



# 2025 ANNUAL REPORT



ADVANCING THE SAFETY OF ALL WHO FLY.



BCAAS is a cross-disciplinary, university-wide center that works across all three Embry-Riddle campuses and with each of the University's 11 colleges.

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**ROBERT L. SUMWALT**  
Executive Director

## EXECUTIVE DIRECTOR'S MESSAGE

**WE ARE PLEASED** to report another impactful year of growth and accomplishments at the Boeing Center for Aviation and Aerospace Safety. However, before listing some of our accomplishments, I note that 2025 brought stark reminders that the quest for safety never sleeps—it's a continuous journey, and it's a journey we intend to be part of.

On the evening of January 29, 2025, PSA Airlines flight 5342 and a U.S. Army helicopter collided over the Potomac River. The crash, which occurred just two miles south of the U.S. Capitol, claimed 67 lives. The NTSB's investigation is ongoing and should wrap up soon, but early on, the agency noted that there were an overabundance of close calls in the vicinity of Washington's Ronald Reagan National Airport. It is incumbent upon us as an industry, and even more on us at the Boeing Center for Aviation and Aerospace Safety, to understand why the warning signs were missed. One of our focus areas for 2026 is closely examining how data science, artificial intelligence, and machine learning can help uncover warning flags before they result in an accident. Our commitment is to learn

from this and other tragedies so we can help prevent future sad occurrences.

A few days prior to the midair collision, we started the year by hosting our Second Annual Safety Research Symposium, which featured 11 student posters and 18 student and faculty research roundtable presentations. With more than 160 registered attendees from Embry-Riddle's three campuses, each presentation session was jam-packed.

In March, we celebrated the Center's recognition as an Aviation Week Laureate at the 67th Aviation Week Laureate Awards dinner in Washington, D.C. In April, we co-hosted the Air Charter Safety Foundation's 2025 Safety Symposium.

Over the summer, our faculty affiliates and staff members spoke about their academic work at conferences and industry events around the world, including in Brussels and Singapore. In August, with our Professional Programs colleagues, we announced two professional education partnerships with the United States Aircraft Insurance Group (USAIG) and the Aircraft Accident Investigation Authority of The Bahamas.

Throughout the spring and fall academic semesters, we held five Safer Skies Series events which reached more than 420 Embry-Riddle students, faculty, and staff.

We continued to promote innovative aviation and aerospace safety research conducted by Embry-Riddle faculty members through our internal research seed grant program and our longstanding collaboration with the College of Engineering at Embry-Riddle's Daytona Beach campus. In the fall, we also formalized and launched our Faculty Research Affiliate program, which will allow us to

significantly expand our research enterprise in 2026.

Looking ahead, we plan to debut our *Safer Skies Video Podcast* in the first quarter of 2026. This TV-style webcast will feature interviews with safety leaders regarding topics relevant to today and tomorrow. We are hosting our third annual research symposium in January, with a focus on data analytics. For the fifth consecutive year, in April BCAAS and the College of Aviation will host the Air Charter Safety Foundation's annual safety symposium. Meanwhile, we will continue our mission of leading and

fostering innovation and collaboration among industry, government and academic leaders, focusing on research, academic programs, professional education, and industry engagement that will enhance aviation and aerospace safety.

We realize that none of this would happen without your support and that of Embry-Riddle's administration. For that we are grateful and appreciative.

*As we turn the page on 2025, I challenge you to think about how, in your corner of the aviation world, you can advance the safety of all who fly.*

*"We will continue our mission of leading and fostering innovation and collaboration among industry, government and academic leaders, focusing on research, academic programs, professional education, and industry engagement that will enhance aviation and aerospace safety."*

# ABOUT THE CENTER

Dedicated to advancing the safety of all who fly, the Boeing Center for Aviation and Aerospace Safety (BCAAS) is a center of excellence at Embry-Riddle Aeronautical University that conducts research, supports academic programs, offers world-class professional education, and engages with industry leaders. BCAAS is a cross-disciplinary, university-wide center that works across all three Embry-Riddle campuses and with each of the University's 11 colleges.

**PILLARS:** The Center's activities are driven by four fundamental pillars:



**VISION:** To be the global leader for enhancing aviation and aerospace safety.

**MISSION:** Lead and foster innovation and collaboration among industry, government, and academic leaders, focusing on research, academic programs, professional education, and industry engagement that will enhance aviation and aerospace safety.

**CORE VALUES:** Integrity, Innovation, and Collaboration



## RESEARCH

We conduct and promote impactful safety research aimed at improving aviation and aerospace safety.



## ACADEMIC PROGRAMS

We support academic programs at all campuses.



## PROFESSIONAL EDUCATION

We offer industry-leading professional education courses in aviation and aerospace safety.



## INDUSTRY ENGAGEMENT

We engage with industry to provide aviation and aerospace safety expertise and keep us immersed in industry challenges.

# 2025 BY THE NUMBERS

**\$50,000+**

Awarded by BCAAS to Embry-Riddle faculty and students to conduct impactful safety research

**28**

Speaking engagements among BCAAS leaders

**\$39,000+**

Provided to support Embry-Riddle students

**16**

Academic and Trade Publications Among Center Leaders

**420+**

in-person and virtual attendees across five Safer Skies Series events

**6**

Professional Programs contract courses delivered

**12**

Students involved in funded research

**5**

Safer Skies Series Events

**32**

Professional Programs open enrollment courses delivered at the BCAAS facility in Daytona Beach, Florida

**1**

Safety Management Systems course taught in Jakarta, Indonesia

## 2025 AVIATION WEEK LAUREATE

The Boeing Center for Aviation and Aerospace Safety received a 2025 Aviation Week Laureate. As described by Aviation Week Network, this award recognizes “the extraordinary achievements of individuals and teams in our esteemed industry. These accomplishments embody the spirit of exploration, innovation and vision that inspire others to strive for progress, change and leadership in aviation and aerospace.” The award was presented in March in Washington D.C.







“It has been a privilege to collaborate with Dr. Kiernan while working with NASA on the in-time aviation safety management system (IASMS) project. This has been one of the most formative experiences of my research career. Our work has advanced Safety-II research in Part 121 operations, including resilience analysis, learning from all operations, and IASMS.”

