddle’s Worldwide Campus.

“It was bringing that dream back to life,” he says. “I really wanted to be an Embry-Riddle alum.”

Hartman also wanted to make that dream available to others. So he and his wife recently established term and endowed scholarships to assist Embry-Riddle Prescott

Campus students with financial need.

“It gives us an opportunity to create opportunities for others,” he says.

Sierra agrees, saying scholarships greatly helped her complete her undergraduate and graduate studies.

“Both of us are here making this gift to Embry-Riddle students because we were helped at some point along the way,” she says. “We haven’t forgotten that and never will.”

THIS PAGE AND OPPOSITE PAGE, TOP: WORLD VIEW ENTERPRISES; OPPOSITE PAGE, BOTTOM: CONNOR MCSHANE

Aeroflite Aerial Firefighting's Avro RJ85 drops fire retardant at the Apple Fire in California in 2020.



MARTY WOLIN

BY ALAN MARCOS PINTO CESAR

IN THE LINE OF FIRE

Embry-Riddle alumni battle nation's wildfires with aerial and maintenance skills

It didn't take long for Jared Testa ('01) to realize just how critical his job was as an airtanker pilot. During his first wildfire season with Aeroflite Aerial Firefighting, as he approached the target drop height of 180 feet from the ground, he saw firsthand one man's rushed evacuation from the coming natural disaster.

"It was a wildfire in Southern California, and it was a breezy day. We got our butt kicked in the turbulence going into this drop, which was basically through a guy's backyard. As we went over, you could see the guy throwing stuff in the truck to get out of there," he says. "For me, that was an eye-opener for seeing how serious the job actually is for

helping folks on the ground, whether that be firefighters or residents.”

Testa is just one person in an entire network of people – including many Embry-Riddle graduates – involved in providing aerial protection from the increasingly intense wildfire seasons in the Western U.S. On that flight in Southern California, he dropped 27,000 pounds of fire retardant, but others made the call on where it should go and how it would be leveraged. The retardant is often used indirectly, out in front of a fire, Testa says, but the wildfire may be left to burn up to it and stop on its own, or a ground firefighter might start a backburn at the retardant line, stopping the fire by destroying the fuel in front of it.

“It’s a good challenge to show up and work with the guys and gals on the ground and know that you’re helping them out,” Testa says. “There’s a whole lot of variety, and each mission seems to have a significant amount of difference to it, which I think is what draws a lot of people to the job.”

Connecting the Eagle Pipeline

As a director of admissions at Embry-Riddle’s Prescott Campus, Kurt Estorez (’09) has seen many students inspired to follow in Testa’s footsteps. “The students from out west, a lot of times they’ve seen these planes flying in the summer and that’s what’s driven them to be pilots,” he says.

Estorez draws on that inspiration, as well as their affinity for being up close and personal with airplanes,



Shawn Hoem (’00) and his team at Helicopter Express will set up a helibase at any practical location within 10 miles of a fire to transport people, water, food and fire-retardant slurry.

when he’s looking to fill one of the eight positions at the Prescott Airtanker Base. Though he works in admissions now, he developed an avocation for firefighting as an Embry-Riddle student. A friend offered him a job on the crew at the airtanker base, and he was immediately hooked.

He has spent the last 15 wildfire seasons at the base, mixing concentrated fire retardant on the fly in the right proportion with water when airtankers come in preparing for drops. When they get a call to fill

an airtanker, their goal is to get the retardant mix ready and pumping in less than three minutes and to be finished in 10 to 12 minutes, depending on the size of the tanker.

During the 2020 and 2021 wildfire seasons, Estorez worked on firefighting and pumping teams in California and Colorado, sometimes stringing together as many as 10 water tenders – trucks that pump and transport water – to supply water to mix retardant. “We also fill these trucks to apply retardant on the fire line,” Estorez says.

a cargo pilot before finding his way to aerial firefighting. He says his fellow pilots at Aeroflite Aerial Firefighting come from many aviation sectors, including passenger airlines, but the training process should feel familiar.

“Similar to an airline, you’re training in the right seat before you take the pilot-in-command role in the left seat,” he says. Aeroflite also has an FAA-qualified Level D simulator available. “We can do 100% of our training that’s

required for the type ratings and annual proficiency training on it. It has been modified to include some firefighting processes and procedures, so we’ll be able to simulate a fire in there, have smoke and train those sides of the job.”

“YOU’RE ALWAYS FACED WITH UNIQUE AND TROUBLESOME PROBLEMS OUT IN THE MIDDLE OF NOWHERE.”

He prefers hiring Embry-Riddle students for his rapid-response “pit crew” at the Prescott Airtanker Base because they bring their sharp eye for airplanes. Even though these aircraft have a rigorous maintenance schedule and sometimes multiple traveling mechanics, members of the airtanker base crew also keep their eyes open for potential issues.

“We tell our crew that if they see something, say something. If something looks abnormal, we can relay it up to any pilot and their crew to come out and double-check it,” Estorez says. “When you see a plane a couple hundred times over a season and you notice something is different, it doesn’t hurt just to mention it. Safety is the biggest aspect of the operation.”

Staying Up and Operational

With safety at the forefront of any aerial firefighting effort, maintenance and repair is a complex undertaking,

often requiring ongoing evaluation of several types of aircraft, including helicopters, which offer precision and flexibility in tactical operations.

That’s where maintenance technicians like Shawn Hoem (’00) come in. Near-site helicopter maintenance is critical to safe operation in the heated atmosphere of aerial firefighting.

“What you want is to provide a good aircraft for your crew and your pilot,” says Hoem, who works for Helicopter Express. “I’m constantly managing parts and the arrival of those parts, the aircraft and myself to a particular chunk of ground. The big thing is to keep the aircraft up and operational. I have a philosophy that operations do not wait on maintenance, period.”

Over his last 25 years fixing helicopters, Hoem has always been prepared to replace anything from rotor blades to transmissions and tail booms, sometimes while camped

on a closed stretch of road or some other improvised helibase. He’s excelled at the job through his ability to think on his feet. “You’re always faced with unique and troublesome problems out in the middle of nowhere,” he says.

A helicopter is more precise and flexible, but it’s a shorter-range and lower-capacity aircraft than airtankers like the Avro RJ85 that Testa pilots. Hoem’s team will set up a helibase at any practical location within 10 miles of the fire and transport people, water, food and fire-retardant slurry, if necessary, to the target spot. Their goal is always to get it early, with jobs sometimes as small as dousing a single tree. “If the fire gets out of control, we’ll call in the fixed-wing guys. But we try to get ’em small and keep ’em small,” Hoem says.

His Embry-Riddle education in professional aeronautics served him well, even after he discovered his knack for helicopter repair: He bought a Cessna 182 and fitted a jump door so he could use it as a support vehicle when he was a traveling mechanic. He still has the airplane and loves to fly it, but his heart is now in rotorcraft and the high-intensity life of fighting wildfires.

“I can’t imagine a summer not hearing the singsong of an inbound Huey, the beating rotors, the smell of smoke. There’s nothing quite like that,” he says. “I like being right at the point of action, being around the machines, the whole environment of activity. I’m addicted to it like the rest of the people who are around this stuff. That smoke gets in your blood.”



Kurt Estorez (’09), top, and Shawn Hoem (’00), bottom, are two alumni who are using the skills they gained at Embry-Riddle to fight wildfires.



BECOMING AN AIRTANKER PILOT

Jared Testa (’01, left) led the Prescott Campus’ Golden Eagles Flight Team for seven years and went on to work as

AERIAL FIREFIGHTING IN STEREO

Go in-depth on the details of aerial firefighting and tanker base operations with Jared Testa (’01) and Kurt Estorez (’09). Listen to our interview with them on the Talon Talks podcast by subscribing on your favorite podcast app.

► Visit alumni.erau.edu/podcast for a full episode list.

OUTSIDE THE LINES

Alumna embraces technology and tradition

BY MELANIE STAWICKI AZAM

Laura Smith-Velazquez ('00, '06) doesn't fit many stereotypes. "It took me a long time to not try to fit someone else's expectations," she says. Growing up in rural Michigan with her Cherokee family, she dreamed of going to outer space while watching sci-fi shows with her grandmother.

"My grandma was a massive early *Star Trek* fan," says Smith-Velazquez, now a principal scientist of human-centered intelligent systems at Charles River Analytics, a software company conducting artificial intelligence, robotics and human-machine research and technology development.

However, she stays grounded through her family's Native American traditions and connection to the Earth. "We believe the Earth nurtures you, and you take care of it," Smith-Velazquez says. "It's a reciprocal relationship."

continued on page 22



Laura Smith-Velazquez ('00, '06) was the first in her family to graduate from high school and dreamed of going into space while watching sci-fi shows with her grandmother, top left.



Laura Smith-Velazquez keeps her love of flight alive as a group commander with the Maryland Wing Civil Air Patrol U.S. Air Force Auxiliary.

LAURA SMITH-VELAZQUEZ

Outside the Lines, continued from page 20

A FEW FACTS ABOUT SMITH-VELAZQUEZ:

SMITH-VELAZQUEZ WAS the first in her family to graduate from high school. “People talk about first-generation college students. I am actually a first-generation high school graduate.”

HER FAMILY showed her the value of education when she watched her dad get his GED and attend college. “My mom worked two jobs to help put my dad through college, and we had one car. My dad was the primary caregiver for the kids, so sometimes my dad took us with him to school.”

SHE KNEW a few Cherokee words growing up but made an effort to learn the language as she got older. She now includes her Cherokee name in her email signature. “There are all these little cultural things that are in language. For example, we don’t say we are sorry in Cherokee. For us, if you do something wrong, you make it right. It is an action, and it is positive intent.”

