



Your favorite Embry-Riddle Air Show is back!

Join us this fall in Daytona Beach, Fla. for a spectacular air show over the Atlantic Ocean, featuring: the U.S. Air Force Thunderbirds, Canadian Forces Snowbirds Demonstration Team and Black Diamond Jet Team—as well as world-class aerobatic and parachuting acts, U.S. military jet fighter tactical demonstrations and much more.

While you're in town, visit our state-of the-art campus to see how Embry-Riddle is growing and enjoy Homecoming Weekend!

Thursday, Oct. 11

- Alumni Registration
- Alumni Return to Classes

Friday, Oct. 12

- Alumni Registration
- Alumni Return to Classes
- Alumni Awards Dinner*
- *(Nominate your fellow alumni for a prestigious award: www.ERAUalumni.org/awards)

Saturday, Oct. 13

- Wings and Waves Air Show
- EagleNight "Millennium Celebration"

Sunday, Oct. 14

Wings and Waves Air Show

Follow Wings and Waves on Facebook: www.facebook.com/wingsandwaves

OCTOBERWEST - OCT. 4-6, 2012 - PRESCOTT

Visit Embry-Riddle in Prescott, Ariz. for our annual homecoming celebration west of the Rockies!

Thursday, Oct. 4

- Alumni Registration
- EagleNight "Millennium Celebration"

Friday, Oct. 5

- Alumni Registration
- Alumni Golf Tournament
- Alumni Awards Dinner*

Saturday, Oct. 6

- Alumni Fly-In and Static Display
- OctoberWest Activities

*(Nominate your fellow alumni for a prestigious award: www.ERAUalumni.org/awards)

COME 'HOME' TO EMBRY-RIDDLE IN 2012











On the cover: Matthew Lyon, a student and member of the Autonomous Winged Educational Surveillance Operational Mission Experiment (AWESOME) at the Prescott Campus, launches the 'Skywalker' UAS in preparation for a national competition in June (See page 15). Photo by Stephen Rayleigh.

LETTER FROM THE PRESIDENT

Our best gift to the next generation: knowledge.

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Teacher, trainer, pilot

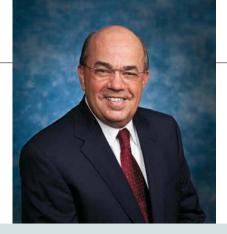
Christopher Walton ('82, PC; '84, WW) spends his free time teaching future aviators.

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Find out what your fellow Embry-Riddle alumni are up to now.



LETTER FROM THE PRESIDENT

What can we give our world that would make it a better place? I would offer that the best gift is knowledge—the collective knowledge of our generation.

This issue of *Lift* focuses on knowledge discovery—the research and development activities in which Embry-Riddle's faculty, students and alumni are engaged. These activities stand to change the world as we know it, for the better.

Take, for example, the Federal Aviation Administration's newly remodeled Florida NextGen Test Bed in Daytona Beach. Embry-Riddle is partnering with 10 different companies, the FAA and other agencies to shape the future of our national airspace at this state-of-the-art facility—and alumni Wade Lester ('01, WW) and Jon Standley ('09, DB) are leading the way (page 16).

We expect collaborations like those at the NextGen Test Bed will grow, as we continue to develop the Embry-Riddle Aerospace Research and Technology Park (page 12).

The stewardship of our environment through advancements in green technology is also an important objective. The Eco Eagle, the first-ever hybrid gaselectric aircraft, is an example of the type of work being done in this area (page 5). Embry-Riddle is also partnering with Galapagos National Park and the University of San Francisco in Quito, Ecuador, to create a low-cost unmanned aerial surveillance system that would help protect the islands' natural resources, while also gathering data about rare animal and bird behaviors (page 17).

At our Prescott Campus, faculty and student researchers in the Space Physics department are making new discoveries in the study of supernovae explosions, and are working to improve instruments that advance understanding of our universe (page 17). Additionally, multidisciplinary student teams have been challenged through the E-Prize program at Prescott to develop innovative products capable of competing at a national level (page 15).

A project that I am particularly proud of combines the elements of what I like to call the "three-legged stool" philosophy for our university:

teaching, research and service to others. The project, which was a combined student and faculty effort, provided a solar-powered water purification system to an orphanage and community in rural Haiti. The system is now providing 1,200 gallons of clean drinking water daily to 600 orphans and members of a neighboring village (page 14).

Instilled with the Embry-Riddle passion to seek and find answers, our alumni often take the lead in knowledge-discovery projects in their respective fields. For instance, Sean Jodoin ('97, DB) is building and managing the supply chain for the world's first commercial spaceliner (page 8); Col. Ron Garan ('94, WW) recently returned from a research-laden six-month tour aboard the International Space Station (page 13); and a trio of Prescott Campus graduates is directing the redesign of communication and maintenance processes of our nation's Launch and Test Range System. The system ensures the safe and efficient deployment of everything from satellites to ballistic missiles (page 10).

At Embry-Riddle, we focus our time and energy on applied research that solves some of the most challenging problems facing the industries we support, and that improves our world. Stay tuned to your alma mater as we continue to discover knowledge and share it with others.

Warmest regards,

JOHN P. JOHNSON, PH.D. PRESIDENT AND CEO

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ALTIMETER

More news and events at Embry-Riddle:

For the 12th consecutive year, the annual "Best Colleaes" auide published by U.S. News & World Report ranked Embry-Riddle's undergraduate aerospace engineering program No. 1 in the nation.

Frank Ayers, executive vice president and chief academic officer at Embry-Riddle's Prescott Campus, received a Patriotic Employer Award from the **Employers Support** Group for the Guard and Reserve.

M.B. McLatchey, assistant professor of humanities at the Daytona Beach Campus, was honored with The American Poetry Journal's 2011 American Poet Prize for her poem, "1-800-THE LOST."



EXPANDING OUR REACH

Embry-Riddle to assist China with growing need for aviation professionals

mbry-Riddle recently signed agreements with three Chinese universities to assist with the growing need for aviation professionals in China.

John Watret, executive vice president and chief academic officer for the Worldwide Campus, traveled to Tianjin, China, in September for the signing of a cooperative education joint Memorandum of Understanding (MoU) between Embry-Riddle in Daytona Beach and the Civil Aviation University of China (CAUC).

Following the 2010 agreement with the Republic of Singapore's Royal Air Force and Singapore Institute of Management University, this move solidifies

Embry-Riddle's position within the rapidly growing aviation sector in East Asia, Watret said.

"At Embry-Riddle, we are aware of the challenges that China faces in meeting the phenomenal growth in aviation," Watret stated during the MoU signing ceremony.

The joint program will enable students to earn a bachelor's degree from CAUC and a master's degree from Embry-Riddle.

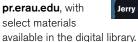
Richard Heist, executive vice president and chief academic officer at Daytona Beach, signed similar agreements with the University of Shanghai for Science and Technology, and Nanjing University of Aeronautics and Astronautics-Jincheng College in October.

PRESCOTT IS NEW HOME FOR JERRY LEDERER **AVIATION SAFETY LIBRARY**

The Flight Safety Foundation's Jerry Lederer Aviation Safety Library is the newest member of Embry-Riddle's Aviation Safety and Security Archives at Prescott Campus, and is now available to students, faculty and outside researchers.

A generous gift from the Flight Safety Foundation, the archives are located in the Robertson Aviation

Safety Center II building. Additionally, a detailed guide to the collection will eventually be accessible online at www.archives. pr.erau.edu, with select materials



"The Jerry Lederer Library collection is filled with valuable historical documents and it needed a home where it would be accessible to researchers and educators," says William R. Voss, president and CEO of the Flight Safety Foundation. "While [the Foundation] was honored to house our founder's library for many decades, its new home at Embry-Riddle will allow better access for all."

Lederer organized the Flight Safety Foundation in 1947 to pursue the continuous improvement of global aviation safety through research, auditing, education, advocacy and publishing.

Fast-pitch softball comes to Daytona Beach

Effective this year, the Eagles are contenders in the most competitive form of intercollegiate women's softball-fast pitch. The addition of fast-pitch softball brings the number of varsity sports at Embry-Riddle's Daytona Beach Campus to 16 (plus cheerleading).

"It's a great addition to our athletics program, but also addresses one of the university's priorities of recruiting female students to our campus," says Steve Ridder, director of athletics at Daytona Beach.

"Our focus over the last decade has been on building and improving our current programs and facilities," he says. "Having accomplished that, we're now moving to the next stage of adding a sport that's going to help our program grow."

Sarah Lockett (left) is the head coach for the new program. Originally from Perth, Australia, Lockett has coached at collegiate and international levels, and has played at the international level for almost a decade. Learn more at www.erauathletics.com.



More news and events at Embry-Riddle:

The ROTC Center at Daytona Beach was dedicated in November to the late Brig. Gen. William "Bill" Spruance, a long-time supporter and trustee.

Chris Plumb, aircraft avionics technician at the Prescott Campus, was named "Arizona Avionics Technician of the Year" in November by the Federal Aviation Administration and the Aviation Safety Advisory Group of Arizona.

Embry-Riddle was welcomed as a member of the Oak Ridge Associated Universities' consortium of Ph.D.granting universities.

.......

Jack Haun, director of aircraft maintenance at Embry-Riddle's Daytona Beach Campus, was honored as the 2012 Southern Region Aviation Maintenance Technician of the Year by the National General Aviation Awards Committee.



GROUND CONTROL

World-class UAS training facility supports new degree program

tudents who once learned to pilot unmanned aircraft systems using a laptop and specialized software can now train on the "real thing."

Embry-Riddle recently partnered with URS (formerly CATI Training Systems) to create the Unmanned Aircraft Systems Lab. The lab supports the Bachelor of Science in Unmanned Aircraft Systems (UAS) Science, which debuted this past fall at the Daytona Beach Campus. The lab comprises eight ground control station unmanned aerial systems training devices, which can be configured as dual crew training systems or as 16 individual training stations.

Dan Macchiarella, professor and chair of the Aeronautical Science department, says the realism of the simulators enables the students to experience operations very similar to UAS pilots and operators working in national defense, law enforcement, research and development. "Our students are learning to fly and operate the most widely used UAS. Our systems are just like those used in real-world settings such as in customs and border protection," he says.

URS develops and delivers high-fidelity, realistic UAS

training solutions and is one of the industry's largest providers of aviation training, courseware and instruction for the Department of Defense. "Our solutions accurately replicate the capabilities, limitations and challenges faced during actual missions," says Tim Saffold, URS campaign executive for unmanned operations.

The new UAS laboratory at Embry-Riddle is named for URS, in recognition of the company's Tim Brady, dean of the College of Aviation at Daytona Beach, tests the capabilities of the URS unmanned aerial systems training device at the annual I/ITSEC conference in Orlando, Fla. Also pictured are Jim Williams, formerly of CATI Training Systems, left rear, and Dan Macchiarella, professor and chair of the Aeronautical Science department in Daytona Beach.

contribution of four of the eight systems. URS understands the significant role that universities play in developing the next generation of aviators, Saffold says.

"Working with Embry-Riddle is an opportunity for URS to significantly increase the value of the learning experience," he explains. "Applying advanced virtual training solutions in the area of unmanned systems is only part of the role we hope to play in the future. We are also exploring how to use our technology, talented engineering staff and experienced instructors to provide higher-fidelity training to Air Traffic Control, manned flight simulation and terrain visualization."

The future for UAS pilots and operators is bright, says Macchiarella. "I believe unmanned aircraft will carry cargo in the future, and may someday carry people."

Alumnus receives FAA Master Mechanic Award

Retired U.S. Air Force Capt. Samuel Poole Jr., 86, was recognized on Oct. 27, 2011, by the Federal Aviation Administration Safety Team for a lifetime of service to the aviation industry. A 1954 graduate of the Embry-Riddle Miami Campus, Poole chose to return



with students Kyle Longchamp and Breanna McGuire after receiving the FAA's lifetime award for master mechanics in October at the Emil Buehler Aviation Maintenance Science building on the Daytona Beach Campus.

to his alma mater in Daytona Beach to receive the "most prestigious" award the FAA can give to a maintenance mechanic, The Charles Taylor Master Mechanic Award.