– JOEL SAMU, PH.D. STUDENT

# CONDUCTING IMPACTFUL SAFETY RESEARCH

BCAAS conducts and supports impactful aviation and aerospace safety research. We do this by procuring external funding from industry and government to support major research projects. We also award grants internally to Embry-Riddle faculty members who, along with students, are pursuing safety-focused research.

## SECOND ANNUAL SAFETY RESEARCH SYMPOSIUM

On January 23, we held our Second Annual Safety Research Symposium, which brought together more than 140 students and faculty, both virtually and in-person, for a day of collaboration and discussion about pressing issues in aviation safety. Five presentation tracks addressed AI applications in aviation safety, innovations in technology, pilot mental health, flight operations, and engineering safety solutions. In addition, 11 posters were presented, representing the work of 19 students and faculty. Through this symposium, faculty and students were able to share completed projects as well as works in progress and ideas for future research. Proceedings from the symposium are available on our Scholarly Commons website at [commons.erau.edu/bcaas-annual-srs](https://commons.erau.edu/bcaas-annual-srs).

“Working here has pushed me to better myself and explore interdisciplinary studies which have bolstered my academic career.”

– NICHOLAS DEGARMO, MASTER’S STUDENT





## RESEARCH PROJECTS

**Learning From What Goes Right: Year Two**  
*Dr. Kristy Kiernan, Dr. Bert Boquet, Dr. Jianhua Liu, Professor Andy Schneider, Dr. Dave Cross, Dr. Ed Odisho, Dr. Bob Waltz, Joseph O'Brien, and Joel Samu*

Work continues on our *In-Time Aviation Safety Management System (IASMS)* project, funded by the National Aeronautics and Space Administration (NASA). This project aims to capture, evaluate, and reinforce resilient performance on the flight deck. Led by BCAAS Associate Director, Dr. Kristy Kiernan and supported by undergraduate and graduate students from across the university, the team has transcribed 85 simulator scenarios, developed captioned videos for 73 scenarios, identified gaps in support for resilient performance, created a roadmap to address those gaps, and analyzed NTSB reports for evidence of resilient performance.

Throughout 2025, Kiernan, Ph.D. student Joel Samu, and master's student Joseph O'Brien spoke about their work at major industry conferences around the world. Samu and Kiernan also published a peer-reviewed article that provides a framework for how resilience, in-time safety management, and learning from all operations concepts work together to build a shared safety culture.

**Safety Culture Across Cultures: A Socio-Culturally Driven International Validation of a Safety Culture Assessment & Improved Survey**

*Dr. Mariateresa Sestito, Dr. Ernest Ogbozor, Dr. João Souza Dias Garcia, and Dr. Jules Yimga*



While reported aviation accident rates have largely improved over time, industry statistics still indicate high accident rates and a lack of continuous improvement among geographic regions. Existing data demonstrate a pressing need for interventions to improve safety performance in areas where progress has stalled. This new project examines this issue and assesses safety culture at the international level. The team will study how national cultures permeate commercial aviation industry practices globally and influence safety culture.

**Resilient Psychophysiological Profiles in Flight Training and Aviation Academic Environments: A Field Study**

*Dr. Esmaeil Zarei, Dr. John Kleber, and Professor Parker Northrup*

This field study aims to provide proof of concept in characterizing high-resilient psychophysiological profiles in real aviation-related environments, including primary flight training and aviation-focused college environments. Research on highly resilient profiles will adopt a novel trans-domain approach to investigate specific psycho-physiological traits supporting training optimization and improving safety during aviation operations.

## FACULTY RESEARCH AFFILIATES

This year, we launched our Faculty Research Affiliate (FRA) program. Through this program, Embry-Riddle faculty members with strong research backgrounds in aviation and aerospace safety work directly with BCAAS to identify industry research needs, pursue external grant opportunities, and build research teams to execute projects that advance the safety of all who fly. The FRA program will allow us to grow our research enterprise and have a greater impact on the industry we serve. Our FRAs will also provide Embry-Riddle graduate and undergraduate students with opportunities to engage in impactful research.

Our inaugural FRAs are Dr. Esmaeil Zarei, Associate Professor in the Safety Science Department at Embry-Riddle's Prescott campus, and Dr. Daniel Pleffken, Assistant Professor in the School of Graduate Studies at Embry-Riddle's Daytona Beach campus.

**"It's an honor to serve as a BCAAS Faculty Research Affiliate and contribute to the Center's mission. I'm eager to help align the BCAAS research agenda with safety**

**priorities, broker partnerships across academia, industry, and regulators, and turn those efforts into measurable outcomes, peer-reviewed publications, funded projects, and talent development that strengthen operational safety."**  
*– Dr. Daniel Pleffken, Faculty Research Affiliate*

Read more about them on page 24.

## INTERNAL SAFETY RESEARCH SEED GRANTS

In 2025, we awarded a combined **\$30,000** to Embry-Riddle faculty members through our Safety Research Seed Grant program. These grants provide start-up funds to support innovative, impactful research projects that will lead to the submission of externally funded grant or contract proposals. The two projects that received funding this year investigate vital aviation safety challenges at home and around the world.

**Why Does Sub-Saharan Africa Face a High Aviation Accident Rate? An Exploration of Safety Culture in Nigeria's Aviation Industry**

*Dr. Ernest Ogbozor*  
 College of Arts & Sciences, Daytona Beach Campus

This collaborative study examines aviation safety in Nigeria to better understand how safety culture is perceived and practiced throughout the nation's aviation industry. Nigeria—Africa's largest economy and a major regional aviation hub—has made significant investments in professional safety training. Yet there re-

mains a critical gap in empirical research on how safety culture is perceived and practiced across Nigeria's aviation sector. This project addresses that gap by exploring the organizational, regulatory, and human factors that shape Nigeria's aviation safety culture today. The outcomes will inform the development of a larger multi-year external grant proposal in partnership with BCAAS and the College of Aviation, focused on international validation of safety culture assessment tools across Africa.

**Retrospective Detection of Valve Sticking Events in Aircraft Engines Using Historical Sensor Data**  
*Dr. Parham Phoulady*  
 College of Engineering, Daytona Beach Campus

Valve sticking—resulting from factors such as deposits, corrosion, or mechanical wear—may compromise engine functionality or precipitate abrupt failures, frequently eluding conventional inspection protocols. Such undetected anomalies pose risks to safety, elevate operational expenditures, and disrupt flight continuity. To address this challenge, the researchers will examine an extensive dataset comprising more than 3,000 hours of flight records from Embry-Riddle Aeronautical University's Daytona Beach and Prescott campuses. From this analysis, the principal objective is to develop an accessible analytical tool capable of delineating the occurrence of valve sticking incidents within historical data, thereby furnishing maintenance personnel with actionable insights into engine performance deficiencies. This

tool will refine maintenance protocols, minimize superfluous interventions, and bolster aircraft safety while optimizing operational uptime.