SHE WORKED her way through school with a variety of jobs. One was working as a loss prevention officer at JCPenney, where she was maced and had knives and even a BB gun pistol pulled on her. “I was busting shoplifters. I was really good at it, especially working undercover, because I don’t look burly and mean. I’m always smiling and talking.”

PRIOR TO her current job, she was a senior systems engineer-cognitive scientist in research and technology development at Collins Aerospace and principal investigator on the NASA Sonic Boom Display program, where she worked on a wave propagation algorithm that would allow pilots to plan and modify where a sonic boom hits the ground.

SHE HAS WON many awards for her work, including the 2020 American Indian Science and Engineering Society Technical Excellence Award and a Society of Women Engineers Patent Recognition Award. She was also part of the NASA/FAA Airplane State Awareness Research Team awarded the 2020 NASA Langley Achievement Award. “Sometimes you don’t feel recognized and then you get it all at once. The hard part was all the award ceremonies were virtual, due to COVID.”

OUTSIDE OF her work, Smith-Velazquez strives to be a role model to other women in engineering and serves as the Indigenous Peoples Affinity Group Champion for the Society of Women Engineers. “The Cherokee are matriarchal, and we have really strong women. That was a benefit of my culture – I didn’t grow up with the idea that girls do this and boys do that.”

SHE STILL LOVES to fly and is a group commander with the Maryland Wing Civil Air Patrol (CAP) U.S. Air Force Auxiliary. “If I’m on the ground too much, I get antsy. Once a pilot, always a pilot.” ✨



ROCK(ET) STAR

Michelle Lucas ('00)
inspires students to
seek Higher Orbits

BY SARA WITHROW

As a kid, Michelle Lucas ('00) knew she was destined for out-of-this-world experiences. Her passion for space was ignited at a young age and became her “guiding star.”

“I watched the first space shuttle flight when I was a little girl, and I fell in love immediately. I told everyone that’s what I wanted to do,” she says. Lucas was devastated when she learned as an adult that a medical condition would prevent her from becoming an astronaut. But she found another way to pursue her passion.

Today, the communications alumna is founder and president of Higher Orbits, a nonprofit that uses spaceflight to inspire and engage high school students through science, technology, engineering, arts and mathematics (STEAM), and hands-on, project-based learning. In July, the nonprofit received a \$1 million grant from Blue Orbit’s Club for the Future.

The surprise grant gave Lucas a much-needed lift. “It gives us the ability to think long term,” she says. “We have some large initiatives that are going to be made possible because of this.”

‘Making It’ in Space

The roots of Higher Orbits run deep. The organization is the culmination of Lucas’ own educational experiences, her love of space and a 10-year career working at NASA’s Johnson Space Center.

Lucas credits Embry-Riddle for helping her find her ideal career path. “Communications and being able to specialize in space studies at Embry-Riddle was a game-changer for me,” she says. “It combined everything that I really wanted to do in the world.”

Lucas recalls the moment she knew she’d “made it” in the space industry. “There was a day that I’d done something for one of the crews on orbit and they called down and thanked me by name. I was giddy.” Seeing her excitement, the flight director copied the transmission

on a cassette tape and gave it to Lucas. “I literally ran to Walmart to buy a six-pack of blank cassette tapes and went home to copy them on my boombox. I sent one to my mom, my dad and my grandma, because my name was said from space,” she says.

Now, Lucas shares that enthusiasm with students across the United States. “I get to offer kids opportunities that they might not think they have access to. That’s really meaningful to me,” she says.

“I GET TO OFFER KIDS OPPORTUNITIES THAT THEY MIGHT NOT THINK THEY HAVE ACCESS TO.”

To date, Higher Orbits’ flagship program, Go For Launch!, has engaged more than 1,500 students and sent 13 of their experiments to space. During the pandemic, Lucas added Space at Home kits to Higher Orbits’ programming, which allow students to conduct

experiments on their own or with astronauts and other space professionals via live webinars.

Embry-Riddle Fan

Lucas continues to be a fan of Embry-Riddle and is an avid supporter of its students and graduates. As a member of Embry-Riddle’s College of Arts and Sciences Industry Advisory Board since 2017, she also helps guide and inform the college curricula.

Lucas recently hired her first employee, Katy Thompson ('21), also a graduate of the communication program. Thompson, now director of communications, interned for Lucas before joining Higher Orbits full time. Thompson says Higher Orbits’ mission resonated with her. “I love that kids have this outlet to develop an interest in space, because it’s something that I wish I’d had as a kid.”

To this day, Lucas says she follows her “guiding star” – and despite her medical diagnosis, she’s hopeful that one day she’ll fly in space. “Like I tell our students, just because the answer is no now, it doesn’t mean it will be no forever.” ✨

AWARD-WINNING EDUCATOR

Michelle Lucas ('00) has been recognized for her contributions to educating future space leaders.

- ▶ **Pattie Grace Smith STEM Award** (Commercial Space Flight Federation, 2020)
- ▶ **Associate Fellow** (AIAA, 2019)
- ▶ **Eagle Entrepreneur Award** (Embry-Riddle, 2019)
- ▶ **Hall of Fame** (Space Camp, 2014)



MAKING THE RULES

Will Lovett ('91) is shaping the future of beyond visual line-of-sight operations

BY SARA WITHROW

In life, sometimes the stars align in ways you don't expect. For Will Lovett ('91), this was the case in 2014. After working 20-plus years in aviation insurance and flying helicopters and fixed-wing aircraft for the U.S. Army Reserve, he was presented an opportunity to launch Phoenix Air Unmanned (PAU), an unmanned aircraft services startup for Phoenix Air Group.

He also found himself dealing with a personal tragedy that would reaffirm his decision.

Just as Lovett was transitioning to PAU, his close Army friend, Matt Wallace, died in a helicopter crash while surveying utility transmission lines.

"It really prompted me to say, 'Why can't this be done with unmanned aircraft, so we don't risk pilots' and observers' lives with the proximity to lines?'" Lovett says. "We can accomplish this with drones and be safer. And we can get more actionable intelligence. We can take drones closer to power lines, with high-resolution cameras, so they can actually tell specifically what's broken or what needs attention."

The chance to lead the vanguard of a largely untapped business sector and simultaneously prevent the unnecessary loss of life was an opportunity he couldn't pass up.

"To start a new company or new division, and being employee No. 1, and building a company with no template whatsoever ... I loved the challenge," Lovett says.

Fast-forward several years later and it's clear that he was up to the challenge. Now, a proven leader in the

commercial unmanned aircraft systems (UAS) space, Lovett is helping shape the future of beyond visual line-of-sight (BVLOS) operations.

As a member of the Federal Aviation Administration's UAS BVLOS Aviation Rulemaking Committee (ARC), he is charged with designing regulations for BVLOS operations that are "safe, scalable, economically viable and environmentally advantageous." The FAA Charter for the ARC prioritizes rulemaking for long-line linear infrastructure inspection, aerial data gathering, small package delivery and precision agriculture applications, such as crop spraying.

Unlocking the Potential of UAS

Lovett knows firsthand the need for BVLOS regulations for the industry. Roughly 80% of PAU business is linear infrastructure inspection and data collection on transmission lines. Aerial cinematography and surveying/mapping using LiDAR (light detection and ranging) are the company's other primary business segments.

And while business is good, there is a world of upside ahead for this expanding sector, says Dent Thompson, senior vice president and chief operations officer for Phoenix Air Group. Thompson, who initially persuaded Lovett to take the controls of PAU, sees a bright future for UAS services, with one important caveat. "The only thing holding back commercial operations for unmanned aircraft are regulations and the integration of unmanned systems into the existing controlled airspace," he says.

Fortunately, with Lovett's leadership, the FAA's ARC is working diligently to create regulations that will streamline BVLOS operations. It's a vital first step in releasing the vast potential of the UAS industry, Thompson says.

"Will Lovett and his co-members of the ARC and similar study groups are taking the initial steps towards an expanding universe of opportunities for unmanned aircraft," Thompson says. "The future for unmanned aircraft is limitless." 🌱

Opposite page, from left: Josef Baertsch, Swiss drone instructor; Will Wheeler, PAU director of operations; Will Lovett ('91), PAU managing director; Chris Carta ('13), PAU standardization pilot; and Davy Dilant ('10), Swiss drone instructor.

"WHY CAN'T THIS BE DONE WITH UNMANNED AIRCRAFT, SO WE DON'T RISK PILOTS' AND OBSERVERS' LIVES?"

THE EAGLE-PHOENIX CONNECTION

Today, Phoenix Air Unmanned (PAU) boasts 20 employees, seven of whom are Embry-Riddle graduates. The company regularly offers internships to college students, and Embry-Riddle is a favorite recruiting ground, says Will Lovett ('91), managing director.

Jared Jantzer ('20) joined the PAU team in May 2020 as an intern and completed his B.S. in Unmanned Aircraft Systems and Flight while working for the company. He also earned a private pilot's certificate, and instrument and commercial ratings at Embry-Riddle.

Now a remote pilot in command for PAU, Jantzer says his manned pilot certifications and the education he received in safety management systems, crew resource management and FAA requirements helped prepare him for his job at PAU.

Jantzer, whose father, Mark, is also an Embry-Riddle alumnus, says it's exciting to be part of a new industry. He's hopeful that new FAA regulations will open the skies to more seamless operations for UAS, including utility inspection and urban applications, like package delivery. "We have to figure out a way to integrate [UAS] safely," Jantzer says.

Phoenix Air Unmanned's Jared Jantzer ('20), left, and Will Lovett Jr. perform a power line inspection with the help of a drone.





Elena Djudarc is a mentor with Discover Embry-Riddle, which provides support to first-generation students like herself.