"Riddle has been important in my life," Poole says. "When the FAA asked where I wanted to have the award presented, it only made sense to do it here." He adds, "The teachers I had in Miami, you could never find any better. They gave me the background and knowledge to be successful."

The award recognizes certificated aircraft mechanics who have worked for more than 50 years in the field of aviation maintenance.



Eco Eagle soars into aviation history

BY BOB ROSS AND SARA WITHROW

or a team of student engineers from Embry-Riddle, NASA's Green Flight Challenge was the ultimate life lesson in hard work, disappointment and reward. While the team was disqualified from competing for the \$1.35 million prize two days before the contest, held Sept. 25 through Oct. 3 in Santa Rosa, Calif., they garnered international accolades for their efforts and made history with their aircraft design.

"NASA conducted a search and confirmed that our plane is in fact the first gas/electric [direct drive] hybrid in history," says Richard "Pat" Anderson, professor of aerospace engineering and faculty adviser for the project. Additionally, Embry-Riddle's converted Stemme S10 motor glider, appropriately named "Eco Eagle," was the only student design in the contest.

SAFETY FIRST

Preparations for the Green Flight Challenge began more than two years ago after NASA issued a public challenge: Create an aircraft that can fly 200 passenger miles per gallon at 100 miles per hour. A total of 13 teams answered the call; however, by the date of the competition, only four remained: Embry-Riddle; aircraft distributor Phoenix Air; and aircraft manufacturers Pipistrel and e-Genius, which came in first and second respectively with fully electric versions.

Embry-Riddle was allowed to fly in the challenge but was ineligible for the prize money because of rules that required each airplane to be equipped with a ballistic recovery chute and include a passenger for each seat in the cockpit.

Embry-Riddle's strong safety culture ruled out carrying a passenger. "You don't risk two people on an experimental flight when only one is needed." Anderson explains.

And while the Eco Eagle team had planned to outfit the aircraft with a recovery chute in California, after learning of the disqualification, the installation became moot.

Waiving claim to the prize money was "a small price to pay," says Maj Mirmirani, dean of the College of Engineering at the Daytona Beach Campus. "For our students, being part of this historic event and competing in it was everything."

Project leader Lori Costello ('09, '11, DB) agrees. Costello oversaw a team of 200 students who designed and constructed the aircraft, and created her master's thesis around it. "I learned so much," she says. "I learned about structural analysis, aerodynamics, aircraft cooling, and critical thinking. But I also learned how to motivate people who aren't getting paid. That was one of the most difficult tasks."

In honor of her accomplishments, Costello was one of eight students selected to attend the annual Alumni Association trip to New York City and luncheon at the prestigious Wings Club in November.

MAKING HISTORY

All of the Eco Eagle flights were flown by Embry-Riddle test pilot Mikhael Ponso ('03, DB). It was on the Eco Eagle's 12th test flight (Sept. 7) that Ponso shut down the gas-powered engine and was able to successfully start the electric motor in flight—making history.

"I must have attempted to start the electric motor at least 20 times on two previous test flights and it wouldn't work [due to safety coding related to the electrical motor speed]," he says. "The next flight it started right away. I texted the team on the ground, 'It's alive. The electric motor is actually alive and running."

While the Green Flight Challenge is over, the Eco Eagle will continue to fly. Exhibition flights are tentatively planned for 2012 air shows, including Oshkosh.

Top Eco Eagle supporters include Aviation Education Foundation, David L. Robertson, drivetek ag, Flight Design, MT-Propeller, Randall P. Fiorenza ('86, '90, DB), Rotax Aircraft Engines, and Stemme.



Watch the Embry-Riddle Team in Action

View a two-part Discovery Channel production of the Green Flight Challenge, featuring the Embry-Riddle team.

PART 1: http://watch.discoverychannel.ca/#clip573634

PART 2: http://watch.discoverychannel.ca/#clip574341

Teaching with jet fire

Former professor's lesson leaves lasting impression on students

BY SARA WITHROW

mbry-Riddle's jet dragster is proof of the adage, "Everything old is new again." Before Embry-Riddle became a university in 1970, Professor Willard Bolton developed his own version of today's jet dragster-teaching students the intricacies of jet engines and igniting their dreams with thoughts of driving such a high-powered vehicle.

Max Henderson ('85, '87, '89, DB), who attended Embry-Riddle's Aviation Maintenance Technician program in the early 1970s, recalls one of Bolton's jet dragsters: a 1961 English Ford Anglia equipped with an auxiliary power unit turbine engine and hydraulic pump.

"The rear-end differential was driven by an aircraft hydraulic motor," Henderson says.



Bolton's 1961 English Ford Anglia jet car. Left: Alumni Kim Remmel, left, and Bob Runkle pose with Elaine Larsen of Larsen Motorsports at the 2011 EAA AirVenture in Oshkosh, Wis.

Now an instructor of

Aviation Maintenance Science at the Daytona Beach Campus, Henderson maintains that Bolton was a legend of sorts. A common story around what was Embry-Riddle Aeronautical Institute at the time (1970) was that Bolton had built a ram jet engine in Miami, and had strapped it atop a car and driven it down the Tamiami Trail (aka Alligator Alley), Henderson says.

Bob Runkle ('73, DB), one of Bolton's former students, recalls the story well. "He [Bolton] said he figured if he could build up enough pressure,

he could light it off at about 90 mph. Alligator Alley is out in the middle of nowhere, so he could get away with it. He said he got it up to about 110 mph."

Humorously, the next day, the local news announced that there were multiple reports of UFO sightings at exactly the same time Bolton had ignited the jet engine on his car, Runkle adds.

"They thought there were UFOs down in the Everglades," he laughs.

'THE JUNKER'

According to Runkle, Bolton used jet cars as an incentive for his students to proceed quickly through their

WHAT IT'S LIKE TO BE BEHIND THE WHEEL OF A JET DRAGSTFR

When I start staging [lining up in the starting beams], I am completely focused on the finish line and everything in between-nothing can break my concentration. I forget about everything going on around me, except how the car is reacting and what I need to do next. I roll into the staging beams, advance the engine to full throttle and begin to introduce fuel into the afterburner. Time seems to be in slow motion; but in reality, in less than a second, the lights

on the Christmas tree [staging lights] illuminate and it's time to go. I strike the hot streak in the afterburner, igniting all the fuel I have loaded into the pipe. It's an instantaneous surge of power and I am now out-accelerating the Space Shuttle. My body is withstanding approximately 4 g's and within the first second I have reached 60 mph. I can start to feel the dragster settling in and getting comfortable on the track, like a speedboat getting on plane. In about 3 seconds I am traveling

around 300 feet per second at the 1/8th mile [half-track]. The dragster continues to accelerate and the quarter mile is complete in just over 5 seconds-at speeds around 280 mph. After crossing the finish line and deploying the parachutes, my body withstands one more hit of around negative 6 g's. The force and acceleration my body experiences are almost indescribable and different each time, dependent on atmospheric conditions, track condition and engine performance. -Marisha Falk

required coursework. "If we finished our work early, he had this car sitting off to the side and he'd let us tinker on it. It was kind of an ongoing project. Everyone got a hand at working on it," he says.

The jet car he worked on was an early 1960s four-door Dodge Polaris equipped with a fuel control starter, battery, oil pressure gauges, revolutions-per-minute indicator, power lever throttle and a J-69 engine.

"It was pretty grotesque looking," Runkle says. "We called it 'the Junker.'"

Runkle and his former Embry-Riddle roommate, Kim Remmel ('73, DB), share a treasured memory of one particular day in 1972. "We actually got it running," Runkle says. "We lit that thing off and fire and smoke came out the back end. It was really, really loud. We were just reading lips at that point to communicate," he recalls. For safety's sake, there were a couple of students standing nearby armed with fire extinguishers.

The thrill of the accomplishment was short-lived due to the untimely arrival of a Florida State trooper.

"He pulled up and he couldn't believe his eyes," Runkle says. "We got the car to move a little bit and started to move it toward the road. But the trooper flung open his car door and started shaking his head back and forth saying, 'No,' and dragging his finger across his throat telling us to shut it down."

Runkle complied and says he doesn't believe the car ever made it to the pavement. "We had so much fun with it though, just that one day getting it running."

Runkle says he has fond memories of Bolton, now deceased. "He was a big, rough kind of guy, but he was an absolute gentleman." He also had tremendous contacts in the industry and would assist his students with job referrals, he says.

Runkle started his career at National Flight Services at the Toledo Express Airport. He then spent 33 years working for Owens Corning, retiring in 2009 as chief of fleet maintenance and safety.

Embry-Riddle names Marisha Falk next jet dragster driver

Embry-Riddle's jet dragster has a new driver—dual alumna Marisha Falk ('08, '10, DB).

Falk has worked with
Chris and Elaine Larsen of
Larsen Motorsports for the
past three years, learning
everything she could about
the jet dragster and assisting
the Embry-Riddle Racing Team
on the sidelines. This past fall,
her training accelerated when
the Larsens and Embry-Riddle
selected her to replace Elaine
in the driver's seat.

For Falk, driving the Embry-Riddle jet car is a longtime goal now achieved. She first met the Larsens and witnessed the jet dragster perform in 2008 at EAA AirVenture in Oshkosh, Wis.

From that point on, when she wasn't working as a senior flight instructor for Embry-Riddle or studying, Falk was working with the Larsens. Her efforts paid off Dec. 7, when she climbed into the jet dragster's



custom-made cockpit for her first test drive. Falk says the experience brought forth a wave of emotions.

"I was anxious to suit up and strap in, because I had waited for this moment for several years, but at the same time, I was flooded with nervousness," she says.

Falk, 25, recently attained a National Hot Rod Association competition license and is now one of an elite group of women licensed to drive turbine-powered race vehicles.

Larsen Motorsports has promoted Embry-Riddle at races across the country for the past eight years. The partnership expanded last summer, when the Larsens moved into Embry-Riddle's developing Aerospace Research and Technology Park in Daytona Beach (see related article on page 12), and signed a cooperative agreement to involve more of the university's students in its racing operation. For more information about Larsen Motorsports, visit www.elainelarsen.com.

MYSTERY
HISTORY CONTEST
What was EmbryRiddle's first
sports team?

Are you an Embry-Riddle history buff?

Then here's your chance to show us your stuff! Enter our Mystery History Contest for a chance to win a copy of *Embry-Riddle at War*, signed by author Stephen G. Craft.

TO WIN: Search the University Archives online for the correct answer. To access the archives, visit www.eraualumni.org and click "Archives." Send in the correct answer to the email link on the page. Your correct entry will be entered into a random drawing held after April 20.

Sherlyn (Thornton)
Halloran ('86, PC) of
Arizona is the winner of
the Fall 2011 Mystery
History Contest. Halloran
was one of 10 people
who correctly answered
the question, "What current
airline shares its roots with
Embry-Riddle?" There were
two qualifying answers:
American (Airways)
Airlines, or Riddle Airlines,
which operates today as
Airlift International.

Embry-Riddle's
University Archives department is dedicated to preserving the memories and artifacts belonging to the university's rich history. To explore Embry-Riddle's past, visit www.eraualumni.org and click "Archives."



GOLDEN TICKET

SEAN JODOIN ('97, DB) is helping make 'Virgin' world of commercial spaceflight possible

emember how excited Charlie was when Willy Wonka invited him into his chocolate factory? That's how Sean Jodoin ('97, DB) says he felt when Virgin Galactic asked him to interview for the position of supply chain manager for the world's first commercial spaceline. A glimpse of the company's "vehicles" literally stopped Jodoin in his tracks. He was stunned by the 140-foot wingspan and dual-fuselage design of WhiteKnightTwo, but absolutely transfixed by SpaceShipTwo, the six-passenger carbon composite spacecraft that launches from it.

After working for nearly a year in Virgin Galactic's Mojave Desert facility, seeing the

historic spaceflight system airborne or even walking by them in the hangar still makes Jodoin pause and reflect on his good fortune. "They're just so beautiful," he raves of Burt Rutan's designs. "Sometimes I can't believe I'm a part of this."

TAKING OFF

It all started with an online announcement from Embry-Riddle's EagleHire Network. "I really didn't think I had a chance at the job," Jodoin recalls, speculating that his Embry-Riddle credentials helped secure an initial telephone interview.