## COLLEGE OF ENGINEERING AND BCAAS SEED GRANTS

For the third year in a row, we partnered with the College of Engineering (COE) at Embry-Riddle's Daytona Beach campus to award 5 research grants for faculty safety research.

**Integrated Communication and Environmental Sensing for Safety-Critical Autonomous Systems**  
*Dr. Siayo (Olivia) Li and Dr. Thomas Yang*

**GPS Spoofing and Jamming Attacks on UAVs with Low-Cost SDRs**  
*Dr. Laxima Niure Kandel*

**Enhancing Autonomous Cislunar Mission Capabilities with Meta-Reinforcement Learning and Augmented Reality-Enabled Rendezvous, Proximity Operations, and Lunar Landing**  
*Dr. David Canales Garcia, Dr. Axel Garcia, and Dr. Barbara Chaparro*

**Learning Probabilistic Push Affordance for Autonomous Robot Navigation in Challenging Environments**  
*Dr. Cargi Kilic and Dr. Eric Coyle*

**Back-Lower Limb Exoskeleton with Safety-Oriented, Reinforcement Learning-Based Control for Worker Injury Prevention**  
*Dr. Shuzhen Luo, Dr. Yanbing Chen, and Dr. Thomas Yang*





# SUPPORTING ACADEMIC PROGRAMS

One of our fundamental pillars at BCAAS is supporting Embry-Riddle's stellar academic programs. We do this through our Safer Skies Series, connecting industry leaders with faculty members to organize guest lectures, and providing financial support to students for internships and graduate research assistantships. Funding for these efforts is made possible, in part, by donations.

## INDUSTRY EXPERT GUEST LECTURES

In September, during their visit to campus for our fall IAB meeting, IAB Chair Terry McVenes, Captain Houston Mills, and Captain Mike Ginter spoke to undergraduate students in introductory and advanced Embry-Riddle undergraduate aviation safety courses. Captain McVenes discussed aviation safety in the age of artificial intelligence, while Captain Mills spoke about aviation safety management systems. AOPA's Ginter spoke about general aviation safety and flight training.



## NEW SAFETY EXPERIENCE KIOSK

Thanks to a donation from Boeing, our building now hosts a Safety Experience kiosk. This interactive, touch-screen kiosk allows BCAAS visitors to explore and learn about significant events, including accidents, investigations, innovations, and regulatory decisions that have shaped aviation and aerospace history.

Originally developed for Boeing employees, the kiosk's timeline is part of the Safety Experience at Boeing, a digital learning platform that serves as an extensive learning and research tool to create a shared understanding of the industry's advancements in product safety. Next time you're on Embry-Riddle's Daytona Beach campus, we invite you to visit the kiosk on the first floor of our building.



## SAFER SKIES VIDEO PODCAST

We spent the last half of 2025 outfitting our new Safer Skies studio. This video podcast, which will premier in early 2026, takes viewers into the heart of aviation and aerospace, revealing the real stories behind the rigorous innovations that shape the industry's highest safety standards. Stay tuned!



“BCAAS connected us with aviation experts from within ERAU, across the U.S., and internationally to enhance our Cross-Cultural Communication class. My conversations with these experts have explored topics such as language as a human factors in aviation safety, cultural influences on safety reporting, and practical communication barriers in air traffic control. This kind of support demonstrates what makes ERAU stand out.” – DR. ALLISON KWESSELL





“It’s wonderful to meet people who directly work with larger organizations—such as the FAA, Boeing, NTSB—and to know what’s happening in the industry.”

– MADHUVANTHI RAVICHANDRAN, SAFER SKIES SERIES ATTENDEE



## SAFER SKIES SERIES

Each semester, we invite Embry-Riddle students, faculty members, and industry experts to participate in our Safer Skies Series. The series includes panel discussions, one-to-one interviews and conversations, and roundtable debates.

Each event in our Safer Skies Series is moderated by Embry-Riddle students, providing them an opportunity to research today’s aviation and aerospace safety challenges, plan questions for expert panelists, and gain professional public speaking experience. Each panel is also streamed so students, faculty, and staff at Embry-Riddle’s Prescott and Worldwide campuses may attend. In 2025, we held five Safer Skies Series events with more than 420 total attendees.

### Aviation Human Factors and Accident Investigation

*February 5, 2025*

We kicked off our 2025 Safer Skies Series by welcoming Dr. Katherine Lemos—former Chairperson and CEO of the U.S. Chemical Safety and Hazard Investigation Board, who also previously worked at the FAA and NTSB—for a one-to-one interview with Drew Nabors (B.S. in Aeronautical Science ’26). They discussed human factors issues in aircraft accidents, lessons learned working at the NTSB, aircraft certification, and artificial intelligence issues and applications in aviation safety.

### Safety Culture in the Business Aviation World

*February 21, 2025*

Kolin Jones and Dr. Victor Fraticelli Rivera were led in conversation by Grace Varghese (B.S. in Aeronautical Science ’24). In front of a standing-room-only crowd, they discussed business aviation safety culture, pressures when flying and working with high-profile clients, and ways to pursue a career in the business aviation industry.

### The State of Aviation Safety

*April 2, 2025*

As the spring semester came to a close, Dr. Michael McCormick, Dr. Flavio Mendonca, and Robert Sumwalt were led in conversation by Akie Oleszweski (B.S. in Aerospace and Occupational Safety ’25) about the state of aviation safety. Their discussion covered the January 29, 2025, mid-air collision in Washington D.C., emphasized the importance of avoiding speculation, and addressed the investigatory role of the NTSB.