Never Give Up

First-generation student inspires the next

BY MIKE CAVALIERE

Aerospace engineering junior Elena Djudarc grew up watching her father sacrifice for the betterment of their family. He moved to the United States from the former Yugoslavia with hardly anything and eventually met Djudarc's mother, who emigrated from the Philippines. He worked – a

lot – multiple jobs. And he always kept the end goal in mind, reinforcing to her once she began considering college that “it’s better to cry for four years than cry for 40.” That adage would go on to guide Djudarc as she endeavored to become the first in her family to earn a college education.

“Remembering that quote helps push me through some of my academic challenges,” the Orlando, Florida, native says. “My family’s constant support is my biggest inspiration in getting where I am today.”

“MY FAMILY’S CONSTANT SUPPORT IS MY BIGGEST INSPIRATION.”

A recent recipient of a James W. and Essie W. Barfield Endowed Scholarship, as well as a second scholarship from The Miami Foundation, Djudarc remembers calling her dad immediately after hearing the news of both wins, and he encouraged her. Today, she aims to similarly encourage fellow first-generation students.

As a mentor and team lead in the university’s Discover Embry-Riddle program, which provides a living-learning community, support structures and programs to help first-generation students succeed, Djudarc shares her experience transitioning from high school to college with freshmen, offers advice and routinely checks in on them to see how they’re doing.

“A piece of advice I would give to incoming first-gen students is to take opportunities, apply for that scholarship or job, make some new friends, take care of yourself and, most importantly, never be afraid to ask for help,” Djudarc says. “There are others who have felt or may be feeling the exact same way as you and, eventually, they got through it. Never. Give. Up.”

TOP: ELENA DJUDARC; BOTTOM: JERRY BRACEY

Opening Doors to Dreams

Diane and Bruce Halle Foundation creates new scholarship

BY MELANIE STAWICKI AZAM

The Diane and Bruce Halle Foundation recently made a generous gift, which qualified for a match from the university’s board of trustees, to create a new scholarship for Embry-Riddle students.

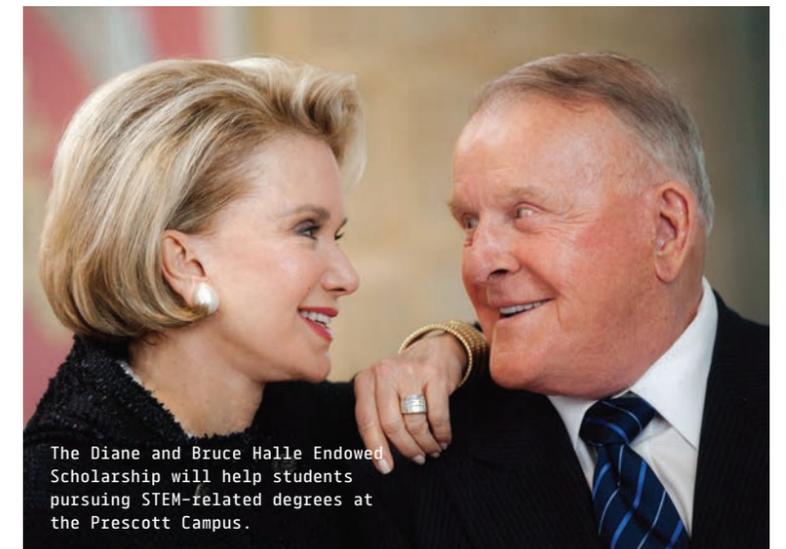
“The Halle family believes that education is the door to open one’s mind to a world where their dreams can become a reality,” says Diane Halle in a written statement. “We are proud to partner with Embry-Riddle Aeronautical University to establish the Diane and Bruce Halle Endowed Scholarship. This scholarship will help deserving students as they navigate their path to success and achieve their goals.”

Bruce Halle, who passed away in 2018, started Discount Tire in 1960, the world’s largest independent tire and wheel retailer with more than 1,000 stores in 37 states.

The Diane and Bruce Halle Foundation, located in Scottsdale, Arizona, focuses on helping the people of Arizona by offering grants in the areas of human services, health, education, arts and culture, and spirituality.

The Diane and Bruce Halle Foundation Endowed Scholarship will assist students at Embry-Riddle’s Prescott Campus in Arizona who are incoming freshmen pursuing degrees in science, technology, engineering or math (STEM)-related fields. Students will be selected based on their academic performance and financial need, with a preference for underrepresented students.

“We cannot thank the Halle family enough for their support of Embry-Riddle and our students – as well as their commitment to STEM education,” says Anette M. Karlsson, chancellor of Embry-Riddle’s Prescott Campus. “I am certain that their generosity will help launch the academic careers of future aviators, engineers and scientists.”



The Diane and Bruce Halle Endowed Scholarship will help students pursuing STEM-related degrees at the Prescott Campus.

DIANE AND BRUCE HALLE FOUNDATION

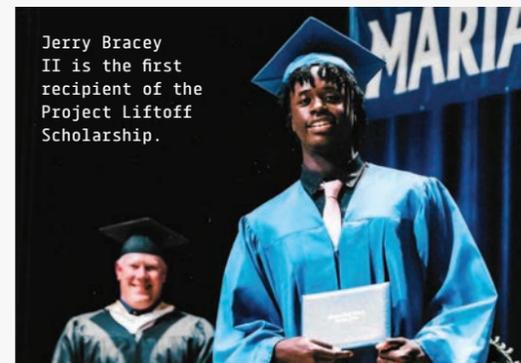
DONORS LAUNCH NEW BUSINESS SCHOLARSHIP

In recognition of his strong potential as a student and a leader, Jerry Bracey II has been named the first-ever recipient of the David B. O’Maley College of Business Project Liffoff Scholarship at Embry-Riddle.

“I have so much appreciation and

excitement about Project Liffoff,” says Bracey, who entered Embry-Riddle this fall as a freshman and as a member of the men’s basketball program. “I know it was not an easy decision because there were many other well-qualified candidates. I’ve always loved challenges, and this will be the toughest, but also the most exciting, challenge for me yet.”

Project Liffoff is aimed at developing a leadership pipeline by



Jerry Bracey II is the first recipient of the Project Liffoff Scholarship.

recruiting high-performing incoming freshmen from diverse backgrounds. As a recipient of the scholarship, Bracey will receive full tuition plus room and board, as well as access to an evidence-based, student-success program that includes a networking and support community, mentoring opportunities, career advice and leadership-development courses.

“I am thrilled to have Jerry joining the O’Maley College of Business as

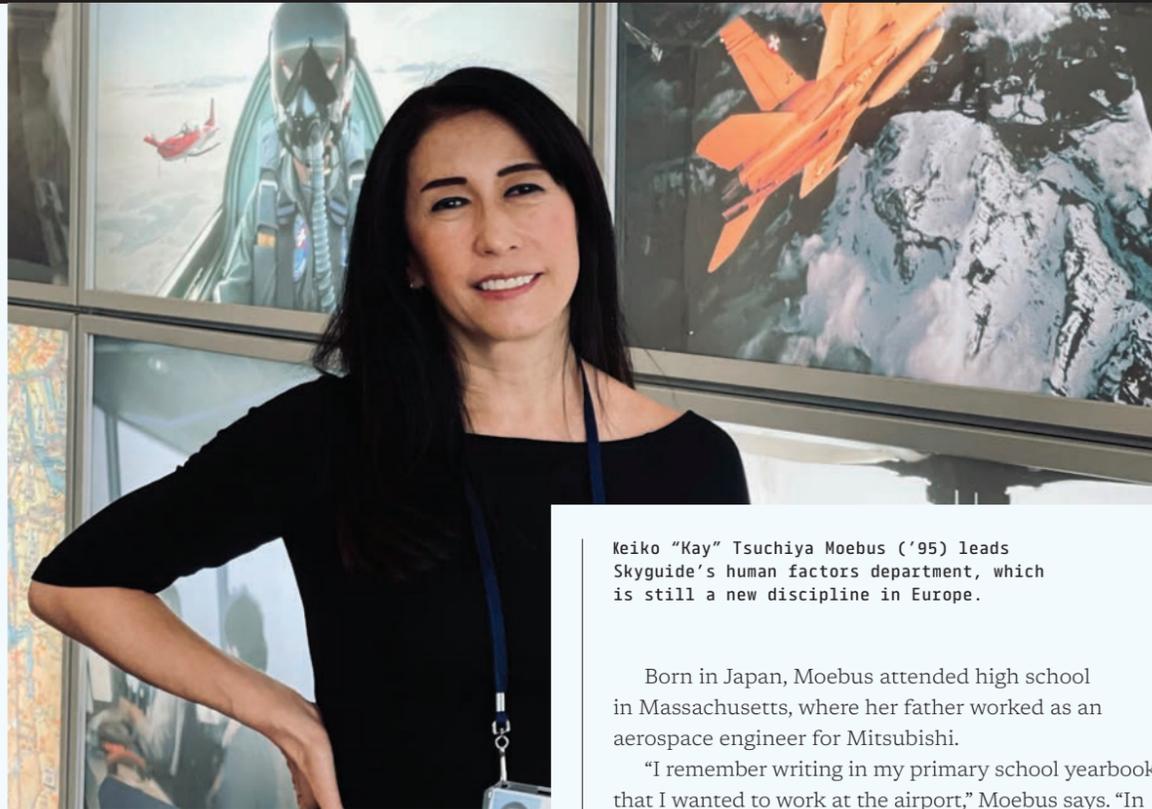
our first Project Liffoff Scholar,” says Shanán Gibson, Ph.D., college dean. “The fact that our first Liffoff Scholar continues a legacy of superior scholar-athletes studying the business of flight in the College of Business is consistent with Embry-Riddle’s commitment to transforming the lives of young people through education.”

The donors who made this year’s Project Liffoff Scholarship possible include Solairus Aviation, John King,

Alaris Aerospace, Leslie Singer and Larry Noe, Priester Aviation, Sheltair Aviation, VanAllen, Candace Covington and Nat Iyengar, and Pete and Vera Agur.