Today, Jodoin is part of an elite team of 43 professionals working to make suborbital flight service for commercial passengers a reality. By early 2012, more than 475 people from 46 countries had submitted deposits for a two-hour, \$200,000 flight complete with preparatory training, an outbound journey at three times the speed of sound and the opportunity for an in-cabin, zero-gravity frolic. The 524th booking is likely to garner some type of fanfare, as Virgin Galactic founder Sir Richard Branson reminds employees that only 523 people have been to space since Russian cosmonaut Yuri Gagarin became the first in 1961.

The company is also preparing to carry research payloads. An agreement regarding the first of three



"Embry-Riddle is well-respected in the industry.
With in-depth work in finance, operations and production, I wasn't pigeonholed. Plus, the school's emphasis on strategic thinking really fits with Virgin Galactic's way of doing business."

proposed flights for NASA was finalized last fall, just before Virgin Galactic dedicated its 120,000-foot hangar/terminal/mission control facility at Spaceport America in Las Cruces, N.M.

SINGLE-LINK SUPPLY CHAIN

Both of Virgin Galactic's missions—"space tourism" and contract research flights—require myriad supplies. That's where Jodoin comes in: to procure everything from flight suits for passengers and furniture for the celebration lounge, to ground support vehicles and specialized fuels for the company's air and space vehicles. Pilots will require simulators and cabin mockups for training, and project managers finishing Virgin Galactic's spaceport facilities need off-road vehicles to reach the remote site.

"We're still very much a startup," explains Jodoin, noting that the company's supply chain currently has just one link (him).

In an effort to lengthen that chain, he spearheaded an Industry Day last fall to brief a select



group of about 200 potential suppliers regarding the company's needs and objectives. "Innovation is one of our core values," he explains. "Many participants came to pitch us their products, but we need more from them. We're still in the conceptual stage ... working to combine the best from the space industry with the best from the airline industry. That requires a lot from suppliers."

Jodoin says that being part of the inner circle for such a groundbreaking initiative is both exhilarating and intimidating. "The credentials of the people we have on board are so impressive," he notes, recalling his initial nervousness at being interviewed by a Ph.D. cosmologist and later reporting directly to a former NASA Space Shuttle launch integration manager.

He says he especially values the sense of shared purpose: "Everyone appreciates the fact that we're making history. The 'halo effect' of spaceflight—where you realize how fragile the Earth is and consider where human-kind fits into it all—is very strong."

PREPARING TO LAUNCH

Jodoin's Master's in Business Administration Aviation from Embry-

Riddle stands tall among the small, tightknit cadre. "Embry-Riddle is well-respected in the industry. With in-depth work in finance, operations and production, I wasn't pigeonholed. Plus, the school's emphasis on strategic thinking really fits with Virgin Galactic's way of doing business," he explains.

Broad procurement experience—including a year in Iraq and Afghanistan for defense contractor KBR, a year in Kuwait with the Air Force and his most recent post at Lockheed Martin—supplements Jodoin's academic pedigree. His decade-plus service in the Air Force Reserve and experience as a C-130 aircrew member wins him personal credibility with the pilots.

"What we do is very segmented, and people bring multiple graduate degrees to their positions; but they still want to hear what others think," he relates. "There's such great camaraderie here; it's a really positive environment."

In January, Jodoin was preparing to move into his new office near Spaceport America and support the first powered flight of SpaceShipTwo. The inaugural commercial launch, set to carry Branson and his two children, is the ultimate goal; it's not expected before 2013.

"We're not date-driven," Jodoin says. "We'll go when it will be safe."

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HOME ON THE RANGE

Eagle trio ensures space launch success, longevity by SARA WITHROW

ol. Janet Grondin ('89, PC) has a daunting task before her-modernize and sustain the more than 300 systems that make up the nation's Eastern and Western Launch and Test Ranges. Add to this a limited budget, equipment that dates back to NASA's Apollo Program (1963-72), and the need for little to no systems downtime, and the challenges of the mission multiply.

Named commander of the U.S. Air Force's Spacelift Range Division last July, Grondin oversees the acquisition and sustainment efforts for the Launch and Test Range System (LTRS) operated in Florida at Patrick Air Force Base and Cape Canaveral Air Force Station, and at Vandenberg Air Force Base in California. The ground-based radar, optical and telemetry systems that constitute LTRS ensure that rockets car-

"It's kind of like airfield operations, except every flight is very expensive and every flight is nationally critical," Grondin says. LTRS provides tracking support and serves an important safety net function.

"We don't launch the rocket, but our users have the ability to destroy it," Grondin explains. "Our mission is very important.... The range has to work so assets America needs on orbit for national security purposes get to their destination. You don't want to have to blow them up because range instrumentation can't tell where the rocket is."

TEAM EFFORT

Grondin is tasked with bringing the range up to today's



alumni in key positions on her team: Brian Laird ('94, PC), chief engineer for the U.S. Department of Defense, LTRS Sustainment, and Eric Hoffman ('93, PC), senior associate at Booz Allen Hamilton and program manager for the Systems Engineering and Integration (SE&I) contract for LTRS.

"It was ironic," Hoffman says. "You've got three Embry-Riddle engineering graduates who graduated within five years of each other in senior positions one in a blue suit [USAF]; one a senior government civilian employee; and me, a senior person working for a consulting company - and we're all working on the same project."

Hoffman is involved in the long-term planning and implementation of improvement and sustainment projects for the ranges. To that end, he and his company have established a structure of processes and tools to help make decisions about repairs, upgrades and priority expenses.

"Collaboratively with the Air Force, our company is helping define the archi-

tecture of the future range system," Hoffman says.



"It's kind of like airfield operations, except every flight is very expensive and every flight is nationally critical."

courses that required them to build and test aircraft (Hoffman and Grondin) and electronic designs (Laird) based on their knowledge gained at Embry-Riddle.

"We had to research structural reliability, policies and regulations, in order to calculate the weight of our designs. We had to make decisions about what we wanted our airplane to look like and what we wanted it to do, and then we had to justify those decisions," Grondin says. "There are a lot of days I'm really thankful for my background at Embry-Riddle. The industry-related and practical instruction I received in quite a few of my classes put me on course for a practical career."

While all three say they enjoy their jobs, work does not take the place of family. They are thankful for the support they receive from their respective spouses and children. Grondin and her husband, Pat (USAF retired), have two sons; Hoffman and his wife, Ruby, have two sons; and Laird and his wife, Vicky, have four children.

RANGE AUTHORITY

While Hoffman and Grondin are relatively new to the range, Laird has been dealing with the antiquated equipment and systems since 1999. Headquartered in Colorado Springs, Colo., Laird assists in managing the annual sustainment budget for LTRS; he is considered the foremost authority for resolution of engineering, programmatic, process and budgeting issues in this area.

"It's our organization that reviews the failure data and finds solutions, as well as the wish list from headquarters for future needs," Laird says.

According to Grondin, it's not an easy job. "Brian's group goes through heroics to find people to work on range equipment," she says. "Because of the age of the range assets, it can be difficult to find parts and people with the knowledge to fix systems when they break."

One huge challenge is the communication system. "The communication is based on old technology," Laird says. "We've got connections on the ranges that operate at 9,600 baud [bits per second]. The fastest dial-up connection was 56,000 baud. We predict we won't be able to support it after 2018."

EMBRY-RIDDLE RAPPORT

All ingrained in the "Embry-Riddle way" of learning and applying knowledge, in some cases by the same instructors, a thread of commonality links these project leaders and enhances their working relationships.

"The three of us approach things very similarly," Grondin says. "We're cut from the same mold."

The trio recalls a particularly eye-opening experience they shared at Embry-Riddle: senior-level engineering

THE 'SKY'S THE LIMIT' FOR GRONDIN

What started out as a planned four-year stint in the military evolved into a career for Col. Janet Grondin ('89, PC).

"I was amazed that every time I turned a corner, there was more opportunity," she says.

An Iowa native, she arrived at Embry-Riddle a "horrible math student." Grondin recalls the dubious look she received from the faculty member grading her math entrance exam, and then the question: "Are you sure you want to major in engineering?"

"I figured I better work very hard," Grondin says. And, she did. She graduated from Embry-Riddle Magna Cum Laude in 1989 and went on to earn three graduatelevel degrees. Grondin holds master's degrees in aeronautical engineering, military operational art and science, and strategic studies.

She expected to simply do her four-year obligation in the Air Force and then move on to greener pastures; but when she realized she liked what she was doing, she stayed.

"When I was a lieutenant, I remember looking at the majors and saying, 'I could do that," she says. "I didn't ever expect to make colonel. I just liked what I was doing and was rewarded. ... It's just a result of hard work."

Grondin advises young women interested in careers in engineering and in the Air Force to get a strong education and take advantage of the opportunities available to them.

"I've never had anyone say, 'You're a woman, you can't do it;" she says. "[In the Air Force] you're not going to get treated special [because you're a woman], but you're not going to be hindered either. The sky's the limit with what you can do."

EMPHASIS: Innovation

EMBRY-RIDDLE RESEARCH AND DEVELOPMENT IGNITE KNOWLEDGE DISCOVERY

BY SARA WITHROW

Embry-Riddle President and CEO John Johnson cuts the ribbon at the grand opening of the remodeled FAA NextGen Florida Test Bed in November. Pictured, left to right, are: U.S. Rep. Blake Farenthold (R-Texas). Vice Chairman of the **Embry-Riddle Board** of Trustees Mori Hosseini, U.S. Rep. Sandy Adams (R-Fla.), Johnson, U.S. Rep. John Mica (R-Fla.) and former FAA Administrator Randy Babbitt.



Editor's Note—This section highlights advancements in innovation in which Embry-Riddle students, faculty and alumni are involved. We encourage you to join the EaglesNEST and visit the alumni (www.eraualumni.org) and university (www.erau.edu) websites regularly to stay abreast of ongoing and future research and development news.

Growing its research and development (R&D) efforts and support is a primary objective for Embry-Riddle, and for good reason.

"Knowledge discovery is inherently part of what we are as an academic institution," says John Johnson, university president and CEO. "We want to be the place the aerospace industry turns to, to solve real-world problems."

Graduate and undergraduate students are working alongside faculty and researchers, and with industry and government partners to develop new biofuels, green

vehicles and aircraft, advanced propulsion systems, renewable energy sources and unmanned autonomous systems, to name a few.

"The modern view of research is more innovative, creative, handson and industry-oriented," says Christina Frederick-Recascino, senior executive vice president for academics and research at Embry-Riddle. "It's different from the traditional ivory tower and formulas on a blackboard-

and it's something unique to Embry-Riddle."

More than \$15 million was invested at Embry-Riddle in R&D in 2011–12, with private industry and government contributing approximately 70 percent of this sum. In contrast to the \$7.1 million allocated five years ago to R&D, this represents sizable growth, Johnson says. Additionally, the university now boasts two doctoral degree programs, Aviation Science and Engineering Physics, and plans to add more in the future. It also leads the Federal Aviation Administration's NextGen Test Bed in Florida (page 16) and the Center for General Aviation Research consortium.

The university's Quality Enhancement Plan (QEP), a component of Embry-Riddle's reaffirmation process with the Southern Association of Colleges and Schools, also includes a research focus. A five-year project associated with the QEP launch in January, "Ignite, Create, Research, Change," will transform knowledge discovery at the university, Johnson says. The plan calls for incorporating research into all levels of curricula and will provide support for faculty, student and staff research initiatives.

Another step toward growing the university's investment in R&D is the Embry-Riddle Aerospace Research and Technology Park, slated for 90 acres just southeast of the Daytona Beach Campus.

The research and technology park has been on the radar since at least 2005. According to Johnson, approximately \$2 million has already been invested. Gov. Rick Scott included \$4.5 million in his proposed 2012-13 budget to assist with its development.

"When completely built out, the park will accommodate more than 600,000 square feet of research, laboratory and office space, and bring 2,000 jobs to the region with salaries averaging \$45,000," Frederick-Recascino says.

She envisions students working as interns; faculty providing subject matter expertise and becoming research partners; and students transitioning to become research park employees.

innovation inspiration

Teaching and research are equal in terms of a university. You can't stop learning. There are too many things you should want to find out to make the next generation stronger, healthier and happier. - JOHN JOHNSON, EMBRY-RIDDLE PRESIDENT AND CEO

OUT OF THIS WORLD NASA ASTRONAUT'S TIME ABOARD INTERNATIONAL SPACE STATION YIELDS SCIENCE AND PERSPECTIVE

BY LAURIE DAVIES

rbiting Earth at a clip of 17,500 miles per hour (that's once every 90 minutes) gives a person perspective. For Col. Ronald J. Garan Jr. ('94, WW), it came in the form of realizing how fragile Earth and its inhabitants are.