### A Conversation with Aviation Safety Leaders of Today and Tomorrow

*September 16, 2025*

During our fall IAB meeting, we held an exciting Safer Skies roundtable discussion between students and members of our IAB. Embry-Riddle students Heather Bond (M.S. in Human Factors ’26), Julia Dentinger (B.S. in Aeronautical science ’26), Faith Lee (B.S. in Aerospace Engineering ’26), and Aspen Rosica (B.S. in Aeronautics ’26) posed thoughtful questions to a panel of IAB members Mike Ginter, Terry McVenes, Houston

Mills, Lacey Pittman, and Kim Pyle regarding the current state of aviation safety. This wide-ranging conversation covered, among other topics, professionalism, mid-air collision avoidance, flight training safety standards, learning from data, and the related topic of artificial intelligence. A recording of the discussion is available on Embry-Riddle’s YouTube channel.

### Creating a Strong Safety Culture with a Safety Management System

*November 13, 2025*

Our final Safer Skies Series event of the year featured a discussion about Embry-Riddle’s safety culture and safety management system. Bob Joyce (Director of Aviation Safety) and Zoe Messenger (Aviation Safety Coordinator) were led in conversation by Sahil Parag Koticha (B.S. in Aeronautical Science ’28) before a full house. Their discussion covered what it takes to develop a strong flight safety culture, barriers that discourage students or instructors from reporting safety issues, and the importance of tracking interventions that reduce the severity of safety events.





# WORLD CLASS PROFESSIONAL EDUCATION IN AVIATION AND AEROSPACE SAFETY

We're proud partners with the Embry-Riddle Professional Programs team. This year, as always, they organized an impressive list of professional education courses and continued to receive excellent feedback from course attendees. Courses offered this year included Disaster Assistance and Response, Advanced Avionics, Aircraft Accident Investigation and Management, Aviation Safety Management Systems, Aviation Law in the U.S., HFACS – Human Factors Analysis and Classification System, and HFACS – Advanced.

In 2025, Professional Programs increased their total open enrollment courses by double digits, offering 32 classes, at the BCAAS facility on Embry-Riddle's Daytona Beach campus. More than 420 industry professionals from around the world attended Professional Programs courses this year.

## OUR GLOBAL REACH

The reach of our professional education courses in aviation safety extends far beyond the United States. In February, BCAAS and Professional Programs taught a 5-day advanced Safety Management System (SMS) course in Jakarta, Indonesia, contracted by The Boeing Company for the Directorate General Civil Aviation (DGCA) of Indonesia, the nation's aviation regulatory authority. Taught by Robert Sumwalt and Embry-Riddle Worldwide Adjunct Professor Bob Waltz, Ph.D., the course focused on applying the academic aspects of a SMS in a practical setting, "namely, how to assess the effectiveness of the SMS of those operators and maintenance providers that DGCA is responsible for overseeing," said Sumwalt. Teaching courses such as this help us achieve our goal of being a global leader in aviation and aerospace safety.

If you are interested in conducting SMS training at your organization, please email Sarah Ochs at [ochs839@erau.edu](mailto:ochs839@erau.edu).

## PARTNERSHIP WITH USAIG

BCAAS and Professional Programs formalized a partnership with the United States Aircraft Insurance Group (USAIG), one of the world's leading aviation-specific insurance providers. Eligible USAIG policyholders may now take any ERAU safety and risk management professional education course and, as part of its Performance Vector program, USAIG will cover up to \$2,800 of the tuition fee.

"Astute and professional leaders are the cornerstones of safe and well-managed flight operations, and there's no better source for aviation-centered education than ERAU," said John Brogan, USAIG President and CEO, when announcing the partnership. "I'm delighted that the Performance Vector benefit can now be applied there to help individuals in our policyholder flying organizations advance their professional knowledge and careers."

Sarah Ochs, Director of Daytona Beach Professional Programs, explained that "this tuition assistance initiative empowers USAIG policyholders to access safety

**"The training was interactive and engaging. I feel more confident in performing my tasks after attending this training."**

– CLASS ATTENDEE

and risk-focused professional education, strengthening skills and advancing the safety of all who fly."

## PARTNERSHIP WITH THE AIRCRAFT ACCIDENT INVESTIGATION AUTHORITY OF THE BAHAMAS

In August, BCAAS and Embry-Riddle Daytona Beach Professional Programs entered another partnership with the Aircraft Accident Investigation Authority of The Bahamas (AAIA). Under the agreement, ERAU will serve as the preferred training partner of choice for the AAIA. The agreement further provides for internship opportunities for Bahamian students enrolled at Embry-Riddle.

**"I have been teaching ProEd courses for probably 20 years. As an instructor, teaching ProEd has always been a great experience because of Sarah and Crystal's hard work. Everything is always well organized and seamless. As an instructor, all I have to do is take the podium and present because they have worked everything else out."**

**"Yesterday was my first time experiencing ProEd from the perspective of an attendee in the Crisis Management class. Once again, it was a first-class operation. From the clear and concise communication before the class, to the warm welcome and setup of the classroom, to the course materials we received, everything was highly professional and effective."**  
– Anthony Brickhouse, professor emeritus, Embry-Riddle.





# SPEAKING ENGAGEMENTS



The BCAAS leadership team delivered 28 research, education, and thought leadership presentations at academic and industry events around the world.

**SPEAKER**, *The Critical Role of Safety Leadership*, Embry-Riddle Aeronautical University Asia Campus, Singapore, February 2025. Robert Sumwalt.

**SPEAKER**, *Airmanship and Professionalism*, Boeing Aviation Safety Conference, Boca Raton, Florida, February 2025. Robert Sumwalt.

**PANELIST**, *Advanced Air Mobility Panel Discussion*, Hot Topics in Air & Space Law, New York City, New York, February 2025. Trevor Simoneau.

**KEYNOTE SPEAKER**, Boeing Safety and Quality Awards Ceremony, virtual event, March 2025. Robert Sumwalt.

**PANELIST**, *Leadership at the Board Level: Challenges and Opportunities*, 36th Annual Women in Aviation International Conference, Denver, Colorado, March 2025. Becky Lutte, with IAB members Shelly DeZevallos and Lacey Pittman.

**PANEL MODERATOR**, *Why Aviators Should Pay Attention to the Supreme Court*, 36th Annual Women in Aviation International Conference, Denver, Colorado, March 2025. Trevor Simoneau, with Justine Harrison and IAB member Lauren Haertlein.

**PANELIST**, *Parts Integrity Push*, MRO Americas 2025, Atlanta, Georgia, April 2025. Robert Sumwalt.

**PRESENTER**, *The Critical Role of Standard Operating Procedures*, Norwegian Flight Safety Conference, virtual presentation, April 2025. Robert Sumwalt.