“I know that I have the drive to succeed at Embry-Riddle, not just for me, but for my family,” says Bracey, who is pursuing a degree in business administration. “I truly feel at home already.”

— *Michaela Jarvis*



Keiko "Kay" Tsuchiya Moebus ('95) leads Skyguide's human factors department, which is still a new discipline in Europe.

THE HUMAN FACTOR

Eagle alumna soars in leadership role at Skyguide

BY MELANIE STAWICKI AZAM

Keiko "Kay" Tsuchiya Moebus ('95) was never interested in flying, herself, but the aviation industry gave flight to her international career in human factors, setting her on a course for understanding how people behave and work while flying in a complex airspace. "It is fascinating how the brain works and how teams resolve problems in creative ways," says Moebus, who is currently the head of human factors at Skyguide in Zurich, Switzerland. Skyguide provides air navigation services for Switzerland and adjacent airspace in France, Germany, Italy and Austria, guiding some 1.2 million civil and military flights in European airspace. Essentially, it is a private nonprofit that serves a similar role as the Federal Aviation Administration in the U.S.

Born in Japan, Moebus attended high school in Massachusetts, where her father worked as an aerospace engineer for Mitsubishi.

"I remember writing in my primary school yearbook that I wanted to work at the airport," Moebus says. "In high school, I made up my mind that I wanted a career related to aviation and chose to go to Embry-Riddle."

As an undergraduate at Embry-Riddle, she focused her studies on air traffic control and aviation safety.

"I wanted to work at an airport, and I wanted to be on the ground, so air traffic control was really perfect," she says.

During her graduate studies at Embry-Riddle, she got more interested in human factors, which was still being established as an official program at the university. She credits her professors with teaching her skills she still uses today, like analytical skills, research techniques and both scientific and business proposal writing.

"Overall, I learned quite a lot at Embry-Riddle," she says. "It was like on-the-job training."

From Daytona to Vienna

She met fellow Embry-Riddle student Phillip Moebus ('98, '14), who is a Swiss citizen, and they married and moved to Europe. She landed her first job at Frequentis, an Austrian tech company that develops communication and information systems for air traffic management, public safety and transportation.

"It was a big shock moving from Daytona to Vienna," she says. "Luckily, with aviation, you can use English, because I did not know German."

Despite being new in the business, Moebus says Embry-Riddle's global reputation as an aviation leader

continued on page 30

GOOD SCIENCE

RAD Satellite project aims to combat human rights abuses

BY MELANIE STAWICKI AZAM

Ever since high school, Terra Gordon has been involved in humanitarian issues. At Embry-Riddle, she is using that passion to lead a project that merges her interest in aerospace engineering with her passion for human rights.

It's called the Reconnaissance and Documentation (RAD) Satellite project. Gordon is leading a team of fellow engineering students to develop a small satellite that collects data remotely to bring awareness of



The RAD Satellite project team at Embry-Riddle's Prescott College of Engineering includes, clockwise from top left, Sharik Joseph, Cayli Keane Farias, Terra Gordon and Julia Kjenstad.

TOP: KEIKO TSUCHIYA MOEBUS; BOTTOM: TORI ANDERSON

genocide and other crimes against humanity around the world. She hopes to increase transparency in areas that may be remote, dangerous and difficult for people to access.

"My idea is to make a small satellite to eliminate the human aspect, because that is where the danger lies – when people get into the conflict zone," she says.

The RAD Satellite project is also partnering with scientists from NASA's Jet Propulsion Laboratory to aid in the development of the remote sensing payload.

Gordon and the other three team members – Cayli Keane Farias, Sharik Joseph and Julia Kjenstad – have a shared passion for engineering that makes a difference.

"PROJECT RAD IS AN OPPORTUNITY TO USE SCIENCE AND TECHNOLOGY FOR GOOD."

Farias, who is studying mechanical engineering and aims to work in renewable energy, says she wanted to be involved in the project because it is an innovative, technological

approach to solving a humanitarian issue.

"Project RAD is an opportunity to use science and technology for good, helping some of the hardest-to-reach places," Farias says. "It was the perfect opportunity to broaden my knowledge while also contributing to a project dedicated to making positive change."

The RAD Satellite project will become the team's senior capstone project, but they hope it will continue beyond their graduation, with the goal to build a prototype spacecraft and eventually launch a full-scale model into low Earth orbit.

"We also have another goal to apply to the NASA's CubeSat Launch Initiative to have them test and launch it for us," Gordon says. ✨

The Human Factor, continued from page 28 helped open doors for her and earned her respect in the field from the start.

“Thanks to the reputation of Embry-Riddle, I think I was treated more as an expert and consultant,” she says.

Moebus started Frequentis’ human factors program, working in Austria and Germany. In 2000, she moved to RUAG International, a Swiss technology group focusing on the aerospace industry, where she worked on a project for the Swiss Air Force, then later as a project manager in air traffic management.

Shortly after her son was born in 2004, she decided to start her own consulting company, MOEBUS Aviation GmbH. Several years later, she dissolved the company in Switzerland, but her ex-husband, Phillip, continues to operate MOEBUS Aviation, Inc., in Canada.

“Having my own company was tough, but it was another unique challenge that I’m glad I experienced,” Moebus says.

In 2011, she was hired as a senior safety management expert at Skyguide. Later, in 2018, she was named its head of human factors. Human factors is still a new discipline in Europe, she says, but she enjoys working with the air traffic controllers and engineers and leading her team in initiatives and innovations related to automation and new technologies, such as artificial intelligence.

“Situational awareness, cognition and how humans understand information is interesting,” Moebus says. “My human factors team acts as an internal consulting team to the operations and technical departments.”

She says the toughest aspect of her job is convincing air traffic controllers and engineers, who may be resistant to change, to implement new developments and designs in their workspaces.

“You can be passionate about human factors, but you can’t always convince people to buy in,” Moebus says. “But I’m lucky, because Skyguide is really open to innovation and moving forward. Every day is busy, but it is quite rewarding.” 🌟

“THANKS TO THE REPUTATION OF EMBRY-RIDDLE, I THINK I WAS TREATED MORE AS AN EXPERT AND CONSULTANT.”



Erik Lentz ('09) discovered that faster-than-light travel without exotic matter is feasible.

CHANGING THE FUTURE OF SPACE TRAVEL

For space physics alumnus Erik Lentz ('09), the early days of the pandemic were the perfect time to pursue his dream research project

BY ANNEISE O'DONNELL

Erik Lentz ('09), Ph.D., spent three years in Germany researching physics at the University of Göttingen's Institute for Astrophysics. Amid the lockdowns in March 2020, he found himself with an abundance of time on his hands, so he consulted a list of topics that he had always wanted to research but never had the time for. At the top of the list? Determining if one could theoretically construct a faster-than-light warp drive without exotic matter.

“It seemed like as good a time as any to take on a ‘fun’ project like that – something that was quite a bit different from what I had been doing,” he says.

Conducting his research between March and June of 2020, he made a monumental discovery:

Faster-than-light travel without exotic matter, or substances with negative energy density, is feasible.

Lentz’s recently published paper, “Breaking the warp barrier: hyper-fast solitons in Einstein-Maxwell-plasma

CONDUCTING HIS RESEARCH AMID LOCKDOWNS, LENTZ MADE A MONUMENTAL DISCOVERY.

theory,” focuses on using the intrinsic qualities of gravity as we understand it through general relativity to move a spacecraft – potentially with people inside – at speeds faster than light.

From YouTube videos to news articles to trending Reddit threads on this exciting and

imaginative topic, the response from the public has been overwhelmingly positive, he says.

Set on Space Physics

Raised in Klamath Falls, Oregon, in a household that heavily encouraged learning, Lentz was always drawn to the sciences, especially things like exotic propulsion.

“It was something that had been fascinating to me from reading and watching too much science fiction as a kid,” he says. “I gained an interest in seeing if any of these fantastic technologies that were really just plot devices in *Star Trek* could actually exist.”

The space physics graduate credits much of his development as a scientist to faculty mentors like Dr. Quentin Bailey and former mathematics professor Dr. David Russell, who helped shape his perception of physics as a discipline, as opposed to something found only in popularized science books, he says.

“I was daunted by all of these laws and equations I was reading about, created by people 100 or more years ago and thinking, ‘How could I produce something that significant?’” he says. “Over the course of those four years, it became much clearer and less intimidating to me.”

Driven to Discover

Having since returned from Germany, Lentz now works as a modeling and simulation analyst for JDSAT Operations Research & Big Data Sciences in Virginia. While there is much more to be uncovered, he looks forward to seeing how much further the research project can go and how it will progress the field.

In March 2021, he returned to his Embry-Riddle roots to deliver a virtual presentation on his findings through the Jim and Linda Lee Planetarium’s Science Speaker Series.

“It’s a very imperfect path I’ve taken with lots of twists and turns, but that’s kind of the point,” Lentz says. 🌟

PASSING THE TORCH

Bill Thompson ('87) and Edmund Odartey ('04, '10) discuss the legacy and future of alumni engagement at Embry-Riddle

EDITED BY ALAN MARCOS PINTO CESAR

Bill Thompson ('87) is an Embry-Riddle icon, having worked in various roles over his more than 27 years at the university's two residential campuses. Never one to sit still, Thompson is now leading a new effort as Embry-Riddle's executive director of Engagement Initiatives and the Eagle Heritage Project. "I have always responded to the needs of our department and the university, and I am excited about my new role," Thompson says.

While his departure from alumni engagement leaves some big shoes to fill, the job has been left in good hands. Edmund Odartey, ('04, '10), who has served alumni engagement for more than 14 years, is taking over the role of executive director.

"I am just as excited that it is Edmund who will 'take the con' from me," Thompson says. "He will do an exceptional job."