"Earth looks so beautiful, so peaceful from outer space," says the NASA astronaut and retired U.S. Air Force colonel, who recently returned from a six-month mission on the International Space Station (ISS). "As astronauts we can look down at Earth and see we're all in this together."

FINDING NEW FRONTIERS

Floating free from gravity's constraints, astronauts aboard the ISS conduct "zero-G" scientific experiments in many fields, including biology, physics and environmental health. "When you take gravity out of the equation, you get different results," Garan says, noting that about 35 hours of ISS crew time per week are devoted to scientific experiments.

For example, bone loss is one area of continuing study. "When you put the human body in a zero-G environment, it rapidly realizes it doesn't need a skeleton anymore," Garan says. Researchers use NASA astronauts as test subjects to help pinpoint the triggers of bone loss and treatment

options, such as vitamins, exercise and medicines. Astronauts typically lose bone density at the rate of 1 to 2 percent per month while in space.

Environmental quality is another research frontier Garan found exciting. "Combustion behaves differently in a weightless environment. Reactions are simplified, making answers easier to find," Garan says. "Through the study of the efficient burning and control of emission and pollutants, we may improve current knowledge about clean energy, clean water and clean methods to dispose of hazardous waste on Earth."



in space: 178 days

Space miles

logged: 71,075,867

Earth orbits:

2,842

Number of space walks:

4

Space walk hours:

27 hours. 3 minutes

LIFE IN SPACE

While in space, Garan says, he missed nature—the sunrise over the water, flowers, trees and a breeze in your face. The ISS lacks other creature comforts as well, including hot showers and a comfortable bed. On the ISS, astronauts "shower" with wet wipes and rinseless shampoo. They sleep in tethered sleeping bags. In Garan's case, his was free-floating inside his crew quarters.

For a man who flew F-16 combat missions in Operations Desert Shield and Desert Storm, life at zero G was

every bit as exciting. Now that he's firmly grounded back at his Houston home, he says he misses watching lightning storms, and auroras from a vantage point above the atmosphere, and his outer space perspective of Earth. "I would look down and say, 'There's the Great Lakes,' or 'There's Corsica.' You really get to know the planet as your backyard," he says.





READ MORE ABOUT COL. GARAN'S MISSION

To read more about Col. Ron Garan's experience on the International Space Station, visit his blog at www.fragileoasis. org/bloggernauts/Astro Ron/posts.

What would surprise people most about the ISS? "I don't think people realize how enormous it is. It's a big place—bigger than a football field. I think it's the most interconnected, complex structure ever built," Garan says, adding that its habitable area is the size of a five-bedroom home.

Metaphorically, the ISS is even bigger. "We have 15 nations working together on this orbital research facility. Many of these countries have not always been the greatest of friends," Garan says. "It's a shining example of how we can work together to solve the challenges that face the inhabitants of our beautiful planet."

Another Embry-Riddle alumnus, Daniel Burbank ('90, WW), is currently serving a six-month tour on the ISS. Embry-Riddle boasts a total of six astronauts among its alumni.

innovation inspiration

If we worked on the assumption that what is accepted as true really is true, then there would be little hope for advance. - ORVILLE WRIGHT









ENGINEERING FOR LIFE

STUDENTS BRING WATER PURIFICATION SYSTEM TO HAITI

BY SARA WITHROW

mbry-Riddle students and faculty not only engineer advancements in technology that impact the aerospace industry; they are also involved in projects that fulfill basic human needs.

Case in point: A group of students and faculty at Embry-Riddle's Daytona Beach Campus recently designed, built and installed a solar-powered water purification system for an orphanage assisting 600 children in rural Haiti.

"I call it high-tech, high-touch," says Embry-Riddle President and CEO John Johnson, who helped sponsor the project with university funds. "It benefited the students as well as the orphans, and it showed that engineering is not just about making things, but about improving people's lives."

Other financial partners included Douglas Murphy of Murphy International, headquartered in Georgetown, Conn., and the Benedictine Grange in Redding, Conn., a church where Murphy is a member.

GREEN DESIGN

The Embry-Riddle Clean Energy Club, along with assistant professors Marc Compere and Yan Tang, started work on the project in January 2011. By Aug. 20, five students, Compere and Tang had joined Murphy in Chambellan, Haiti, to erect a new water purification and storage system for the Anne Clémande Julien School for Orphans.

"The students took the purification system from the drawing boards to a fully functional prototype," says Compere, who teaches mechanical engineering.

Dubbing the endeavor Project Haiti, Clean Energy Club founder Yung Wong and a handful of students designed a fivestage filtration system utilizing ultraviolet light and kinetic degradation fluxion to remove sediment, heavy metals, chlorine and microorganisms from the orphans' water supply.

The system was modeled after a water purifier built in 2010 by Embry-Riddle's American Society of Mechanical Engineers Student Chapter. That project provided a battery-powered system capable of producing clean water at a rate of 1 gallon per minute, and was installed at a private school in Chambrun, Haiti, serving 350 children.

Recognizing the larger need at the orphanage, Wong and his team constructed their system to process 4 gallons of water a minute and to operate on a solar-powered pump, with batteries for backup only. The project included the installation of a centralized water spigot and a drinking fountain rail with five heads.

"We wanted them to have the most efficient system possible," Wong says.

The project was laborsome, and required a good measure of human ingenuity. "We really created the whole system without knowing anything about the site," says Johnathon Camp, a member of the Clean Energy Club who traveled to Haiti. "They sent us plans scribbled on a napkin and we could barely even read it."

The team also had to dig by shovel a 6-foot deep hole for the metal pole that would support the solar panels.

Another challenge was mounting the four 35-pound solar panels. "It took about 20 of us, with the older orphans helping out," Camp recalls. "We had to crawl onto the roof of the pickup truck, while balancing the panels, hoist them up and fasten them."

GOOD FORTUNE

The excursion was marked by mishaps followed by good fortune. For example, the team purchased additional pipes and fittings at a Port-au-Prince hardware store that didn't match up to those they had brought from the United States. "Their sizes were different," Camp says. "In Haiti, everything went by the outside diameter. We purchased the fittings thinking the measurement was based on the inner diameter, like it is in the States."

In the end, they had the exact number of fittings that were needed and avoided a 24-hour round-trip drive back to Portau-Prince for replacement parts. "We put extra glue on some pieces," Wong adds.

innovation inspiration

Photos by (top) Stephen Rayleigh, (bottom) Matthew Lyon

The team was also surprised to learn that the orphanage had two 600-gallon storage tanks, in lieu of the one tank they had prepared for, and that the orphanage planned to supply water to the community.

Again, fate worked in their favor. "We got lucky because we over-engineered our project," Camp says. "We had planned for a maximum well depth of 200 feet." Fortunately, the well only had to be dug to a depth of 110 feet. "That saved us a lot of energy, so we were able to pump double the volume [1,200 gallons per day]," he says.

According to Murphy, the project was riddled with similar scenarios. "My mom chooses to call these 'God circumstances,'" he says.

The extra volume and storage tank have allowed the orphanage to assist the people of Chambellan and generate funds for the ongoing maintenance of the water purification system. Two hours a day, the spigot and faucets are open to the general population and a minimal fee is charged for the water collected.

POWERFUL TAKEAWAYS

Wong and Camp agree the experience was rewarding well beyond the opportunity to build their résumés. Both students are slated to complete undergraduate degrees in mechanical engineering with an emphasis in clean energy in May.

"It was definitely eye-opening," Wong says. "They had been dealing with cholera outbreaks due to the water problems caused by the 2010 earthquake. ... We were able to improve the lives of hundreds of people."

Camp says he is equally pleased with the clean energy aspects of the project. "We are purifying water with essentially a zero-carbon footprint," he says. "[And] it's better quality than the tap water out of my house."

The Clean Energy Club is not resting on its past success; members are creating a solar- and battery-powered backpack water purifier that may someday provide safe drinking water for disaster relief efforts and military troops.

"The battery system and the solar system are custom made," Camp says. "You can't even buy what we're making."

Editor's Note—In addition to Wong, Camp, Compere and Tang, Embry-Riddle students Jared Coleman, Alena Thompson and Matt Selkirk also traveled to Haiti to install the water purification system. The Clean Energy Club as a whole is to be commended for this wonderful work of ingenuity for good. To view video of Project Haiti visit: http://youtu.be/hB6L2NBeThk

E-PRIZE ENCOURAGES INNOVATION

Borrowing on the time-honored tradition of spurring innovation through competition, Embry-Riddle's Prescott Campus inaugurated the Eagle Prize, aka "E-Prize," in fall 2011.

The program is funding six student projects, which will be entered into various national contests this spring and summerat a total campus investment of \$63,000.

"We were inspired by the success of last year's LAR-E [Luna All-terrain Regolith Excavator] project, and wanted to provide other student teams with the resources they need to explore and achieve new heights," says Frank Ayers, executive vice president and chief academic officer for the Prescott Campus. LAR-E, a lunar mining robot, won the first-ever Judges Innovation Design Award and placed fourth in mining at NASA's annual Lunabotics contest in May 2011.

CONTEST TRADITION

The idea for the E-Prize was born from looking at the history of aviation and the role contests have played in its development, Ayers says. From Charles Lindbergh's 1927 transatlantic flight, motivated by the \$25,000 Orteig Prize, to the \$10 million Ansari X-Prize, awarded to SpaceShipOne and its developers in 2004, competition has led to invention.

E-Prize winners were selected by the Prescott Campus Council of Deans based on the merit of their projects and awarded approximately \$10,000 each in support. While funded by the university this year, Ayers is seeking sponsorships and donations to assist in the future.





HELP FELLOW EAGLES INNOVATE

To support the E-Prize program, contact steven.bobinsky@erau.edu.

The goal is to involve all colleges and degree programs at the Prescott Campus in the E-Prize program, says Richard Bloom, associate vice president for academics.

"It's a collaborative way of educating," Bloom says. "It's one thing to read a book or do a canned experiment, but to help create something that hasn't been created before is pretty neat."

E-PRIZE TEAMS AND PROJECTS

- The Lunabotics Club is entering an improved version of LAR-E in NASA's third annual Lunabotics competition
- The Aerial Robotics Team is designing a quad-copter for the Collegiate Aerial Robotics Competition this spring.
- The American Institute of Aeronautics and Astronautics (AIAA) Prescott Student Chapter is designing and building an unmanned, electric-powered, radio-controlled aircraft for the AIAA Design/Build/Fly contest in April.
- The Rocketry Club is developing bi-propellant and liquid engines, and

- a rocket that can climb to an altitude of 25,000 feet for the Intercollegiate Rocket Engineering Competition in June.
- Team AWESOME (Autonomous Winged Educational Surveillance Operational Mission Experiment) is creating an unmanned aerial system (UAS) with surveillance capabilities for the Small UAS competition in June.
- The UAV Helicopter Club is developing a helicopter drone with surveillance capabilities for the **AUVSI Student Unmanned Air** Systems Competition this summer.



NEXTGEN: REVOLUTIONIZING AIRSPACE MANAGEMENT

BY SARA WITHROW

mbry-Riddle is leading the development of new air traffic concepts and technologies, and two of its alumni are at the forefront.

As manager of the Federal Aviation Administration (FAA) Florida NextGen Test Bed in Daytona Beach, the university is the primary liaison for the FAA, industry and government agencies working to improve the safety, efficiency and capacity of the nation's air traffic system. Retired Air Force Maj. Wade Lester ('01, WW) oversees operations at the test bed as Embry-Riddle's NextGen program manager; and Jon Standley ('09, DB) is a project manager for the FAA's Technology, Development and Prototyping Division.

"As the prime contractor, I build teams comprised of academia and industry to accomplish the NextGen research and development," Lester explains. "I love what I do because I truly believe we are helping to make air travel safer and better for all of us."