**PRESENTER**, *Learning from All Operations: Where Safety and Training Intersect*, World Aviation Training Summit, Orlando, Florida, April 2025. Kristy Kiernan and Joel Samu.

**PRESENTER**, *Strengthening Resilience and Safety Through Mental Health Awareness in Collegiate Aviation*, World Aviation Training Summit, Orlando, Florida, April 2025. Flavio Mendonca with Samantha Bowyer.

**KEYNOTE SPEAKER**, *The Critical Role of Safety Leadership*, RTX Product Safety Summit, West Palm Beach, Florida, May 2025. Robert Sumwalt.

**PRESENTER**, *Organizational Support for Resilient Performance in Part 121 Flight Deck Operations*, International Symposium on Aviation Psychology, Corvallis, Oregon, May 2025. Kristy Kiernan and Joseph O'Brien.

**PRESENTER**, *The Role of Mental Health Education and Wellness Training in Achieving Resilience for Collegiate Aviation Pilots*, 70th Business Aviation Safety Summit, Charlotte, North Carolina, May 2025. Flavio Mendonca, with Samantha Bowyer, Teresa Michaelson, and Keiron Timothy.

**PRESENTER**, *Exploring New Data Sources and Analysis Methods for Supporting Resilient Performance in Routine Operations: Embry-Riddle LFAO Research Portfolio*, Flight Safety Foundation Learning from All Operations Working Group, Brussels, Belgium, June 2025. Kristy Kiernan, Joel Samu, and Joseph O'Brien.

**PANEL MODERATOR**, *Reinforcing Safety Fundamentals to Address Persistent and Emerging Safety Risks*, Asia-Pacific Summit for Aviation Safety, Singapore, July 2025. Robert Sumwalt, with IAB member Lacey Pittman.

**PRESENTER**, *FAA Rulemaking: Your Role and Voice*, EAA AirVenture 2025, Oshkosh, Wisconsin, July 2025. Trevor Simoneau.

**PRESENTER**, *Development of a Safety Management System (SMS) Framework to Mitigate Bird Strikes in Urban Air Mobility*, Aviation Wildlife Management Conference – Bird Strike Committee, Portland, Oregon, August 2025. Flavio Mendonca, with Bill Pan.

**SPEAKER**, *Implementation Progress Update on the Aviation Supply Chain Integrity Coalition*, ICAO Sky Talk at the International Civil Aviation Organization Tri-Annual Assembly, Montreal, Canada, September 2025. Robert Sumwalt.



**PRESENTER**, *Taking Aviation Safety to the Supreme Court*, 2025 Constitution Day Lecture, Embry-Riddle Aeronautical University, Daytona Beach, Florida, September 2025. Trevor Simoneau.

**PRESENTER**, *Lessons from the Ashes: The Critical Role of Safety Leadership*, Acrisure De-Riskathon, virtual event, October 2025. Robert Sumwalt.

**PRESENTER**, *Mental Wellness Resources in Collegiate Aviation: Availability, Utilization, and Effectiveness Across Part 141 Universities*, 78th University Aviation Association Annual Education Conference and Expo, Orange County, California, October 2025. Flavio Mendonca, with Lauren Bermester.

**PRESENTER**, *Fostering Mental Wellness in the Early Stages of Professional Pilots' Careers: A Collegiate Curriculum for Aviators*, 78th University Aviation Association Annual Education Conference and Expo, Orange County, California, October 2025. Flavio Mendonca, with Samantha Bowyer, Teresa Michaelson, and Keiron Timothy.

**PRESENTER**, *Assessing the Impact of Wildlife Strikes on Aircraft Engines: A Data-Driven Exploration*, 78th University Aviation Association Annual Education Conference and Expo, Orange County, California, October 2025. Flavio Mendonca, with Ryan Wallace.



**PRESENTER**, *Supporting Resilient Performance in U.S. Airline Flight Deck Operations: Gaps, Challenges, and Opportunities*, 78th International Aviation Safety Summit, Lisbon, Portugal, November 2025. Kristy Kiernan.

**PANELIST**, *Procedural Drift and SOP Deviations – Unintended Pathways to Risk*, 78th International Aviation Safety Summit, Lisbon, Portugal, November 2025. Kristy Kiernan.

**PRESENTER**, *Miscommunication in Aviation: Proposals for the Systematic Investigation of Communication and Language Factors in Aircraft Accidents and Incidents*, 78th International Aviation Safety Summit, Lisbon, Portugal, November 2025. Flavio Mendonca, with Markus Bieswanger and Elizabeth Matthews.

**KEYNOTE SPEAKER**, U.S. Meeting of International Union of Aerospace Insurers, New York City, New York, November 2025. Robert Sumwalt.

**KEYNOTE SPEAKER**, University of Cincinnati Armstrong Institute for Space, Technology, and Research, Cincinnati, Ohio, November 2025. Mariateresa Sestito.





## ACADEMIC AND TRADE PUBLICATIONS

The following scholarly and popular publications were authored or co-authored this year by members of the Center's leadership team and faculty affiliates (names highlighted in bold are authors associated with BCAAS).

### JOURNAL ARTICLES

- Kristy Kiernan** and **Joel Samu**, "Advancing Aviation Safety Through In-Time Safety Management, Resilience, and Learning from All Operations," *Collegiate Aviation Review International* 43, no. 2 (2025): 69–107.
- Joel Samu**, **Joseph O'Brien**, Edwin Odisho, Bob Waltz, Lucas Epperson, Stephen Rice, and **Kristy Kiernan**, "Organizational Support for Resilient Performance in Part 121 Flight Deck Operations," *Proceedings of the 23rd International Symposium on Aviation Psychology* (2025): 48–53.
- Brent Terwilliger, Mark Miller, **Kristy Kiernan**, and David Harvie, "Toward AI-Ready Graduates: Connecting Educational Innovation to Aviation Workforce Needs," *Proceedings of the Applied Human Factors and Ergonomics Conference* 199, (2025): 1105–1115.
- Mark McCullins, Steven Hampton, Stephanie Fussell, **Kristy Kiernan**, and Jennifer Thropp, "The Effectiveness of Using Virtual Reality Training Environments for Procedural Training in Fourth-Generation Airliners," *The Aeronautical Journal, First View* (2025): 1–20.