We spoke to Thompson and Odartey about their new roles, the excitement of new opportunities and the future of alumni engagement.

Edmund Odartey ('04, '10), right, is 'taking the con' from Bill Thompson ('87) as executive director of alumni engagement.



DARYL LABELLO

Q&A

BILL THOMPSON ('87)

Q: How did you come to work at Embry-Riddle?

A: In 1994, I was hired into admissions at the Prescott Campus, and I loved the work. I came to alumni relations in 2011, and even though I swore I'd never leave the mountains, I was proud to move to the Daytona Beach area in 2013 to lead the team.

Q: What do you feel is your biggest achievement as executive director of alumni engagement?

A: I'm proud of the way we worked to create events and networks around the globe. We have been able to connect so many alumni with one another and advance their careers. This past year, during the COVID-19 pandemic, we held hundreds of virtual events with alumni who were not able to participate previously.

I'm truly blessed by the clubs and organizations I've been part of at Embry-Riddle and by the people who have said, 'You made a difference in my life.'

Q: What's next for you at Embry-Riddle?

A: I will continue to be an assistant coach with the ice hockey team, lead the Eagle Heritage Project and work with Eagle Authors. I will also keep working with Embry-Riddle's chaplain, Reverend David Keck, on the 9/11 Research and Remembrance Project. [See page 34.]

As we approach Embry-Riddle's centennial in 2026, I am gathering interviews, photos and documents highlighting the incredible success and impact of our alumni across the globe. I have become a trusted resource in my time here. People and companies in the Eagle community often ask me to assist with memorial gifts, scholarships and other donations. I welcome any opportunity to assist our students through philanthropy.

EDMUND ODARTEY ('04, '10)

Q: How did you come to work at Embry-Riddle?

A: During an internship at Sanford airport, I heard that Embry-Riddle employees get tuition support, so I got a job in the financial aid office while I pursued my master's degree. It felt good to be able to help students get scholarships.

The alumni office was nearby at the time, so I applied for a job there in January 2007 after attending a couple of events. I still enjoy traveling around the globe and meeting alumni who are trailblazers in this industry.

Q: What do you love about alumni engagement?

A: It's great to build bridges between alumni and our students. Many students don't know about the opportunities they can take advantage of with us. When I restarted the Future Alumni Network [see page 36], the students who volunteered with us were getting jobs and internships. Sharing alumni success stories also shows the high-level roles alumni are playing in the aviation, aerospace, security and intelligence fields.

Q: What are your plans for the future of the alumni office?

A: The data from our recent alumni survey is driving our goals and objectives. We are committed to four key areas: We want to create lifelong learning opportunities for alumni; build strong networks in the Eagle community; provide alumni rewarding ways to give back through volunteering, mentoring or financially investing in students; and we want to help alumni advance and enhance their careers.

It's great having a strong team with me to make this happen. They can exercise their creativity and their skills. I can see the passion and energy they all have to achieve these goals. 🌟

Remembering 9/11: 20 Years Later

Faculty, staff and alumni commemorate 20th anniversary of 9/11

BY ALAN MARCOS PINTO CESAR

In commemoration of the 20th anniversary of the Sept. 11 attacks, Embry-Riddle coordinated a series of discussions on the global impacts of that fateful day.

"Embry-Riddle alumni, faculty and staff were on the front lines on 9/11 and were leaders in responding to the hijackings," says Bill Thompson, executive director of the Eagle Heritage Project. "Their stories of anguish, compassion, struggle, professionalism, improvisation and leadership need to be shared for current and future generations."

Discussions demonstrated the many ways that Embry-Riddle responded as an institution. Ken Byrnes, Embry-Riddle's head of flight training, mentioned the flight restrictions that went up and still stand today. Chris Bonner, an FBI agent who later helped develop Embry-Riddle's Homeland Security program, forged relationships with Daytona Beach's Muslim community. "They were hurt. Muslims died in those buildings too," he says. "The best intel, the best cooperation, came out of that community."

The 9/11 Research and Remembrance Project will continue to build its collection for the 25th anniversary. Find video recordings, audio interviews and written stories at commons.erau.edu/project-911. 🦋



PROVIDING REFUGE

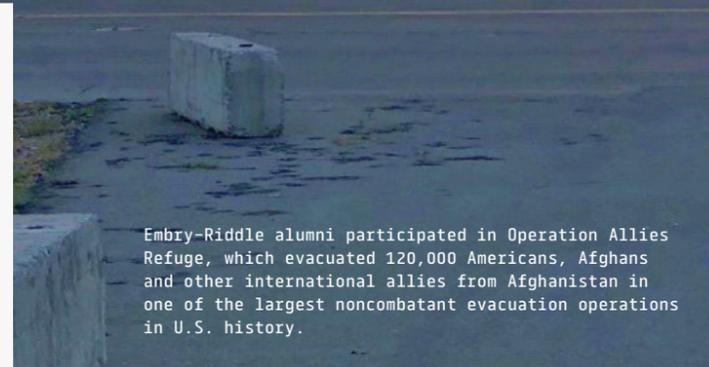
Alumni support
Kabul evacuations

BY ALAN MARCOS PINTO CESAR

When Doug Mayo ('11) heard about Operation Allies Refuge, he felt it imperative that he volunteer. As an F-16 pilot who commissioned out of Air Force ROTC Detachment 157, he had flown over Afghanistan in 2015, protecting the lives of soldiers on the ground by taking the lives of others. It was his job, and an important and necessary one, but he still carries the weight of it.

"When I recognized the magnitude of lives we would be able to save, I saw it as a yin to the yang, an opportunity to balance what I had to do in 2015," Mayo says.

In August 2021, he flew on military transport to Hamid Karzai International Airport in Kabul, where he supported what would become the largest noncombatant evacuation operation in U.S. history.



Embry-Riddle alumni participated in Operation Allies Refuge, which evacuated 120,000 Americans, Afghans and other international allies from Afghanistan in one of the largest noncombatant evacuation operations in U.S. history.

He worked alongside servicemen and servicewomen from multiple military branches, as well as fellow alumni from Embry-Riddle and Det. 157, to evacuate 120,000 Americans, Afghans and other international allies from a country that was rapidly returning to Taliban control.

A No-Fail Mission

Mayo arrived in Kabul to work as a logistical problem-solver with Adam Cooper ('13), who always wears a small Embry-Riddle patch on his uniform. Cooper is director of operations for a contingency response element, a rapid-deployment team that operates the airfield and airspace in a contested environment.

Cooper says about 100 aircraft arrived every day and would usually be wheels-up again in less than an hour, even with as many as 450 people to pack in.

"In expedited noncombatant evacuations like this, the goal is to keep the aircraft on the ground for the least amount of time possible," Cooper says. "They're not even turning off their engines."

Operators on a no-fail mission like this one expect to forgo all normalcy until the job is done. That means sacrificing sleep and scheduled meals. "Ops never stops," Cooper says.

Matt Steele ('09, '18), a C-17 pilot, says nothing was routine. "Pretty much every day you woke up you didn't know what to expect," he says. "You had the minimum 12 hours crew rest, then you were back at it," not knowing how many more long days there would be.

120,000 Souls Freed

Steele, Mayo and Cooper were all hit by the human weight of this mission. The desperation among evacuees became even more apparent after two suicide bombers and gunmen successfully attacked areas around the airport, which led to the banning of any luggage. People were leaving with only the clothes they wore, Mayo says.

"I saw people wanting to get to a safe, free place where their daughters can go to school freely. Many of these folks were at constant risk. Military members rotate in and out, but these people would help us, and the rest of their lives they were in a threatened environment because of the help they provided us. It's so important that we welcome them and provide a great place for them to go."

The rugged C-17s, which normally hold 134 passengers when fitted with seats, became a flat-floored lifeboat for 450, sometimes more. Air Mobility Command confirmed that one flight set a C-17 passenger record of 823, including 183 children.

Despite the tight quarters, evacuees seemed to take on a sense of relief on board. Mayo, a father of two, was reminded once again of the importance of this mission while sitting across from an Afghan man on his flight out of Kabul. "He had a woman, probably his wife, next to him, his daughter on his lap and his son sitting near his feet, and just seeing the way he was holding his daughter, it was great to get a chance to be in their presence and see the multitude of emotions on his face as he left behind probably everything he's ever known. But he did it with his family, and now his family is safe. The whole trip was worth it because of that." 🦋

HEAR MORE

Listen to personal stories and tactical details from **Adam Cooper ('13)**, **Doug Mayo ('11)** and **Matt Steele ('09, '18)** on the Talon Talks podcast. Find it at alumni.erau.edu/podcast or on your favorite podcast app.



Justin Martin ('14), left, and Collin Anderson ('15), right, worked on the Blue Origin flight that sent aerospace legend Wally Funk, center, and Jeff Bezos into space.

LAUNCHING CAREERS

Future Alumni Network opens doors to dream career

BY TRISTYN BEMIS ('20)

Justin Martin ('14) knew he liked working with spacecraft, but he wasn't entirely sure what he wanted to do after he graduated from Embry-Riddle. Fortunately, a chance experience during his time as a Future Alumni Ambassador set him on the path to a dream career working toward the future of spaceflight, including a role as a safety inspector for Blue Origin's New Shepherd flight NS-16 – the first human-rated space launch that sent Jeff Bezos, 82-year-old Wally Funk and two other passengers on an 11-minute suborbital spaceflight.

"The Future Alumni Network is a great program to help our students make connections with industry before they graduate," says Edmund Odartey ('04, '10), executive director of Alumni Engagement. "As official ambassadors for our office, they engage with Embry-Riddle alumni through events, services and mentorship programs, which can often lead to the discovery of career opportunities."