PARTNERS IN SAFETY

The seeds of today's Florida NextGen Test Bed sprouted in 2006. Responding to a desire by the aviation industry to begin solving problems related to an increasingly overcrowded and unmanageable airspace,



Embry-Riddle and Lockheed Martin created the Integrated Airport Initiative (IAI). Several industry partners joined in the effort and the Volusia County government and Daytona Beach International Airport donated use of a facility.

"They were tired of talking about NextGen," says Lester of the industry partners. "They wanted to roll up their sleeves and do something about it."

In 2008, the FAA got involved and began funding test bed activities. Reaffirming its commitment this past year, the FAA doubled the size of the Florida Test Bed with a 10,000-square-foot

addition. The expanded facility officially opened on Nov. 7, 2011.

EDUCATION COMES FIRST

Lester, who earned a Master's in Technical Management from Embry-Riddle, says he values the work being done at the industry and government levels but keeps education a top priority. "I never forget why we are here; our students are the reason. When starting a new project, I work hard to ensure that our students, faculty and staff have a role to play."

Standley can attest to this. His job with the FAA evolved from his work as an Embry-Riddle student at the Next Generation Advanced Research (NEAR) Lab, which preceded the IAI.

Starting his Embry-Riddle education in Prescott, Standley transferred to the Daytona Beach Campus after a year and a half to pursue a degree in air traffic management.

Once there, he distinguished himself in the NEAR Lab. Working with research associate John Pesce ('96, '03, DB), Standley developed an adapter that allows students and researchers to view Automatic Dependent Surveillance-Broadcast (ADS-B) information as a 3-D graphical adaptation via a virtual control tower simulator. The Embry-Riddle fleet has been equipped with ADS-B, a foundational technology for NextGen, since 2003.

"We're still using it today," Lester says. In 2009, Standley, then a senior, demonstrated his work to visiting FAA executives and asked for a job. Two months after completing his bachelor's degree, the FAA called and he accepted a position in Washington, D.C.

"This place [Embry-Riddle] creates opportunities," Standley says.

A pilot since age 17, the now 24-yearold maintains that his position with the FAA combines his talents and passion for "bringing order to chaos [air traffic]."

"My job is to challenge the industry to come up with solutions to problems that exist in our airspace system today ... and to utilize every cent to its greatest potential," he says.

On Nov. 17, Standley inaugurated the newly remodeled Florida Test Bed with a presentation of Network Enabled Operations in its Spiral II demonstration. At the event, industry partners and

the FAA showcased NextGen technologies to more than 50 of their peers.

"Everyone agrees that a lab like this is necessary," Lester says. "We're working together to help shape the future of aviation."

innovation inspiration Education is the most powerful weapon which you can use to change the world.

- NELSON MANDELA

Breaking Barriers

PRESCOTT LIGO GROUP MAKES WAVES IN SPACE RESEARCH

ichele Zanolin and Andri Gretarsson, professors of physics at Embry-Riddle's Prescott Campus, are expanding the boundaries of space exploration through advanced gravitational wave research. With assistance from students and funding from the National Science Foundation, they are studying data from Laser Interferometer Gravitational-Wave Observatories (LIGO and VIRGO) and working to improve these systems to enhance understanding of the universe.



Zanolin and Alexander "Lex" Corpuz, an undergraduate student majoring in astrophysics at Embry-Riddle's Prescott Campus, recently celebrated a breakthrough in the study of gravitational waves (GW). They successfully modified an existing algorithm to improve identification and analysis of GW developed by supernovae.





"Researchers at Caltech were trying to develop this algorithm as well," Zanolin says. "We beat them to it."

The algorithm consists of roughly 40 pages of software code that allow researchers to isolate LIGO data particular to supernovae explosions from the noise of other space events.

"It's able to discard everything not physically meaningful [to GW developed by supernovae], and make more crisp and visible the parts we want to see," Zanolin says.

First predicted by Albert Einstein more than 100 years ago, GW are ripples of spacetime (where space is 3-D and time is a fourth dimension) that propagate and eventually arrive at Earth. These waves or vibrations result from actions occurring in space and can be used to identify properties of black holes, spacetime and supernovae, Zanolin says.

"It's a new field of astronomy," he adds. "Think of space as a symphony. Astronomy [the study of light in space] has allowed for the observation of this symphony; now, with gravitational waves, we can hear the symphony."

HANDS-ON APPROACH

The Physics Department at Embry-Riddle's Prescott Campus is presently involved in two National Science Foundation-funded projects. The first involves the assessment of data collected by LIGO instruments to study GW developed by supernovae. Corpuz and fellow astrophysics student Kevin Lowe are assisting Zanolin with this project by analyzing LIGO data accessible via a network of 15,000 computers maintained by MIT, Caltech and others.

The second project involves the testing of various optical coatings to improve the performance of mirrors utilized in LIGO instrumentation. Gretarsson and Zanolin both supervise undergraduate student Courtney Linn in this work.

According to Physics Department Chair Darrel Smith, the involvement of students in this groundbreaking research aligns perfectly with Embry-Riddle's hands-on instructional style.

"Direct interaction with front-line research projects such as this is of great importance to students and helps propel them along the path to a lifelong career in science," he says.

UAV PROJECT TO SAVE ENDANGERED SPECIES

Embry-Riddle is partnering with the University of San Francisco at Quito (USFQ) in Ecuador to create a fleet of unmanned aerial vehicles (UAV) to help preserve marine wildlife living in and around the Galapagos Islands. Project Piquero will be a tool for the Galapagos Islands National Park to enforce fishing restrictions and prevent illegal poaching within its 133,000 square kilometers of protected area.

Jorge Pantoja ('11, DB) of Ecuador developed the initial plan while studying at USFQ. After transferring to Embry-Riddle in fall 2010, he immediately introduced the idea to Charles Reinholtz, professor and chairman of the Mechanical and Civil



Engineering Department, and got buy-in from Christina Frederick-Recascino, senior executive vice president for academics and research. In May 2011, Embry-Riddle, USFQ and Galapagos National Park entered into a formal agreement authorizing further development of the project.

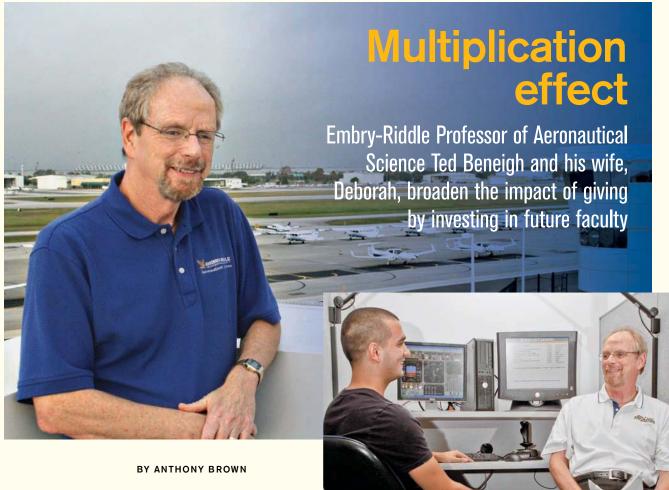
"We completed all the parts of the puzzle," Pantoja says. "With Embry-Riddle being the

world leader in aviation and USFQ having all the logistics, it was the perfect combination."

The agreement calls for the delivery of two UAVs equipped with advanced surveillance capabilities to Galapagos National Park by 2013. Once tested, Embry-Riddle and USFQ will provide approximately 20 UAVs to the park. Piquero may also be used in the future to document the habits of rare birds and animals, aiding scientists

who study these species, Pantoja adds.

The Piquero UAV is now in its third iteration. Pantoja created the first and second versions at USFQ under the tutelage of Professor Pedro Meneses ('04, DB). The third iteration is a collaborative effort of Embry-Riddle Professor Snorri Gudmundsson ('91, '94, DB), Meneses, Pantoja and Mark Mizrachi ('11, DB).



ed Beneigh says he believes that Henry David Thoreau had it right when he advised, "Go confidently in the direction of your dreams."

A professor at Embry-Riddle's Daytona Beach Campus, Beneigh hopes to allow others to do the same with a planned gift that supports faculty in the Aeronautical Science Department. "What I think I can do the most to help students is keep my fellow faculty at the cutting edge of their professions," Beneigh says.

The decision to support faculty instead of students directly may seem counterintuitive at first glance, but for Beneigh, it's simple math:

"Let's say I wanted to donate \$15,000 for a scholarship and two students get that. The benefit of that scholarship would be two students," Beneigh says. "But if I gave that \$15,000 to the entire department and they send 10 faculty to different programs, and each of those faculty has 30 students in the classroom, now I have affected 300 students, rather than two."

EASING THE BURDEN

Beneigh's rationale comes from his years as a faculty member at Embry-Riddle. In his 35-year career, he has amassed impressive experience that includes stints as a flight instructor, flight standards director and now as a professor of aeronautical science. He recently helped launch a new bachelor's degree program in Unmanned Aircraft Systems (UAS) Science (see related story page 4).

His work with the new UAS degree program had a lot to do with Beneigh's decision to support faculty with his gift. "The only way I was able to help develop the degree program was to go out and learn it," he says. "And somebody—in this case, the university—had to pay for it."

Beneigh says he believes his gift will ease the university's financial burden a little and allow faculty members the means to enhance their education, and then pass that on to students.

"Thousands of students could be helped, depending on the magnitude of what faculty

Above left: Ted Beneigh stands on the balcony at the new Emil Buehler Aviation Maintenance Building at the Embry-Riddle Daytona Beach flightline. Inset: Ted Beneigh, right, evaluates Doris Jaupi's performance in a senior-level flight management exercise for a course in aeronautical science.

are doing," Beneigh says. "That investment's impact is going to multiply many times over."

PASS IT ON

Beneigh and his wife, Deborah, started considering the gift after receiving the university's planned giving newsletter, which directed them online to Embry-Riddle's Will Planner (www.ergiftplan.org), a free service that helps users gather the information they need to begin their estate planning. After filling out the planner, Beneigh took the information to his personal financial adviser and started the process that set the gift in motion.

"My wife and I don't have any children, so I thought, 'Why not let what we've earned, live on past us in whatever way or shape or form we could do it?" Beneigh says. "My wife agreed with me, and we established our gift plan for Embry-Riddle."

Beneigh hopes what lives on from his gift turns out to be much larger than his original investment. "Helping the university is not only about helping those people who are developing their careers; it's also about improving a society that relies heavily on aviation," he says.

"We have one of the best aviation systems in the world, and the reason we do is exactly because of Embry-Riddle - because we train the people who make our aviation system great. Helping Embry-Riddle does a whole lot more than just help one person get a job doing what they like to do. It helps improve society as a whole."

Southwest Airlines Scholarship to **Encourage Female Engineers**

Oct. 12, 2011, was a homecoming of sorts for Southwest Airlines officials who visited their alma mater's Daytona Beach Campus to present a \$50,000 check endowing a new scholarship for undergraduate engineering students.

"It's really exciting for us alumni to come back-the improvements to the campus over the years have been amazing," said Brian Hirshman ('90, DB), senior vice president of technical operations at Southwest.

Accompanying Hirshman were two other Southwest Airlines officials: Jim Sokol ('89, DB), vice president of maintenance operations, and Amy Oonk ('93, DB), director of engineering.

According to Hirshman, recruiting engineers is a constant challenge for Southwest Airlines, whose 700 aircraft perform more than 4,000 flights per day. He noted that only four of the 70 engineers at Southwest are women.

"Southwest is in need of engineers, particularly female engineers," he said. "Given that the engineering programs at Embry-Riddle are second to none, this scholarship makes perfect sense."

The scholarship may already be paying dividends. Gloria King, an aerospace engineering senior and the first SOUTHWEST PART TO THE Embry-Riddle Aeronautical University s 50,000 Fifty Thousand----00/100 Southwest M&E MENO Endowed Scholarship 1:99999999:1 999999999911 10000

> Embry-Riddle alumni Brian Hirshman, left, Amy Oonk and Jim Sokol return to their alma mater to support female King (below, left).

recipient of the scholarship, is considering working for Southwest. "I've been thinking about it," she said with a smile. "I like to fix things."

Whatever she chooses to do after graduation, King says she appreciates the financial support the scholarship provides. "Right now, I'm working three jobs to put myself through school, so I'm very grateful for this award," she said.