- Brian J. Roggow**, "A Scoping Review of Aviation Loss of Control Inflight Research," *Journal of Aviation/Aerospace Education & Research* 34, no. 3 (2025): 1–31.
- Brian J. Roggow**, "Exploring National Transportation Safety Board Aviation Modality Recommendations Through Content and Sentiment Analyses: 2015–2019," *Safety* 11, no. 2 (2025): Article 54.
- Flavio A. C. Mendonca** and Ryan J. Wallace, "Data-Driven Analysis of Engine-Related Wildlife Strikes in Multi-Engine Jet Aircraft (2009–2023)," *Collegiate Aviation Review International* 43, no. 2 (2025): Proceedings of the 2025 UAA Annual Conference, Article #2.
- Bill Deng Pan and **Flavio A. C. Mendonca**, "Analysis of Health Promoting Lifestyle and Associated Factors on Collegiate Aviation Pilots," *Journal of Aviation/Aerospace Education & Research* 34, no. 3 (2025): 1–11.

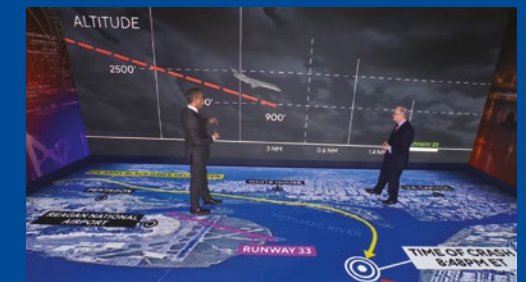
### TRADE PUBLICATIONS

- Robert Sumwalt**, "Unapproved Aircraft Parts May Be More of a Problem Than You Realize," *Business & Commercial Aviation*, February 28, 2025.
- Robert Sumwalt**, "Bad Decisions Lead to a Deadly Citation Crash," *Business & Commercial Aviation*, June 27, 2025.
- Robert Sumwalt**, "Back to Basics," *Premium on Safety*, Issue 52, Spring 2025.
- P. Barry Butler and **Robert Sumwalt**, "Opinion: Committed Modernization is Critical for U.S. ATC," *Aviation Week & Space Technology*, July 21, 2025.
- Kristy Kiernan**, "Learning from All Operations," *Premium on Safety*, Issue 53, Summer 2025.
- Robert Sumwalt**, "Great Leadership Doesn't Happen by Luck," *Business & Commercial Aviation*, October 6, 2025.
- Robert Sumwalt**, "A Foreword Message from Former NTSB Chair Robert Sumwalt," *NBAA Business Aviation Insider*, October 2025.
- Robert Sumwalt**, "What's Really Behind Your Hangar Door?," *Premium on Safety*, Issue 54, Fall 2025.



## MEDIA APPEARANCES AND FEATURES

Members of the BCAAS leadership team are consistently sought after to provide insights on current issues in aviation and aerospace safety.





# MEET THE BCAAS TEAM



**ROBERT L. SUMWALT**  
*Executive Director*

Robert Sumwalt is the Executive Director of BCAAS. He also holds appointments of Distinguished Fellow in Aviation Safety and Associate Professor at Embry-Riddle. Previously, Sumwalt was appointed by three U.S. presidents and unanimously confirmed by the U.S. Senate on four occasions to serve on the National Transportation Safety Board (NTSB). During his 15 years as NTSB Board Member, he served as chairman for four years and a two-year stint as vice chairman. Sumwalt has five decades of aviation experience. Additionally, Sumwalt served as a research consultant to NASA's Aviation Safety Reporting System (ASRS), and he has published more than 120 articles and papers about aviation safety-related issues. He earned a master's degree in Aeronautical Science, with distinction, from Embry Riddle with concentrations in aviation/aerospace safety systems and aviation human factors. In 2017, the University of South Carolina conferred an honorary Doctor of Science to Sumwalt. The following year, he received an honorary doctorate from Embry-Riddle.



**KRISTY KIERNAN, PH.D.**  
*Associate Director*

Dr. Kristy Kiernan is the Associate Director of BCAAS. She is also an Associate Professor in the College of Aviation at Embry-Riddle's Worldwide campus. A former Coast Guard aviator, Dr. Kiernan was an aviation safety officer, crew resource management instructor, and chief pilot for technical issues in the Falcon 20. Her current research investigates the positive contribution of human performance to aviation safety and the safety aspects of integrating uncrewed systems into the national airspace. She is a contributor to Forbes.com in the areas of aerospace and defense and serves as the curator of the World Economic Forum Drone Transformation Map. She holds a B.S. in Neuroscience from Brown University, a Ph.D. in Aviation from Embry-Riddle, an airline transport pilot certificate with a Falcon type-rating, and a remote pilot certificate. Until recently, she was an actively flying commercial pilot, flying the SR-22 and TBM 850.



**MARIATERESA SESTITO, PH.D.**  
*Chief Research Scientist*

Dr. Mariateresa Sestito is a neuroscientist, clinical psychologist and FAA commercial pilot. She serves as the Chief Research Scientist at BCAAS. Dr. Sestito is a board-certified Psychologist, with a B.S. in Clinical Psychology, a M.S. in Neuropsychology and Life-Span Rehabilitation, and a Ph.D. in Neuroscience from the University of Parma, Italy. She has more than 20 years of combined clinical neuropsychiatry and internationally conducted biomedical research experience, with an interdisciplinary focus on mind and brain, and human performance. She is an active advocate for pursuing highly innovative aerospace endeavors and for the inclusion of women and minorities in STEM and aerospace. In addition to previous extensive work experience in the academia and many international peer-reviewed publications and technical presentations in aerospace medicine and psychophysiology, Dr. Sestito is deeply passionate about old school stick and rudder grass roots aviation and loves flying 1940s vintage taildraggers and gliders.



**ROSA BIONDI**  
*Administrative Operations Lead*

Rosa Biondi is the Administrative Operations Lead at BCAAS. During her three-year tenure at BCAAS, she has proven to be the "go to" person for anything and everything related to getting things done at Embry-Riddle. Her background includes nearly 30 years of experience, both administratively and in very technical project management roles in the financial services sector.