Martin's career discovery began during a tour of the FAA's NextGen Florida Test Bed, which was arranged by the Future Alumni Network.

"They had set up a tour of the NextGen Test Bed for the ambassadors," Martin says. "That tour is what sparked my interest in NextGen."

After a stint as a volunteer at the Florida Test Bed, Martin moved into a paid position as a portfolio analyst for the NextGen program. He eventually transitioned to the Office of Commercial Space Transportation as a safety inspector.

"The doors kept opening," Martin says. "And I kept walking through them." ✨

BROTHERS OF THE WIND REUNITE

Brothers of the Wind (BOW) held an event at this year's homecoming that explored ways to reconnect with the university and provide new networking and support opportunities for students.

"We are here to unite with the students," says Madonna Buckner, a director of BOW and one of the first female African American

students to attend Embry-Riddle. "There is a legacy we have here, and we want people to know who we are."

Brothers of the Wind recognized the career achievements of three members at this year's homecoming celebration. Evelyn Spell ('84), right, was the university's first female Army ROTC commission, and Durwin Mitchell ('84, '01), left, works as general manager of safety, security and environmental compliance at Delta Air Lines. The other awardee, Anthony Green (not pictured), is a check airman at United Airlines. ✨



What Is the Embry-Riddle Legacy Society and How Can I Join?

Leaving a legacy for future Eagles

The Legacy Society was founded in 1998 to express appreciation and recognition for those visionary individuals who inform the university, confidentially and in writing, that they have made a provision for a future gift through a bequest in a will or by naming Embry-Riddle as a beneficiary in a trust, life insurance policy or retirement plan.

Planned gifts such as charitable gift annuities or charitable remainder trusts also qualify as future gifts, and they can provide lifetime income to donors or other beneficiaries. Planned gifts may be either unrestricted or designated for a particular Embry-Riddle department or program. They also may be named for one or more individuals.

By becoming a member of the Legacy Society, you help secure the university's place as a world leader in aeronautical education.

Faculty Emeritus Alex Wells and his wife, Mary, (pictured below) joined the Legacy Society with a planned gift to establish an endowed scholarship to assist aviation business administration students.

We invite you to create your own legacy and help those who follow reach their destinations.

If you have already named Embry-Riddle in your will or other aspect of your estate plan, thank you, and please call or email us so we can document your gift. We want to be sure that we fulfill your wishes.

To inquire further about joining the Legacy Society, contact Travis Grantham, executive director of Gift Planning and Special Gifts, at 386-226-7568 or travis.grantham@erau.edu.

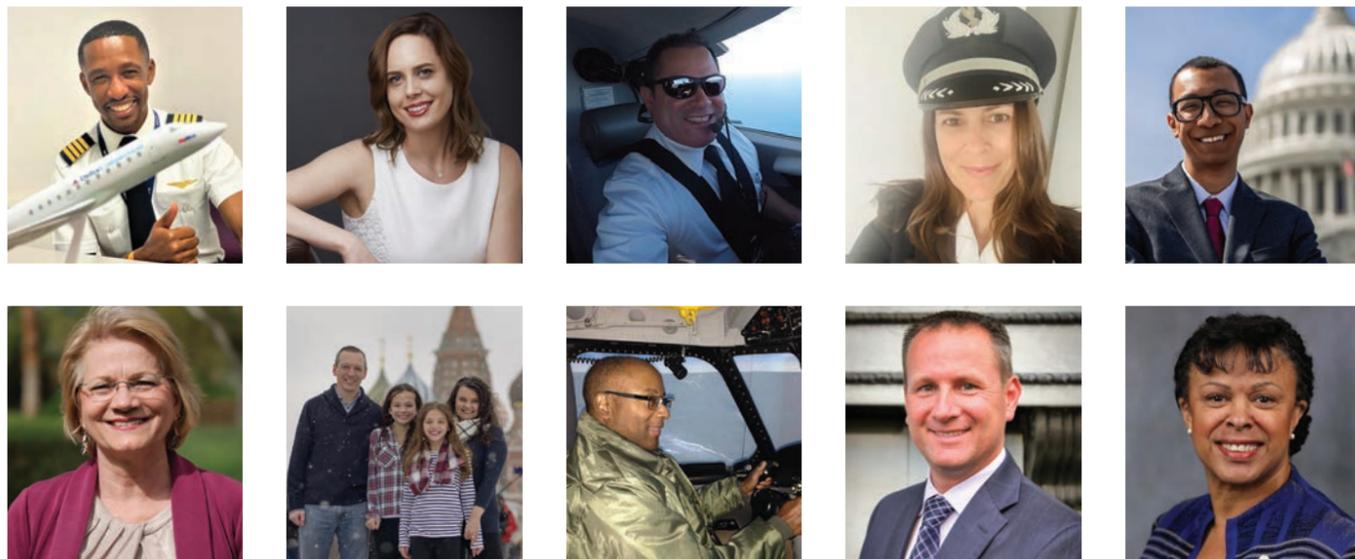


MEMBER BENEFITS

- Invitations to exclusive university and educational events
- Invitation to annual Legacy Society dinner
- A lifetime subscription to *Lift*, the university's magazine for alumni and friends, and Embry-Riddle's Impact Report
- Legacy Society lapel pin

CLASS NOTES

Send us your news! Email your life events to alumni@erau.edu. For guidelines, visit alumni.erau.edu/notes_guidelines.



Top row, left to right: Albert Obi, Jessica Naor, Ed Rod, Capt. Sara Wylie and Dwayne Clark. Bottom row, left to right: Lorena de Rodriguez, Sean Fuller and family, Joscelyn Smith, Andrew Broom and Lt. Gen. Stayce D. Harris.

Career News

1960s

Terry Maxwell ('64) is an airworthiness systems certification specialist for Maxwell Aerospace Consulting-Jet Engines & Aircraft.

1970s

Rick Henry ('75) retired from FedEx after 33½ years and now lives in Anchorage, Alaska, and Collierville, Tennessee, with his wife Linda, who used to work in Flight Records in Daytona Beach in 1975.

Harry Mitchel ('79) was named vice president of operations of Baker Aviation, a full-service aircraft maintenance, management and charter company.

1980s

Roy Gioconda ('82) was named vice president of customer success at Bluetail, a business and general aviation software as a service (SaaS) company.

Todd Peterson ('85) is chief embedded systems engineer at Management Sciences, Inc.

Joscelyn Smith ('86) is an analyst for the U.S. Navy at Naval Base Norfolk.

Lt. Gen. Stayce D. Harris ('87) was elected to The Boeing Company's Board of Directors and will serve on the Aerospace Safety and Audit committees. Harris is an experienced Boeing 747 pilot and was a United Airlines pilot for nearly 30

years before retiring from the company in 2020. She is a retired U.S. Air Force Reserve lieutenant general, who last served as the Inspector General of the Air Force. Harris made history by becoming the first African American woman to command an Air Force operational flying squadron, a wing and a numbered Air Force unit, and by serving as the first female Inspector General of the Air Force.

Robert Mitchell ('87) has earned accreditation as a National Association of Flight Instructors Master Flight Instructor. Retired after serving 30 years in the U.S. Army, Mitchell currently works for CAE, a Canadian manufacturer of simulation technologies and training services.

Trevor Benjamin ('88) is currently a senior instructor at the University of Trinidad and Tobago Aviation Campus.

U.S. Air Force Reserve **Maj. Gen. Kenneth R. Council Jr. ('89, '08)** was promoted to major general in a ceremony at Scott Air Force Base, Illinois. He is the 14th commander of the U.S. Transportation Command's Joint Transportation Reserve Unit and its Army, Navy, Marine Corps, Air Force and Coast Guard reservists.

David Lincoln ('89) is currently flying as captain with Delta Air Lines on the Boeing 737, based in Los Angeles, and residing in Henderson, Nevada. He writes: "In April 2021, added the Commercial/Instrument Helicopter

rating and will work on the turbine transition into the Airbus A-Star/AS350/H125 sometime this year."

1990s

Jon Larsen ('90) is a 757/767 captain at United Airlines, based at Chicago O'Hare International Airport.

Todd Dunlap ('91) was hired as CEO of OfferUp, a Seattle-area, billion-dollar mobile marketplace. He is also a member of its board of directors.

Raymond (Ray) Jancso, Jr. ('91) is the manager of Crew Travel Services at FedEx Express, where he oversees a team of logistics specialists tasked with securing flight crew hotel, in-flight catering and ground transportation services worldwide.

Rebecca Lutte ('91), an associate professor at the University of Nebraska at Omaha Aviation Institute, was awarded a 2021 Award of Achievement: Contributions to Aviation from the Ninety-Nines, Inc. The Ninety-Nines, Inc. is an international organization of certified women pilots that promotes aviation among women globally.

Ed Rod ('91) is a corporate LearJet 60XR captain in South Florida and lives in Boca Raton, Florida, with his family.

Col. Sean J. VanHoltz ('91) is a pilot for American Airlines, based in Charlotte, North Carolina. He is also

an emergency preparedness liaison officer in the U.S. Air Force Reserve with duties in the National Capital Region (D.C.).

Mary Lynn Koenig ('92) upgraded to a B-737 captain with United Airlines. Koenig has been with Continental/United Airlines for 23 years.

Lisa Cochran ('93) was hired as chief information officer for VyStar Credit Union, headquartered in Jacksonville, Florida.

Brig. Gen. Thomas R. Drew ('93) assumed command of U.S. Army Human Resources Command, which conducts distribution, strategic talent management, information technology and soldier programs and services for the entire U.S. Army.

Mihai Smighelschi ('93, '96) is deputy director for the Southwest Oregon Regional Airport.

Paul Suarez ('93) has joined Casey's General Stores, Inc., as the company's chief information security officer. He will lead the cybersecurity team at Casey's General Stores, a Fortune 500 company and the fourth largest convenience retailer, operating over 2,200 convenience stores in 16 states.