LOCKHEED MARTIN EMPOWERS STUDENTS

Lockheed Martin has awarded scholarships totaling \$20,000 to the EmpowerEd Scholars Program for Embry-Riddle students attending the Daytona Beach and Prescott campuses.

Open to accomplished high school seniors who are interested in pursuing a degree at Embry-Riddle, the EmpowerEd scholarship program is committed to the advancement of underrepresented students in aviation, aerospace, scientific, business, communications and related fields.

"Supporting the EmpowerEd Scholars Program is important to Lockheed Martin. It allows students who would not normally be able to pursue technical degrees for financial reasons to follow their dreams," says Jim Derr, director of Lockheed Martin IS&GS-Civil's Flight Services.

Lockheed Martin Flight Services manages the Federal Aviation Administration's Automated Flight Service Station contract, which assists general aviation pilots. "The EmpowerEd Scholars program is a good fit for us because Lockheed Martin is committed to education in science, technology, engineering and math (STEM); and Embry-Riddle is a leader in STEM and education

in the science, practice and business of the world of aeronautics and aerospace. We know this firsthand-185 of our most recent Flight Services employees are Embry-Riddle graduates," Derr adds.

"This is a phenomenal opportunity to build on the longtime partnership Embry-Riddle has enjoyed with Lockheed Martin," says Bernadine Douglas, associate vice president of Institutional Advancement. "Lockheed Martin's support of this scholarship program will help Embry-Riddle advance its mission to prepare students for leadership roles in the 21st century workplace."



TEACHER, TRAINER, PILOT

CHRISTOPHER WALTON ('82, PC; '84, WW) inspires future aviators

hristopher Walton ('82, PC; '84, WW) describes teaching as one of the most fun and rewarding parts of his life. As a flight instructor at Embry-Riddle's Prescott Campus in the 1980s, he taught college students the ins and outs of flying. Now a first officer with Delta Air Lines, he shares his knowledge and experience with teenagers exploring aviation as an occupation.

A resident of Chandler, Ariz., Walton put his love of teaching on the shelf for a while. As a young pilot, he was busy building his career, first at Northwest Airlines and then at Delta. About 10 years ago, a chance encounter with a bulletin soliciting volunteers for an Aviation Explorers Post plunged him back into teaching—this time as an instructor for youth ages 14 to 20.

Designed by the Learning for Life organization, Explorer Posts around the country offer young people real-world experiences in various career fields. Explorers Post 352 in Mesa, Ariz., offers a hands-on curriculum that exposes youth to basic aviation maintenance and flying—and includes flight lessons on a privately owned Piper Cherokee 180D. The Explorers pay an annual fee to participate and receive a discounted rate for flight hours.

Many students come in with little confidence or think they need a certain foundation in advanced mathematics or science before they take control of the yoke, says Walton, who is the chief flight instructor and oversees ground school for the post. While having a good education helps, Walton, who learned to fly at Embry-Riddle in 1978, says he shows them that becoming a pilot is an attainable goal.



"None of them think they can do it ... and then it's just amazing to see them handling this thing in the sky. It just puts a big smile on my face when I see they can do it by themselves."

"None of them think they can do it ... and then it's just amazing to see them handling this thing in the sky," Walton says. "It just puts a big smile on my face when I see they can do it by themselves."

DONATION SPARKS EXPANSION

Explorers Post 352 was established in the late 1990s by Harold Bliss, current post adviser. Originally, the post had an aviation maintenance focus; the students worked on an airplane regularly and took some lessons. It wasn't until four years ago that they were able to fly solo, thanks to a group of local pilots from the Falcon Flying Club who purchased a 1969 Piper Cherokee for the Explorers to learn on, and paid for the necessary insurance. Anzio Landing Restaurant of Mesa now funds most of the insurance costs for the plane.

With a designated aircraft and insurance, Walton watched Explorers Post 352 take off.

"I became really busy because students wanted to fly with me all the time," Walton says.

Strictly a volunteer program, Post 352 is supported by 10 adult volunteers and several local businesses. Walton says he is always looking for more Embry-Riddle alumni to join the venture. The Explorers meet about four times monthly at Falcon Field Airport in Mesa.

While there are scheduled meetings, it's always up to the students to decide how far they want to go. Walton says he doesn't "nag." It's their choice to call him and make time to fly.

SUCCESS STORIES

During his time at the post, about 25 students have completed solo flights and two have attained a private pilot's license. Two young men also went on to attend Embry-Riddle, including Michael Calkins ('10, PC), who is now an alumnus serving in the U.S. Air Force.

One of his most dedicated Explorer students has been Eric Horton, Walton says. Horton, 20, was the first Explorer from Post 352 to earn a pilot's license. He also started attending ground school a little earlier than most Explorers—at age 13.

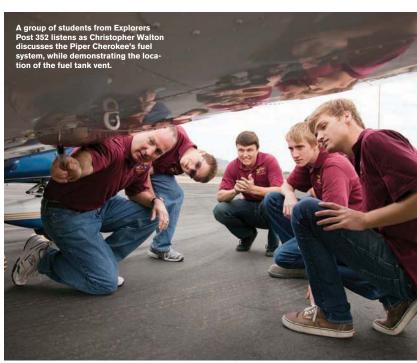
"Eric came week after week. He made it to all the ground schools, all the maintenance sessions," Walton says.

Horton and his family weren't aware of an aviation program for teenagers until they met an Explorer sponsor. "When we heard about it, we were like, 'Oh that's awesome.' We jumped on it," says Horton, who is studying commercial aviation at the University of North Dakota's satellite campus in Phoenix, Ariz.

As Horton got closer to completing his private pilot's license a couple of years ago and needed more training, Walton would often meet with him at a restaurant. Books and maps would be spread out on the table as they went over the finer details before his check ride. Once, they studied for four hours at a local Chick-fil-A.

"He [Walton] could go to a flight school and get paid for what he does, but he just loves working with the kids in this program," Horton says with an air of sincere gratitude for his instructor.

Walton's gift of time and knowledge is laying the foundation for future aviators. Horton is now mentoring younger Explorers at Post 352—and he says he dreams of flying commercially someday, just like Walton.



MESSAGE FROM THE ASSISTANT VICE PRESIDENT

This issue of Lift addresses how Embry-Riddle is growing its emphasis in applied research, while our alumni are taking the lead in developing new technologies and solutions to problems in the industry. A quote by Eden Phillpotts offers a whimsical lesson for us all. The English author and poet once wrote:

"The universe is full of magical things, patiently waiting for our wits to grow sharper."

I tend to agree; we should all focus a bit more on the mysterious things that make up our world—and ponder how we can make a difference for our society through new discoveries.

Our Alumni Advisory Council members and Alumni

Chapter Leaders are off to a positive start this year after their retreat and day of meetings the week of Homecoming in November. We are looking forward to some exciting growth and development in our Alumni Chapters - so remember to sign up to join your local chapter.

The Women's Ambassador Program, which launched this past fall, is an exciting new opportunity for Embry-Riddle and the Student Alumni Association. See page 25 for more details.

In April, we will conduct a *Lift* readership survey. A random sample of our subscribers will be contacted electronically and asked to provide anonymous feedback regarding what they like and don't like, and what they would like to see more of in our alumni magazine. Thank you in advance for your input!

I look forward to seeing you all Oct. 5-6 at OctoberWest and Oct. 11-14 at Wings and Waves Homecoming Weekend. Remember to nominate your fellow alumni for an award by visiting the eaglesNEST: www.eraualumni.org/awards.

As always, please stay in touch and remember you are "Forever an Eagle!"

Sincerely,



MICHÉLE BERG Assistant Vice President, Alumni Relations



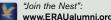




twitter.com/ERAU_Alumni



Search Embry-Riddle Aeronautical University Official Alumni Group



"Join the Nest": www.ERAUalumni.org

OctoberWest wows alumni

OctoberWest reached new levels of intensity during a three-day celebration held Oct. 6-8 at the Prescott Campus.



Alumni rally at the annual OctoberWest parade.





Graduates reminisce with student veterans coordinator Fred Cone, left front,

An extra-special homecomina

Alumni from across the country returned for an exciting series of homecoming events at the Daytona Beach Campus on Nov. 3-5.



Assistant Vice President of Alumni Relations Michéle Berg and University Archivist Kevin Montgomery, right, present Rick Harrington ('76, DB) with a 1986 photo of the Board of Trustees on which he served



Ernie the Eagle jokes with Alumni Advisory Council member Oscar Garcia ('02, DB), right, and Carlos Ruiz Irizarry ('95, DB), Puerto Rico Chapter leader



Kell Rvan, a member of the Industry Advisory Board for the College of Business, right, with alumni at the Alumni Dinner/Dance

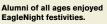


Alumni celebrate EagleNight in the newly opened Sam Goldman Fleet Maintenance Hangar.



The Embry-Riddle jet dragster, driven by Elaine Larsen, and aerobatic airplane, piloted by Matt Chapman, entertained hundreds of alumni and students.







Golfers prepare for the shotgun start at the annual tournament.

"Homecoming is always a special event for our alumni, but this year our reunion was an even more momentous occasion as we celebrated reaching and surpassing the 100,000 alumni mark," says Michéle Berg, assistant vice president for Alumni Relations.





Student Alumni Association members interact with graduates following the inaugural Alumni Symposium.





From left: Hawaii Alumni Group Leader and Professor Linda Weiland ('83, '93, '04, WW), Reynard Rigues ('04, PC), Alumni Advisory Council member Wendy Stanley ('09, WW) and San Diego Chapter Leader and member of the Alumni Advisory Council Jesse Clark ('92, PC) mix and mingle at EagleNight.

LAUTH AND NOE FAMILIES 'ALL IN CONTROL'

BY KELLY CUCULIANSKY PRATT

ristin (Lauth) Noe ('05, DB) and her brother grew up job shadowing their father and grandfather and listening to their stories about life as air traffic controllers. Now adults with successful careers at Miami's Air Route Traffic Control Center, the siblings have their own experiences to share about guiding aircraft through the skies.

Together, the Lauth and Noe families boast eight air traffic controllers, so there's no doubt that aviation was and is a frequent topic of conversation. "Everybody talks about aviation. That just happened to be the dinner topic all the time, so my brother and I would always ask questions," says Kristin, 27.

The questions of their youth took on new meaning when Kristin and her brother, Ryan Lauth, enrolled almost simultaneously in air traffic control tracks at Embry-Riddle and Miami-Dade College, respectively.

Their father, Martin "Marty" Lauth IV ('06, WW), who earned a master's degree from Embry-Riddle while working as an air traffic controller at Orlando Sanford International Airport, quickly found himself acting as a tutor of sorts, by phone and at a "mini lab" from his home in Lake Mary, Fla. Now retired from his career with the Federal Aviation Administration (FAA) and working as an assistant professor at Embry-Riddle's Daytona Beach Campus, he finds his children are a great resource to help him stay current with the profession.

"They keep me up to date with the latest procedures, equipment and technologies," Marty says.

Kristin's marriage in 2010 to Kevin Noe, a former Embry-Riddle student she met during FAA training in Oklahoma, added two more airspace management professionals to the family. Kevin and his brother, Mike, are also air traffic controllers.

Now, when Marty visits the Miami Center, he is peppered with greetings from his family as well as former students calling



out, "Hey, Professor Lauth!" His children, too, are visited by their aunt, Holly Mings, and grandfather, Martin Lauth III, who both retired from air traffic control. Moreover, they received training from "Grandpa" at the Miami Center when he worked there as an instructor for Raytheon, after retiring from the FAA.

Sitting in his Embry-Riddle office with family photos flashing on his computer screensaver, Marty is full of pride when he talks about the tradition his father unwittingly started in 1958, when he joined the FAA as a controller.

"My dad, he's kind of like me. He's very proud of the family following in his footsteps. He loved his career ... and I enjoyed my career, and I think our kids saw that."

Alumnus Barry Schiff honored as 'Living Legend of Aviation'

Barry Schiff (HonDoc '89, PC; '94, WW) is as modest as he is decorated. Renowned as an aviator, safety advocate, world recordholder, instructor, award-winning journalist and author, the capstone to his accomplishments thus far took place Jan. 20 in Beverly Hills, Calif., when he was recognized at the Living Legends of Aviation Awards.