**TREVOR SIMONEAU**  
*Research Associate*

Trevor holds a joint appointment as a Research Associate at BCAAS and an Instructor in the Department of Aeronautical Science at Embry-Riddle's Daytona Beach campus. His academic work focuses on aviation legislation, regulation, public policy, and flight safety topics. He studies and writes about the relationship between aviation safety and the law, often in the context of governing new aviation technologies. He earned a master's degree in aviation, with distinction, and a bachelor's degree in aeronautics, *summa cum laude*, from Embry-Riddle Aeronautical University.



**SARAH OCHS**  
*Director of Professional Programs*

Sarah Ochs is the Director of Professional Programs at Embry Riddle Aeronautical University on the Daytona Beach, Florida, campus. She has served as the director for over 14 years and has represented the university for nearly two decades. Sarah has welcomed over 1,000 professionals from over 65 countries to open enrolment and customized contract courses that cover the scope of the aviation and aerospace industry. Under Sarah's leadership, the offerings by Professional Programs have quadrupled and increased in diversity of subject area and modalities of learning. Sarah's passion for hospitality, continued learning and customer service serves her well as an ambassador for the university. She holds a Master of Science in Management and a Bachelor of Arts in Education.



**CRYSTAL FORNATARO**  
*Support Specialist, Professional Programs*

Crystal Fornataro is the Support Specialist for Daytona Beach Professional Programs at the Center, bringing more than five years of expertise within

Embry-Riddle Aeronautical University. In her role, she collaborates with the aviation industry with a strong focus on advancing safety in aerospace. Crystal's journey at Embry-Riddle began by supporting the University President and Administration, where she effectively applied her strategic insights, exceptional hospitality skills, and unwavering commitment to excellence.



**BECKY LUTTE, PH.D.**  
*Faculty Affiliate, Worldwide Campus*

Dr. Becky Lutte is the Chair of Graduate Studies and an Associate Professor in the College of Aviation at Embry Riddle's Worldwide campus. She conducts research on a variety of topics, such as safety policy and sustainability, with a primary focus on aviation workforce development and the outreach, recruitment and retention of women in aviation. She has more than 25 publications in a variety of academic journals, magazines and book submissions, as well as multiple presentations. Dr. Lutte has testified before the House and Senate on topics related to the aviation workforce and women in aviation. She was appointed by the Secretary of the Department of Transportation to the FAA Women in Aviation Advisory Board, which developed recommendations and



strategies for the FAA and Congress to encourage women to pursue careers in aviation. She has also served on numerous boards, including the National Aeronautic Association. She is a former commuter pilot, active general aviation pilot, and aircraft owner of an RV7 and RV10 experimental homebuilt aircraft.



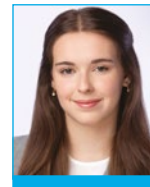
**FLAVIO ANTONIO COIMBRA MENDONCA, PH.D.**  
*Faculty Affiliate, Daytona Beach Campus*

Dr. Flavio Mendonca is an associate professor at Embry Riddle Aeronautical University. His expertise includes fatigue in aviation management, mental health in collegiate aviation, and wildlife hazard mitigation. He co-developed the Collegiate Aviation Fatigue Inventory and a fatigue training module adopted by the Federal Aviation Administration's WINGS Program. He has authored or co-authored more than 40 peer-reviewed journal articles and delivered more than 100 presentations at academic and industry conferences. Before joining Embry-Riddle's faculty, he served for 28 years in the Brazilian Air Force as a pilot and Flight Safety Officer. While in the Brazilian Air Force, he served for 14 years as an aircraft accident investigator for Centro de Investigação e Prevenção de Acidentes Aeronáuticos (CENIPA), the aircraft accident investigation authority of Brazil. He holds a Ph.D. from Purdue University, an M.S. in aviation safety from the University of Central Missouri, and a B.S. in aviation management from the Brazilian Air Force Academy.



**BRIAN ROGGOW**  
*Faculty Affiliate, Prescott Campus*

Brian Roggow serves as Associate Dean of the College of Aviation and the department chair for Safety Science at Embry-Riddle's Prescott campus. He has been instrumental in developing a Safety Management System and implementing an Aviation Safety Action Program (ASAP) as well as a Flight Data Monitoring (FDM) program. As Director of Safety and ASAP ERC manager, he has investigated and analyzed more than 3,500 ASAP or confidential safety reports, using HFACS, WBAT, and Microsoft Excel and Access for analyses and production of figures/reports. He also analyzed more than 250,000 flight hours of instruction from G1000 flight data, producing assurance and promotion outputs for leadership and instructional staff. Brian is also a commercial pilot, certified flight instructor, administrative pilot examiner, and a FAAS Team lead representative, having been recognized as the 2017 FAAS Team Representative of the Year for Arizona and the Western Pacific region of the FAA. He is credentialed as a Certified International Safety Manager (CISM) by the International Society of Safety Professionals (ISSP), an Advanced Aviation Safety Officer by the Transportation Safety Institute (TSI) and a Certified HFACS Professional (CHP). He earned an A.A.S. in administration of justice, a B.S. in aeronautical science, an M.S. in safety science, and is currently pursuing a Ph.D. in aviation.



**EVELYN ITZKOWITZ**  
*Undergraduate Student Assistant*

Evelyn Itzkowitz is the Undergraduate Student Assistant at the Center. She is a senior majoring in aeronautical science with a minor in airline operations. An instrument-rated private pilot, she is currently pursuing her commercial pilot certificate. On campus, Evelyn serves as the Secretary for the Embry-Riddle Women in Aviation Chapter and is a member of the Flight Professional Conduct Board.



**DANIEL PLEFFKEN, PH.D.**  
*Faculty Research Affiliate*

Dr. Daniel Rondon Pleffken is an assistant professor and researcher in the School of Graduate Studies. His work centers on aviation safety and simulation, systems safety and certification and model-based engineering methods that align regulatory compliance with emerging technologies. A former career officer and military pilot in the Brazilian Air Force, Dr. Pleffken logged more than 1,500 flight hours on the Airbus CASA C-295, Cessna 208, T-25, T-27 and Embraer 110 (E-110). He has served in aircraft accident investigation and airworthiness certification, applying FAA, EASA and national regulatory frameworks to complex aerospace systems. From 2016 to 2020, he served as Chief Coordinator of Military Certification Processes in Brazil and as Deputy Industrial Manager for the KC-390 program, leading a

multidisciplinary team of more than 50 engineers and interfacing with Boeing, Embraer, SAAB and other organizations. He later managed the IFFM4BR project at IAE (through 2021) and directed the ITA Space Center (2022–2023), overseeing research initiatives and student development in aerospace technologies. Dr. Pleffken earned a Ph.D. in Systems Engineering from the Instituto Tecnológico de Aeronáutica (ITA), with research conducted in partnership with the University of Central Florida (UCF). His areas of expertise include flight instruction and safety management; aircraft certification and regulatory compliance; aviation operations management; quality systems, configuration management, and internal auditing; and student mentorship and training development.