Maj. Gen. Ricky Rupp ('95) assumed command of U.S. Forces Japan and 5th Air Force and was promoted to lieutenant general before assuming his new, dual-hatted commands at Yokota in western Tokyo.

Sean Fuller ('96) is the international partner manager for the Gateway program at NASA's Johnson Space Center. He plays an important role in negotiating and integrating with international partners.

Andrew Broom ('97, '00) is the new senior vice president for strategy, marketing and innovation at the National Business Aviation Association. Broom joined NBAA from the Citation Jet Pilots Association, where he served as CEO since 2016.

Col. Fred E. Garcia II ('97) is the new director at the U.S. Air Force Research Laboratory, commonly known as Rome Lab, in Rome, New York.

Mike Gordon ('97, '01), chief information security officer at Lockheed Martin, won WashingtonExec's 2021 Chief Officer Award for Public Company CISO.

Col. Dean Bellamy ('98) was named the executive vice president of National Security Space for Redwire, a Jacksonville, Florida-based company that makes components for space systems and infrastructure.

Dennis Freeman ('98, '00) was named technical advisor of Mission Secure Government and Defense, an industrial control system cybersecurity technology company.

Capt. Sara Wylie ('98) flies the Airbus A320 for American Airlines. She says she "spends the winter

in South Lake Tahoe and summers on Lake Norman in North Carolina."

Capt. Andrew Eriks ('99) recently departed as commanding officer of Coast Guard Air Station Barbers Point in Honolulu, Hawaii, to continue his career as the service's Office of Aviation Forces' Chief of Aviation Forces at Coast Guard Headquarters in Washington, D.C.

Bao Rasebolai Mosinyi, Ph.D. ('99, '01), is the new chief executive officer of the Civil Aviation Authority of Botswana. An aerospace engineer with more than 20 years of experience, he joins the CAAB from Pratt & Whitney, where he held the position of associate director.

Lorena de Rodriguez ('99) is the president of SSI, a provider of safety and security training and regulatory compliance consulting services.

2000s

Shawn Hoem ('00) is a helicopter mechanic at Helicopter Express, based out of Wenatchee Valley Airbase in Washington. He has been a helicopter mechanic at multiple companies for more than 25 years across the lower 48 states, as well as Alaska [see story, page 16].

Michelle Lucas ('00) is founder and president of Higher Orbits, which was chosen to receive a \$1 million grant from Blue

Origin's Club for the Future. Higher Orbits is a nonprofit that aims to inspire youth about the wonders of STEAM through spaceflight [see story, page 22].

Justin Lazzeri ('02), former vice president of aircraft operations, is president of Skytech, Inc., a privately owned general aviation sales, service, FBO and management/charter organization celebrating its 45th year in business.

Dianna Klein ('03, '15) has become the first female pilot to take passengers on the Zero-G Experience, giving them the sensation and experience of zero gravity and what it's like to be an astronaut in space. She is also Zero-G's director of business operations.

Brig. Gen. William L. Thigpen ('03) is U.S. Army South commander, after a June 30, 2021, change of command ceremony at Joint Base San Antonio-Fort Sam Houston in Texas. U.S. Army South is the Army Service Component Command of U.S. Southern Command with an area of responsibility that encompasses 31

countries and 15 areas of special sovereignty in Central and South America and the Caribbean.

Kelly Austin ('04) was named interim senior vice president for Commonwealth Campuses of The Pennsylvania State University and executive chancellor.

Richard Morris ('04), director of global safety, quality assurance and compliance at CAE in Montreal, Canada, was added to the Air Charter Safety Foundation board.

Shinji Maeda ('05), a pilot who is blind in one eye, is embarking on a journey to circumnavigate the world. Maeda works as a manufacturing and operations analyst at Boeing. He is also a flight instructor at a Snohomish flight school and a motivational speaker.

Justin Barnett ('06) is vice president of sales for Advanced Composite Structures, a company providing rotor blade and composite repair technologies for the aviation industry.

Allen Mounts ('06) is a pilot for Elite Jets, a charter company based in Naples, Florida.

Yasmina Platt ('06) and **Jared Platt ('13)** have both had career moves recently. Yasmina is now Joby Aviation's infrastructure launch lead, and Jared is now a captain on the B777 at Kalitta Air. They remain based in Houston, Texas.

Daniel Edwards ('07) assumed airport director responsibilities at the DeFuniak Springs Municipal Airport in DeFuniak Springs, Florida.

Brian Dyer ('08, '09), who is co-chair of the Nevis COVID-19 Task Force, was awarded the 2020 Medal of Honour for outstanding contribution to national service during a crisis by Sir Tapley Seaton, governor general of St. Kitts and Nevis. Dyer is director of the Nevis Disaster Management Department.

Tyler Grinnell ('08), a member of Embry-Riddle's College of Engineering Industry Advisory Board, is Virgin Orbit's new vice president of flight and

launch. He joins Virgin Orbit after spending 12 years at SpaceX, where he held several positions, including director of launch and recovery operations.

Chad St. Francis ('09) is vice president of business development and marketing at Aviation Specialties Unlimited, Inc., which supports night vision programs.

2010s

Sameer Adam ('10) is senior vice president of commercial for ACIA Aero Leasing, a subsidiary of ACIA Aero Capital and regional aircraft lessor with offices in Ireland, Mauritius, France, Canada and South Africa.

Daniel Harris ('10) is an automation safety engineer at Boston Dynamics.

Amy McCleney ('10), a senior research engineer at the Southwest Research Institute, was named to the inaugural class of Offshore Technology Conference Emerging Leaders, a group of young professionals making key contributions

to the offshore energy sector. Joining the institute in 2015, McCleney conducts computational fluid dynamics simulations for clients in the areas of fluid and thermal science.

Tariq Nasraldeen ('10, '12) is founder and chief executive aviator of Firnas Aero.

Christopher Ash ('12) is senior vice president of aviation business development at Alliance Aviation Companies.

Command Sgt. Maj. George M. "Mike" Dove ('12), of U.S. Army Aviation and Missile Command, has retired after 27 years of service. Enlisting in the Army in 1994, he trained as a helicopter repairer and has served in many leadership positions.

Brian Foersch ('15) is Bombardier service sales representative at Duncan Aviation's full-service MRO in Lincoln, Nebraska.

Jessica Naor ('15), chief operating officer at GrandView Aviation, has received the National Air Transportation Association Future Leader Award.

Rob Keane ('16) is chief operating officer of Velontra, a veteran-owned startup company focused on hypersonic unmanned flight.

Dwayne Clark ('18) is a legislative assistant at the U.S. House of Representatives.

Yashica Khatri ('18), a Ph.D. student at the University of Colorado, has earned a 2021 Zonta Amelia Earhart Fellowship. Khatri is pursuing her Ph.D. in the astrodynamics and satellite navigation focus area.

Albert Obi ('18), a flight standards and check pilot at Embry-Riddle, has earned his Master Flight Instructor accreditation from the National Association of Flight Instructors.

Aaron Clevenger ('19), Embry-Riddle's assistant provost and dean of international programs, was recognized as a Fellow of the Royal Geographical Society.

Holly Gilewski ('19) has joined the aircraft sales support team for Aero Asset, a Toronto, Canada-based, global helicopter sales and market intelligence firm. Gilewski is based in Orlando.

Joe Jewell ('19) is a pilot with Piedmont Airlines.

Deontae Watson ('19) is deputy airport director at Fayetteville Regional Airport in Fayetteville, North Carolina. He also became an Accredited Airport Executive through the American Association of Airport Executives.

2020s

Grant Johnson ('20), a graduate student at Princeton University, received a High Performance Computing Achievement Award from the National

Energy Research Scientific Computing Center for outstanding research by an undergraduate student. He conducted his research while he was an undergraduate at Embry-Riddle, working with researchers at Lawrence Livermore National Laboratory in California.

Macy Riddle ('20) is a supportability engineer at Collins Aerospace in Cedar Rapids, Iowa.

Jamie Helander ('21) was selected for the Because of her Story 2021 Virtual Internship Program through the Office of the Under Secretary for Museums and Culture. She spent her summer with the National Air and Space Museum virtually and participated in virtual programming that focuses on the stories of women in aviation and aerospace.

Alexis Macias ('21) is a special agent for the U.S. Secret Service.

Marriages/ Engagements

2010s

Matthew Del Buono ('10) and **Courtney Thurston ('19)** were married on March 14, 2021. The marriage was witnessed by **Andrew Keating ('10)** and another longtime friend. Courtney and Matthew work in different divisions at Microsoft Azure. She is a software engineer, and he is a senior software engineering manager.

Other

Evan Bogan ('95, '10), **Michael Campbell ('96)**, **Todd Provancher ('95)** and future Eagle Edwin Provancher recently visited Embry-Riddle's Daytona Beach Campus.

Col. Geoffrey Weiss ('97) published his first book, *The New Art of War: The Origins, Theory, and Future of Conflict*, with Cambridge University Press.

FO Samuel Wilson ('04), **FO Chad Cook ('93)** and **CA William Allen ('83)** flew April 9, 2021, on FedEx B777 from Oakland to Narita.

Retired Lt. Col. Andy Woodrow ('06) published a book titled *Serious Pressure: Standing between Life and Death for Stratospheric Flyers*, which is about the U.S. Air Force, Physiological Support Division.

Alice Barnett ('08) and **Tyler Barnett ('11)** bought their 1974 Cherokee Pathfinder in 2018 and fly out of KAEG in New Mexico.

Jean Mbog ('13) recently volunteered at schools and orphanages in Accra, Ghana, along with a group of aviation professionals that he put together. He has similar volunteer trips planned for Cameroon and Nigeria.