"You get inducted and then you start wondering, do I really belong here?" Schiff said after the awards ceremony. "The term 'living legend' is not something one can apply to oneself very easily. In fact, I have to gulp now when I say it."

As a member of the "Living Legends," Schiff joins 77 other aviation entrepreneurs, innovators, industry leaders, astronauts and pilots acknowledged as celebrities for their contributions to the field of aviation.

Schiff may humbly question his new title, but a glance at his achievements affirms the appointment. A pilot and captain with more than 28,000 flight hours and a 34-year career with TWA, Schiff holds five world speed records

and is a member of the Aviation Hall of Fame of New Jersey (his native state) and

Barry Schiff (HonDoc '89, PC; '94, WW) and his wife, Dorie, at the **Living Legends** of Aviation ceremony.

the National Flight Instructors Hall of Fame. His honors include the 2003 Aero-Club de France General Aviation Journalist of the Year. the National Aeronautic Association Elder Statesman of Aviation Award, the Alfred and Constance Wolf Aviation Fund Award, a U.S. Congressional Commendation, the Fédération Aéronautique Internationale's Louis

Blériot Medal, and the Federal Aero Club of Switzerland's Gold Proficiency Award.

Despite his skills as a pilot, he attributes much of his professional success to his ability to communicate the written word.

unattainable." "If it wasn't for my writing, I'd probably be just another pilot," he says. Schiff has authored 12 aviation books and is a regular contributor to the Aircraft Owners and Pilots Association AOPA Pilot magazine.

He began his writing career at the age of 21 with the founding of Aero Progress Inc. Schiff's business plan proved a huge success, with the Times-Mirror Corporation purchasing his product line in 1963, but his vigor to start the business prompted an early

> departure from his studies at the University of California, Los Angeles. His decision to quit school later haunted him; and four years before retiring from

TWA, he enrolled as a transfer student in what was then Embry-Riddle's distance learning program. He completed his Bachelor's in Aeronautical Science in 1994.

Ironically, Schiff says, by then he had already been awarded an honorary doctorate degree from Embry-Riddle in conjunction with

> a 1989 commencement address at the Prescott Campus.

"I remember thinking to myself, this is really ridiculous, I haven't even completed a degree and here I am addressing all of these graduates that have a higher education than me," he says.

It was this epiphany and the urging of his four adult children that led him back to the classroom.

Schiff's oldest son, Brian ('93, WW), also completed his degree through Embry-Riddle's distance learning program and is a pilot for American Airlines.

Although he has reached another pinnacle in his profession, Schiff maintains there are always more mountains to climb. His current goal is to beat the record set by Eric "Winkle" Brown, a World War II British military pilot, for having flown the greatest number of different types of aircraft: 487. As of January, Schiff had piloted 325 different aircraft since he began flying in 1952 at the age of 14.

"I enjoy having targets, even if they are unattainable," he says. "It's the journey that makes it interesting."

ALUMNI LEADERS GATHER FOR RETREAT

he Alumni Advisory Council (AAC) and Chapter Leaders Retreat brought 26 alumni together Nov. 3-5 to strategize during one of the most special times of the year at Embry-Riddlehomecoming.

The retreat intermingled business with homecoming activities. An evening reception Nov. 3 kicked off the event and was followed by a full day of meeting and team building, and the dinner dance Nov. 4.

During the AAC meeting, outgoing Chairman Tim Perry ('86, PC) thanked the group for work accomplished by its respective committees during his two-year tenure and encouraged them to continue to engage and rekindle relationships with alumni. Andrew Broom ('97, '00, DB), who serves as vice president of communications for the Aircraft Owners and Pilots Association and has been a council member since 2009, is the new chairman. Broom is joined by incoming Vice Chair Rick Larsen, ('78, '79, DB), former vice president of marketing and communications for the Experimental Aviation Association.

"The Alumni Advisory Council is a phenomenal team who are tasked with helping the Alumni Association engage, cultivate and serve the Embry-Riddle alumni," Broom said. "All of us are proud of our alma mater and

"I enjoy having

targets, even

if they are

want to share our passion with as many of the 100,000 alumni as possible. We are working on exciting initiatives that bring alumni together and ensure that they always remember they are Forever an Eagle."







CALLING ALL ALUMNAE!

Women's Initiative kicks off at Embry-Riddle

Embry-Riddle is calling on its more than 11.000 alumnae to

help increase the number of female students at its campuses and to create additional opportunities for women in the aviation and aerospace industries.

"We are asking our alumnae to serve as guest speakers and mentors, and to provide feedback and ideas for engaging students," says Michéle Berg, assistant vice president of Alumni Relations, "We want them to be a part of growing Embry-Riddle's female enrollment."

One of the first alumnae to join in the effort is Tweet Coleman ('95, WW). A senior representative for the Federal Aviation Administration, inspirational speaker, author and former commercial pilot, Coleman served as the keynote speaker at the Dec. 7, 2011, "Girls' Night Out" event hosted at the Daytona Beach Campus.

"As a woman in a nontraditional role, you're going to have some mountains to climb," she told the students at the event. "But the real character of a person is what you do when that defeat comes. ... We have to be able to make course corrections when they're needed and always keep evolving."

Current female students are partnering with alumnae to make a difference for their peers, as well. The Women's Ambassador Program (WAP), operated by the Student Alumni Association, is working with the Daytona Beach and Prescott campuses to create a team of "big sisters" for incoming students. These ambassadors will also represent the university at events, around the country.

Shaesta Waiz ('10, DB), a graduate assistant in the Daytona Beach Alumni Relations office, is serving as WAP's lead coordinator for student involvement. The first in her family to graduate with a college degree, Waiz says she is excited to be a part of the program.

"This is a way for me to positively impact the futures of young women. I want to show them that they can succeed, regardless of their circumstances," she says.

WAP is just one component of the fall launch of the Embry-Riddle Women's Initiative, which is spearheaded by Christina Frederick-Recascino, senior executive vice president for academics and research, and supported by Maurie Johnson, wife of university President and CEO John Johnson.

Embry-Riddle women student ambassadors from the Daytona Beach Campus (at left) and Prescott Campus represent the university at public events and serve as 'big sisters' for new female students accepted to attend Embry-Riddle.

Since 2007, the Johnsons have worked to designate additional scholarship funds for women and to encourage a female-friendly culture on campus. In 2010-11, they established the John and Maurie Johnson Endowed Scholarship for young women, with assistance from several donors.

"We hope to continue to grow this fund, so that more women can access this financial assistance," Maurie says.

Their investment appears to be paying off. Female enrollment at Daytona Beach and Prescott now averages slightly more than 17 percent compared with 14 percent in 2007. The goal: increase the percentage of female students at Embry-Riddle's residential campuses to 25 percent by fall 2017.

To get involved in WAP, visit www.erau alumni.org/wap; or contact michele.berg@ erau.edu. For WAP news updates, visit www.eraualumni.org/blog/wap.







NBAA Convergence The Alumni Association chose the famous Madame Tussauds wax museum for its gathering on Oct. 11, held in conjunction with the National Business Aviation Association's annual convention in Las Vegas.

During the event, Alumni Association Assistant Vice President Michéle Berg presented Don Pointer ('90, DB), director of marketing services and development at Dassault Falcon, with the Alumni Eagle of Excellence Award. Pointer chairs Embry-Riddle's College of Engineering Industry Advisory Board and was instrumental in establishing the Dassault Design Institute, a collaborative effort with Embry-Riddle to design a new generation of green aircraft.

/// CLASS NOTES //



To share your Class Notes with *Lift* and your fellow alumni, join eaglesNEST, the online community created exclusively for graduates of Embry-Riddle. Visit **www.eraualumni.org** and "Join the NEST" today; or email your announcements to **eralumni@erau.edu**.

CAREER NEWS

1960s

Harold Kosola ('63, MC) and **Bruno Alves** ('04, DB) met by coincidence in Albany, Ga., in June 2011. Alves is a pilot for Nelson Piquet of Brazil.

1970s

U.S. Army Col. Kirk Knight ('74, DB) participated as U.S. parachuting team judge and event chief judge at the 5th Military World Games in Brazil July 16–24.

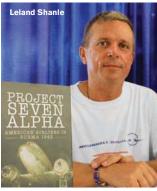
Cynthia Lindsay ('79, DB) was named a Cambridge Who's Who Professional of the Year in Software Engineering. Lindsay is a technical team leader/software engineering supervisor for the Defense Contracts Management Agency (DCMA), Department of Defense. Her previous experience as an Air Force air traffic controller and communication officer and in airport operations led to her current position as a federal acquisition manager.

1980s

Evan (Chuck) Davis ('81, DB) is a commercial glider and certified flight instructor-glider. He is a first officer with Delta Air Lines.

James Bradshaw ('82, DB) owns and operates Storehouse Treasures LLC, a company serving small businesses with QuickBooks Accounting skills. He moved to Palm Coast, Fla., from Sanford, Fla., in Oct. 2010 with his wife, Anne.

Joseph J. Lewis ('83, DB) published his autobiography, From Glory to Glory: The Joe Lewis Story, through Xulon Press. In his book, he tells of going from the glory of the





world to the glory of God. The book includes humor, despair, joy and spiritual events. Lewis is now working with churches to promote several evangelistic ministries.

Randy Cohen ('85, '01, DB) accepted an offer to work for the Missile Defense Agency in June 2010 and retired from The Boeing Company after 24 years of service. During his time at Boeing, Cohen had the privilege of working on exciting development programs, such as the U.S. Navy T45 Coshawk, the Air Force C-17 Globe Master, DC-X and X-33 reusable rockets, and the International Space Station. He also worked as a manager for the Project Engineering Office on the Ground Based Midcourse Defense program.

Jeffrey Miller ('86, WW) considers himself a Daytona Beach Campus graduate, having spent all but one semester there. He is an airport operations manager at BWI Marshall, on















temporary assignment in the Airport Security Division as liaison for the installation of the new Integrated Airport Security System. He is also pursuing his master's degree in air transportation management. Miller has four children: two sons from his first marriage and two daughters with his wife, Lesley.

George Hrichak ('86, WW) was re-elected Nov. 8, 2011, to a second four-year term on the York County Board of Supervisors in Virginia. He is presently completing his fourth year serving the citizens in District 4 as their representative, and is board chairman this year.

Michael Landguth ('89, WW; '01, DB) has been appointed the new airport director for the Raleigh-Durham International Airport. He previously served as president and CEO of the Chattanooga Airport Authority for seven years. While there, he secured more than \$70 million in grant funding for

infrastructure development, three new airlines, eight new nonstop destinations and launched a solar farm project that helped reduce the airport's energy consumption.

1990s

Patrick J. Doyle ('90, WW) would like to thank Embry-Riddle for the educational foundation he received that allowed his team to be recognized as one of four finalists in *Aviation Week*'s 54th Annual Laureate Awards for 2012. Doyle, a senior manager in hangar maintenance (avionics and powerplants), leads the group recognized for the Maintenance Repair and Overhaul category.

CAMPUS LEGEND

MC Miami Campus
DB Daytona Beach, Fla.
PC Prescott, Ariz.
WW Worldwide Campus

Joni (Lampert) Schultz

('93, DB) proudly wore her Embry-Riddle and Women in Aviation T-shirt while earning her helicopter add-on rating Aug. 3, 2011. She received training in a Schweizer helicopter at Tomlinson Aviation, a facility in Ormond Beach, Fla., owned by Neal Tomlinson ('84, DB).

Leland "Chip" Shanle Jr. ('93, WW) has authored four books, including Vengeance at Midway and Guadalcanal, a historical fiction novel set in World War II that was published in February 2011. The retired U.S. Navy lieutenant commander aviator continues to fly with American Airlines and is an active test pilot. He is also the president and CEO of Broken Wing LLC, an aviation, military and flight safety consulting firm.

Douglas Weinmaster ('94.

PC) was recently selected by his peers to be included in "The Best Lawyers in America, 2012" list, which features fewer than 800 attorneys. Weinmaster, a trial lawyer at the Perey Law Group, represents clients in personal injury and medical malpractice claims. This past spring, he was co-counsel in a trial that resulted in a \$46.4 million verdict against a major restaurant corporation. It is the highest sum of money ever awarded in Washington for a personal injury case.