**ESMAEIL ZAREI**  
*Faculty Research Affiliate*

Esmaeil Zarei assumed the role of Associate Professor of Safety Science at Embry Riddle Aeronautical University in 2022. Prior to this appointment, he was affiliated with the Centre for Risk, Integrity, and Safety Engineering (C-RISE) at Memorial University of Newfoundland, Canada, beginning in January 2020. He previously served as an Assistant Professor (2017–2022) and Faculty Instructor (2012–2014) in the Departments of Occupational Health and Safety Engineering in Iran. Before entering academia, Dr. Zarei worked for three years as a Safety and Risk Engineer in the manufacturing industry. During his academic career, he has held several

leadership roles, including Founder and Director of Safety and Occupational Health Laboratories, Director of a Student Research Center, and Executive Manager of the Industry Innovations & Partnerships Office. Notably, he played a key role in establishing one undergraduate and three graduate academic programs, including the development of their associated hardware and software infrastructure, in areas such as Ergonomics, Noise Control, Air Ventilation, and Safety Laboratories. Dr. Zarei is deeply committed to advancing science and engineering through innovative and

impactful research, particularly in Safety Science, Risk and Resilience Engineering, and Human Factors and Reliability. His research focuses on these domains within emerging technologies and complex sociotechnical systems. At the Robertson Safety Institute (RSI) at ERAU, he conducts research aimed at generating fundamental and conceptual knowledge, with applications across a wide range of emerging and safety-critical systems. In recognition of his scholarly contributions, he has been named among the World's Top 2% of Scientists by Stanford University for three consecutive years since 2021.

**THE CENTER'S INDUSTRY ADVISORY BOARD** | BCAAS is fortunate to be supported by an Industry Advisory Board (IAB) comprised of safety leaders in the aviation industry. The IAB serves as a liaison between BCAAS and the industry it serves. IAB members provide guidance to our leadership team and feedback on the Center's initiatives to ensure our work aligns with industry's safety priorities.

#### 2025 IAB MEMBERS:

- **Shelly deZevallos**, President, West Houston Airport
- **Bradley Elstad**, Vice-President of Corporate Safety, Security and Compliance, Republic Airways
- **MC Ernst**, Special Risks Underwriting Manager, USAIG/CAIG
- **Mike Ginter**, Senior Vice President, AOPA Air Safety Institute
- **Lauren Haertlein**, Deputy General Counsel – Policy & Regulatory, Joby Aviation
- **Craig Hoskins**, Vice President of Safety, Security and Technical Affairs, Airbus Americas, Inc.
- **Terry McVenes**, Aviation Safety Advocate and former CEO of RTCA.
- **Houston Mills**, President of Flight Operations, UPS Airlines
- **Lacey Pittman**, Vice President of Global Aerospace Safety, The Boeing Company
- **Kim Pyle**, Founder, KPI Aviation Intelligence





# PHILANTHROPIC SUPPORT

In accordance with IRS regulations, contributions to the Boeing Center for Aviation and Aerospace Safety may be tax deductible. Check with your accountant or tax attorney.

Embry-Riddle has established two philanthropic funds to honor Embry-Riddle graduate, Captain Jonathan Campos.

Jonathan grew up in Puerto Rico and New York City. From an early age he dreamed of becoming a pilot. At just nine years old, Jonathan lost his father, a New York City police officer, a loss that deeply shaped his sense of service. Raised by his mother and aunt, he remained devoted to his father's memory, making weekly visits to his father's grave. He carried his father's badge with him and even had it tattooed on his right shoulder as a lasting tribute.

Jonathan graduated from Embry-Riddle, earning a bachelor's degree in Aeronautical Science in 2015. He dedicated himself to logging flight hours and earning certifications, later becoming a flight instructor. His expertise extended beyond the cockpit. He was also a certified helicopter pilot and aircraft mechanic. In 2018, Jonathan achieved his goal of flying commercially when he earned a position as a pilot with PSA Airlines, a subsidiary of American Airlines. By 2022, he proudly became a Captain. He approached his work with unmatched dedication, finding joy in every flight and every interaction with passengers and crew.

Tragically, on January 29, 2025, Jonathan and 66 others lost their lives when a military helicopter collided over the Potomac River with the American Eagle flight that Campos was piloting. Amazingly, divers recovered his father's badge from the wreckage in the Potomac River, a testament to the legacy he carried with him. He was laid to rest next to his father at St John's Cemetery in Middle Village, Queens, New York.

**Jonathan Campos Aviation Safety Endowment:** This fund was made possible by the generosity of a member of Embry-Riddle's board of trustees and his wife, Neil and Alison Keating. This endowed fund will live in perpetuity and will support students participating in experiential learning opportunities, engagement, and research in aviation safety through the Center. Examples include internships in the field of aviation and aerospace safety, and stipends for students employed by BCAAS conducting aviation safety research.

**Jonathan Campos Aviation Program Support:** Gifts to this current-use fund support the advancement of research in aviation safety at Embry-Riddle and will be administered by the BCAAS.

## OTHER PHILANTHROPIC OPPORTUNITIES:

**John and Laura Hunter Aviation Safety Research Fund:** The research fund supports the advancement of aviation safety. The University, through the Office of Research and Doctoral Programs, the Boeing Center for Aviation and Aerospace Safety, or equivalent program will oversee the administration of the fund.

**Boeing Center for Aviation and Aerospace Safety Fund for Excellence:** This fund is utilized for faculty development, curriculum innovation, student enrichment, capital equipment.

**If you are considering a donation and have a question about our greatest need, please call** Robert Sumwalt at (386) 241-1958 or email [robert.sumwalt@erau.edu](mailto:robert.sumwalt@erau.edu).

**Please also consider signing up for our newsletter.** It's the best resource for staying up to date on all the things we're working on throughout the year. Sign up at [erau.edu/safety](http://erau.edu/safety).

## SUPPORT AND STAY IN TOUCH



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