Tryon Jones ('20) created the *AeroNerd* YouTube channel to share best practices with other aviation enthusiasts. 🐦



DET. 157 HERO

U.S. Air Force weapons systems officer **Capt. Jasen Hrisca ('12)** was recently awarded the Distinguished Flying Cross Medal, the highest honor for heroism in aerial flight, for contributing to saving the lives of 88 American and Afghan service members during a nearly two-hour firefight overseas.

Hrisca and his crew from the 73rd Special Operations Squadron provided air cover for special forces in Afghanistan, firing at enemies who

ambushed the American and Afghan team. The airmen provided continuous fire to shield helicopter forces during evacuation efforts and ensured the rescue of wounded ground forces.

Hrisca credits Embry-Riddle for preparing him well for military service.

"I owe everything I am to Embry-Riddle and Detachment 157," he says. "My time there gave me the discipline and confidence to know that I can accomplish or get through anything."

IN MEMORIAM

For obituaries and up-to-date death notices, visit alumni.erau.edu/passings.



Trustee Emeritus S. Harry Robertson Jr. (HonDoc '72)

Oct. 9, 2021

Harry Robertson Jr., an aviation legend and great friend to Embry-Riddle, was an engineer and the inventor of the Robbie Tank, a self-sealing fuel tank that minimizes

the risk of aircraft fires. His innovation is credited with saving the lives of thousands of pilots. For his contribution to pilot safety, he was enshrined in the National Aviation Hall of Fame in 2011.

Robertson's contributions to Embry-Riddle also were transformational and helped establish the university as a globally recognized aviation safety leader. On the Prescott Campus, his donations launched the Robertson Safety Institute and innovative Robertson Aircraft Crash Investigation Laboratory. Over the past three decades, he made gifts to support scholarships, athletics, the College of Engineering and the College of Arts and Sciences in Daytona Beach, the College of Aviation in Prescott and Embry-Riddle Worldwide. His generosity helped the university build the STEM Education Center in Prescott, the Henderson Welcome Center and expand the library, archives and ROTC facilities at the Daytona Beach Campus.

Robertson valued his long relationship with Embry-Riddle as an advisor and benefactor. Most of all, he appreciated the opportunity to reach students who would continue his commitment to safer skies. In 2009, he expressed his feelings about the university to *Lift*, "They have allowed my contributions to get into the hands of students who are the future of aerospace."



James D. Raisbeck

Aug. 31, 2021

James D. Raisbeck, 84, was the founder and chairman of Raisbeck Engineering, a Seattle aerospace company. An aerospace innovator and philanthropist, he established the first endowed chair of its kind at

Embry-Riddle's Prescott Campus — the James D. Raisbeck Engineering Design/Build/Test Endowed Chair at Embry-Riddle.

Additionally, the Raisbeck Foundation contributed to help build the new STEM Education Center at the Prescott Campus with the Engineering Design Studio at the center named in Raisbeck's honor. He also facilitated the donation of a Raisbeck-designed swept blade turbofan propeller from Hartzell Propeller Inc., which hangs on display in the STEM Education Center. The Raisbeck Foundation has given significant grants to support education, the arts and medical research. James and his wife, Sherry, helped establish the Raisbeck Aviation High School, a STEM and aviation-focused high school in the Seattle area.

The American Institute for Aeronautics and Astronautics (AIAA)/Museum of Flight recognized Raisbeck as a Pathfinder in 2007. He received the Lifetime Aviation Entrepreneur Award by the Living Legends of Aviation Foundation, of which he was a member, in 2008. Raisbeck also received election to Fellow in the AIAA in 2012.

1950s

Allen Doyce LeBlanc ('54)
March 22, 2021

John Jensen "Jack" Hill Jr. ('56)
July 6, 2021

Frank Sausen ('56)
April 21, 2021

Thomas W. Stillman ('57)
May 13, 2021

1960s

Thomas Vaughn Olanyk ('63)
June 18, 2021

William "Bill" J. Taylor III ('64)
June 19, 2021

Walter Brunner Jr. ('69)
June 30, 2021

Dennis Drehouse ('69)
June 1, 2021

1970s

Michael A. Baron ('70)
June 8, 2021

John Darryl Mitchell Sr. ('74)
June 19, 2021

Booker T. Brown ('77)
Apr. 1, 2021

1980s

John Packard Davis ('80)
June 3, 2021

Richard "Dick" Kley Jackson ('80)
May 10, 2020

Lt. Col. Dennis Arthur "Mac" McAdoo ('80)
June 6, 2021

Thomas Harvey Wood III ('80)
May 2, 2021

Robert Paulus Jr. ('81)
Aug. 3, 2021

Charles "Chuck" C. Concannon ('83)
May 1, 2021

James Harper ('85)
May 21, 2021

Roland Hagley ('86)
Aug. 19, 2021

George Henry Chadman ('88)
May 6, 2021

Donald Edward Woodson ('89)
Aug. 8, 2021

1990s

Capt. Brett Curtis Clark ('90)
Aug. 10, 2021

Robert Lester Sampe ('92, '98)
July 11, 2021

Mary "Checks" Niemczyk ('95)
Aug. 27, 2021

Richard Lee Spaulding ('95)
July 1, 2021

Marlon Leslie Payne ('96)
July 4, 2021

James R. Woodward ('96)
April 15, 2021

Jackie Lee Bibbs ('97)
March 23, 2021

Douglas Bryant ('98)
July 18, 2021

2000s

Donald R. Taylor Jr. ('05, '07)
Aug. 28, 2021

Robert "Bob" Kenneth Butler Jr. ('06)
April 20, 2021

Jeffrey B. Sexton ('06)
June 19, 2021

George J. Ringger ('08)
June 5, 2021

2010s

Ret. SMSgt E8 Oren Manfred Carrol Jr. ('13)
June 23, 2021

John Q. Garza ('13)
Aug. 22, 2021

Anthony Munden ('14)
Aug. 3, 2021

Jaeho Lee ('18)
Aug. 5, 2021

Other

Richard Caldwell Bagby Jr.
Emeriti Professor
June 12, 2021

Richard Warren Bloom
Longtime faculty member and administrator at the Prescott Campus
June 1, 2021

David Brandstein
Professor at Prescott and Worldwide campuses
June 28, 2021

Thomas Joseph Connolly
Professor Emeritus
June 15, 2021

Philip H. Elliott Jr., ESQ. (HonDoc '04; '72)

Trustee Emeritus and first sitting board member to become an Embry-Riddle benefactor.
Nov. 9, 2021

Mary Johnson
Former dean of students at the Prescott Campus
July 5, 2021

Lynnette Raye Porter
Professor Emeritus
May 26, 2021

Webster B. "Dan" Todd Jr. (HonDoc '76)
Former Trustee
June 3, 2021

Brandon White
Embry-Riddle student
May 1, 2021



Game Time

Readers fill in the blanks on one of their favorite gathering spots, pictured above, which was published in the Spring/Summer 2021 issue of *Lift*.

Searching for the Sun King

While I don't recognize any of the "Pool Sharks," in between classes I worked in the U.C. [University Center] Cafeteria (1981-1983) and always remember staring at that National Airlines B747 (with the very cool Sun King logo!) any chance I could, including during weekly Friday afternoon forays to the Pub.

Recently, I returned to campus and was amazed by all the changes – it truly looks like a university now; however, I wonder whatever happened to that B747. Sure hope it's tucked away neatly inside the ERAU archives?

Chuck Hurdleston ('84)

B.S. Aeronautical Studies

EDITOR'S NOTE: *Rest assured, Chuck – the Sun King B747 is safe and sound. It was in the alumni office for a while but is now hanging in the Aircraft Systems Lab in the Emil Buehler Aviation Maintenance Science building, room 233.*

Pool Shark(s) Identified!

As to the picture on the back of the magazine, I believe it is about 1977, and I am the guy with the pool cue in the air in the center of the picture. I believe Chris Basso is the one standing next to me (to my right), also with a pool cue. Behind me with his arm on the pinball machine, I believe, is Paul Fitzgerald.

Mark Nichols ('78)

B.S. Aeronautical Science

Fantastic Memories

The picture is circa 1975 or 1976 at the U.C., as we called it. The U.C. opened in 1975. Who knows ... I may be in the photo. I may recognize one or two folks.

In any case, we for the most part all lived in the dorm. There was only ONE then – Doolittle. I was in room 242 for my first two years before moving on to Snapfinger Woods Apartments on Nova.

This is sooooo cool. It looks like a line for the cafeteria at dinner time in the upper left. The games/pool table were perhaps a quarter per game! Wow!!!!!! The memories are fantastic.

1st Lt. Barry Cohen ('79, '80)

B.S. Aeronautical Science
Master of Business Administration

'Proud to be Part of ERAU'

The photo looks like it's circa 1978 to 1985. I might even be one of the skinny kids with his back turned to the camera. What a great place to spend time between classes or have some fun after class and special events: 25-cent beers at happy hour at the Pub, Philly steak-n-cheese punches on my meal plan card and games of pool.

Registration for upcoming trimester was always challenging – the school was always taking care of the students, and we all felt proud to be part of ERAU. [I still look] back at the fantastic instructors and professors that, to this day, shape my work ethic.

Jeffrey R. Engborg ('85)

B.S. Aviation Maintenance Management

TAILWINDS

Email details, and any other
photos you might have, to
liftmag@erau.edu.

A Floating Mystery

We're adrift, looking for context here. Notes indicate that an Embry-Riddle Vets Club held an annual raft race to raise funds for the local Veterans Association sometime in the 1970s. Details beyond that are murky. Where was the competition held and for how many years? Were there rules, or was it total waterborne chaos?

Help us inflate our institutional knowledge: Share memories of this competition and we'll revive your tube-paddling notoriety in our next issue of *Lift*.



Photo courtesy of the Embry-Riddle Archives