J. Keith Sowell ('99, DB) has been hired as an aircraft quality inspector for Boeing on the new 747-8 aircraft customer delivery preparation program in San Antonio, Texas. He has also been asked to join the Aerospace Academy as an adjunct instructor. He recently became a member of the AIAA History Technical Committee and was appointed as the webmaster and chair of the Web subcommittee.

Lisa Anderson Spencer ('99, DB; '03, WW) became the Programme Officer for

Aviation Risk Management (Department of Safety and Security) for the United Nations, New York City, in May 2011. She is also a member of the Embry-Riddle Alumni Advisory Council and taught as a professor for Embry-Riddle Worldwide.

2000s

Garrett L. Pendleton ('01, DB) joined the law firm of Band Weintraub in August 2011 to build and lead a full-service civil litigation department in Sarasota, Fla. Licensed in Florida and Georgia, Pendleton, who is a trial attorney, worked on high-stakes cases while at Phelps Dunbar LLP in Tampa and Alston + Bird LLP in













Atlanta. Given his military and aviation industry background, Pendleton maintains a special interest in aviation. He was appointed by the president of the Florida Bar to the Bar's Standing Aviation Law Committee, is vice-chair of the American Bar Association Tort Trial and Insurance Practice Section's Aviation and Space Law Committee, and serves as program chairman for this year's NTSB Bar Association's Blue Angels Air & Transportation Law Conference.

Peter Biondi ('01, DB) was honored with a volunteer appreciation award by Hartsfield-Jackson Atlanta International Airport for

providing more than 600 hours of service. His duties include assisting non-English speaking passengers, conducting airport tours and escorting passengers with special needs. Biondi, an aviation professor and consultant, is fluent in Spanish, Portuguese, French and Italian.

Jarvis Hall ('02, DB) and Thomas Duffy ('03, DB), co-founders of GroundFlights Inc., took home the "Judges Choice Award" and a \$35.000 prize package at the 2011 Business Innovation and Growth Summit sponsored by Orlando Inc. (the Orlando Regional Chamber of Commerce). The company was recognized for its award-winning video and business model.

Edmund D. Otubuah ('03, DB) was appointed director of commercial aviation products at Marks Systems Inc., a software company specializing in large-scale aviation data warehousing and analytics, in September 2011. In this role, he is responsible for the development of masFlight, an aviation data platform. He spent the previous eight years at New York-based JetBlue Airways, where he served in a variety of roles including operations analysis, strategic planning, marketing and airport operations.

Victor Wainwright Jr.

('03, DB) is the band leader, pianist and vocalist of Victor Wainwright and the Wildroots, a Memphis soul and roots rock 'n' roll band. In town for the Daytona Beach Blues Festival (Oct. 7-9, 2011), Wainwright visited and performed at the Daytona Beach Campus and on Embry-Riddle's radio station, 99.1 WIKD Eagles FM. Fellow member of the Wildroots and also a pilot for Northwest Airlines, guitarist Greg Gumpel ('05, DB), participated in the festival as well. He recently released his fourth album, Lit Up!

Jesse Romo ('04, DB) received his commercial certificate Dec. 18, 2011. He has been a private pilot for 18 years.

Eugene Bolanowski ('05, '07, DB) is working as deputy director of the East Regional Texas Airport. "Eagles always soar," he says, "and Texas has some big sky.'

Jamar Johnson ('06, DB) recently joined Raytheon in McKinney, Texas, where he is working as a reliability engineer.

Daniel Herr ('06, DB) joined the U.S. Air Force Reserve and will be flying with the 328th Airlift Squadron out of the Niagara Falls Air Reserve Station. He graduated from pilot training July 29, 2011, and is undergoing more training in Little Rock, Ark., to fly the C-130 Hercules. When his training is complete, Herr will return to his post as an air traffic controller at the Buffalo Air Traffic Control Tower.

Aaron Prokopchuk ('08, PC) recently moved to Fort Worth, Texas, and started working as a system engineer on the JSF program with Lockheed Martin Aeronautics.

Mersie Melke ('10, WW) received a letter of recognition from the National Society of Black Engineers in August 2011 in appreciation of his volunteer service for judging a scholarship program administered by the society. He also had a research paper published Oct. 18, 2011, in the Society of Automotive Engineers - SAE International. To view the paper, titled "An Assessment of FAA's Rule on Reduction of Fuel Tank Flammability," visit SAE's website: papers.sae.org/ 2011-01-2520.

Scott Hammond ('11, WW), a chief aviation ordnanceman, retired from the U.S. Navy on Jan. 31, 2012, after more than

21 years of service. He is a resident of Fallon, Nev.

FAMILY NEWS

1990s

Kier "KC" Hutto ('94, DB) and his wife, Erin, welcomed their first son, Miles Hutto, on Aug. 18, 2011. KC is a JetBlue Airways pilot based at Orlando International Airport, and lives in Orlando, Fla.

Eric Heinzer ('95, DB) and Kimberly Kosola Heinzer ('95, DB) welcomed their third child, Julian Joseph, on May 21, 2010. The family resides in Phoenix, Ariz., where Eric works for Honeywell as a technical manager and Kim is vice president for Kosola and Associates.

2000s

Brvan Hermann ('00. DB) and his wife, Lisa, welcomed their son, Elijah Isaac Hermann, into the world on Nov. 16, 2011. They reside in Houston, Texas.

Judson McCarty ('04. DB) and Jody (Hoffstetter) McCarty ('06, DB) welcomed their second child, Liam Judson, on July 6, 2011. Judson is an aerospace engineer for the Air Force Research Laboratory and Jody is an orbit analyst for the Space Development and Test Directorate. They live in Albuquerque, N.M.

Matthew Rombold ('07, DB) and Kelly (Shinko) Rombold ('07, DB) welcomed their first child, Madeline Elizabeth Rombold, on Oct. 15, 2011. Matthew and Kelly, both Gulfstream Aerospace employees, were married in 2009 and reside in Savannah, Ga.

MARRIAGES/ **ENGAGEMENTS**

1990s

Lisa (Burns) Cavett ('98, DB) married Keith Woods on April 2, 2011, in Atlanta, Ga.

Dorothee C. Miller (President's Advisory Council)

DEC. 1. 1933 - DEC. 20. 2011

Dorothee Miller shared her love for aviation and made a difference in the lives of Embry-Riddle students, faculty and staff for nearly 18 years.

A former part-time fashion and television model, Miller received associate degrees in business management and liberal arts. She was married for 21 years to Capt. William "Willie" Miller, a TWA pilot who delivered cargo and personnel to hospital ships for the U.S. military during World War II. After the war, he went on to establish successful aircraft brokerage companies all over the world, including Aero International Associates, which Miller managed. She and Embry-Riddle jointly honored her husband's memory in January 2000, with the dedication of the Capt. Willie Miller Instructional Center at the Daytona Beach Campus.

"Her naming gift to recognize her husband gave her much pride because it served the needs of a growing student body," says Dan Montplaisir, vice president of Embry-Riddle Institutional Advancement.

A member of the Jack R. Hunt lifetime giving society, Miller joined the President's Advisory Council in 2006. Known for her wonderful sense of humor and hospitality, the Quoque, N.Y., resident sponsored several annual Alumni Association student trips to The Wings Club luncheon in New York City, and would often join the students at these events.

She supported students because she believed they had chosen the most exciting and rewarding career a person could select, Montplaisir says. "Her warm and welcoming spirit made everyone immediately feel part of the aviation family. She will be greatly missed."

Dudley A. Whitman ('42, MC)

MARCH 20, 1920 - JULY 15, 2011

From surfing the waves off Florida and Hawaii to his days as a courageous World War II pilot and an underwater filmmaker and boat builder, Dudley Whitman ('42, MC) lived a life of adventure. Known as a man of many trades, he once shared an interesting secret: "I've never had time to learn anything-I've had to fake it," he said in a 2005 interview for Lift magazine. "The only thing you can't fake is aviation."

Whitman's foundation in aviation began at Embry-Riddle in 1940, whereupon completing his commercial certificate, flight instructor rating and advanced training, he started instructing Army Air Corps cadets at Embry-Riddle's Dorr Field in Arcadia, Fla. Whitman himself joined the Corps in 1943. One of the highlights of his career was flying during World War II to deliver fuel over the infamous "Hump" across the Himalayas into China, a treacherous 530-mile mountain passage. Later, the Bal Harbour, Fla., resident traded the sky for water, making underwater films for Paramount and Warner Bros.







A member of the T. Higbee Embry gift society, he was a "true American original," says Dan Montplaisir, vice president of Institutional Advancement.

"Embry-Riddle was honored to help advance his love of aviation by providing his flight training in Miami and setting him upon a lifelong love affair with aviation and adventure."

Reid Tyre ('54, MC)

SEPT. 6, 1930 - OCT. 19, 2011

Just three months before his passing, Reid Tyre ('54, MC) had Embry-Riddle's homecoming on his mind. As he became increasingly ill with cancer, he called the Alumni Association to let his friends know he wasn't sure he would make it to the annual event. His premonition proved correct.

Known as a fixture in the lives of Embry-Riddle alumni, staff, faculty and students, Tyre, who served as the 2008 Homecoming Parade Grand Marshal in Daytona Beach, always jumped at the chance of reuniting with fellow Eagles.

A resident of Jesup, Ga., the U.S. Army veteran owned and operated Reid Tyre Commercial Ferry Flying. He regularly regaled acquaintances, including university President and CEO John Johnson, with tales about the "old days" of flying and the Miami Campus.

"He was quite a character," Johnson says. "He was very passionate about Embry-Riddle. We will all miss him."

- 1. Dorothee Miller with Dan Montplaisir, vice president for Institutional Advancement. right, and David McKay ('77, DB), president of The Wings Club.
- 2. Dudley Whitman, top, is pictured with other flight instructors in 1941 at Embry-Riddle Flight School's Advanced **CPTP** Aerobatic class.
- 3. Reid Tyre stands near one of the planes on which he was trained at the Miami Campus.

1940s

Robert Hubsch Sr. ('42, MC) Aug. 23, 2011

John F. Potter ('42, MC) July 29, 2011

1950s

Boyce E. Wellmaker Sr. ('57, MC) Dec. 7, 2011

Timothy R. Gehr ('70, DB) July 31, 2011

John R. Delafosse ('72, DB) Dec. 13, 2011

David B. Welser ('74, DB) Oct. 8, 2010

Richard (Dick) Ulm ('75, '83, '84, WW) Dec. 25, 2011

Richard L. Cutshall ('76, DB) Dec. 25, 2011

Phillip R. Fisher ('76, WW) March 23, 2011

1980s

Jeffrey A. Martin ('80, DB) June 26, 2011

Robert J. Everitt ('84, DB) June 7, 2011

Calvis T. Singleton Sr. ('84, DB) May 25, 2011

Maj. Craig K. Dennis ('87, WW) Jan. 5, 2011

Pamela J. Rockett ('88. DB) Dec. 12, 2011

Gary V. Baciuska ('88, '97, WW) July 16, 2011

William H. Weaver ('89, WW) June 3, 2011

Lt. Col. Michael S. Lakin ('90, DB) Dec. 23, 2011

David E. Malonev ('91, DB) Sept. 14, 2011

Col. Patrick L. Cloutier ('92, WW) May 22, 2011

Todd Alan Malecot ('92, WW) June 22, 2011

Lavelle Tinker Jr. ('92, WW) June 3, 2011

Craig A. Sands ('98, WW) March 30, 2011

Robert F. Selje ('99, WW) June 11, 2011

Edward W. Counts Jr. ('00, WW) April 14, 2011

Julian J. Savigne ('01, WW) March 28, 2011

Ross MacNinch ('02, DB) June 17, 2011

Paolo Andre Catanzariti ('02, DB) Aug. 27, 2011

Gianmaria Manganelli ('05, PC) June 18, 2011

Sherman R. Hadwen ('06, WW) Feb. 18, 2011

Brian D. Murphy ('08, WW) Dec. 11, 2010

1st Lt. Thomas J. Heitmann ('08, DB) Sept. 19, 2011

Jeremy Custer ('10, DB) June 26, 2011

Gary Gonzalez ('11, WW) July 23, 2011

Gerald W. Bowker (Non Degree) June 18, 2011

Father Kenan Morris (former Catholic university chaplain at the Daytona Beach Campus) Nov. 30, 2011



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