



**INNOVATION, RESEARCH,
& CREATIVITY.**

**College of
Aviation**

**Fall 2022
Newsletter**



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Ph.D. in Aviation student:
Katherine Bell (Cohort 12)



MESSAGE FROM THE ASSOCIATE DEAN

Dr. Steven Hampton

Last summer the Ph.D. in Aviation completed the move from Worldwide to the Daytona Beach campus. My thanks to Dr. Truong, Katie Esguerra, and Flavia Danskine for their tireless efforts working with the university administration to successfully make the transition from WW to the Daytona campus with minimal changes to the program processes.

Our programs continue to grow, and our incoming Ph.D. in Aviation class is thriving after an outstanding August residency. We often see and hear from our graduates, and last week I heard from one of our first Ph.D. in Aviation graduates, Bill Tuccio Ph.D., who is now working for Garmin. Dr. Tuccio along with his colleagues from Garmin. received a patent for Electronic Charting, a topic that he wrote on for my class DAV 735 Current Issues and Future Trends, well done Dr. Tuccio!

As our enrollments grow across our four graduate programs, the number of faculty and staff to support the programs continue to grow as well. Please join me in welcoming our new School of Graduate Studies (SGS)

faculty member, Dr. Michael New who brings a wealth of industry experience to SGS from Delta Airlines, United Airlines, Copa Airlines, Korean Airlines, and Spirit Airlines, where he was VP for Corporate Safety and Regulatory Compliance. Dr. New will support the MSA and MSUS programs, Ph.D. dissertations, and master's thesis. He has a strong interest in Data Analytics and Machine Learning; for those of you interested in those topics, I encourage you to reach out to him.



Dr. Bill Tuccio



Dr. Michael New

Steven Hampton



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Message from the Associate Dean

PH.D. IN AVIATION NEWS

Dr. Dothang Truong

Program Coordinator



I am very pleased to announce that our transition to the Daytona Beach campus has been completed without any issues. We are officially a Daytona Beach program. I would like to thank the University's task force for their diligent work in this transitioning process. Many offices and departments were involved in this process, and everything went through as planned. It is a positive change that helps us expand the residential program. Please keep in mind that we now follow the Daytona Beach campus' processes and policies as other Ph.D. programs on the campus.

We had another a successful Ph.D. Residency in August 2022 on the Daytona Beach campus with 35 Ph.D. students attending in person. The students participated in various activities, including the poster session, keynote speaker, dissertation defense, round tables with graduates and dissertation chairs, program policies, writing sessions, statistics and methodology, and meeting with advisors. Many thanks to Flavia Danskines, Katie Esguerra, BeeBee Leong, and our graduate assistants, Shivane Cannon-Patron, Cristhian Padilla, Sang-A Lee, and Angel Wang, for their support in making everything go smoothly.

We were honored to have Dr. Nicklas Dahlstrom as our Keynote Speaker. Dr. Dahlstrom is the Human Factors Manager at Emirates Airlines. In this position, he has overseen Crew Resource Management (CRM) training in a rapidly expanding airline and has also been part of efforts to integrate Human Factors into the organization. His presentation was really inspiring, and he challenged our students to think out of the box, which is critical in a successful dissertation. I would like to thank him for his time, shared knowledge, and encouragement.

The poster session attracted the great attention of all students, faculty, and administration. All students actively participated in the poster session, engaged in discussions, and shared feedback. It was a great learning experience. I would also like to thank the poster committee for their diligent work and support. The three poster winners are James Cline (DAV 701), Lana Laskey (DAV 702), and Mike Pettit (DAV 703). Congratulations to James, Lana, and Mike for their outstanding work!

At this Residency, we brought back one interesting activity, an actual dissertation defense. Current students had a chance to witness how an actual dissertation defense was conducted, observe the rigor of a complete dissertation, and ask questions. It was a very useful experience, especially for new students to see the end result and learn from it. Dez Silagyi had done a great job and successfully completed his defense. Congratulations, Dr. Silagyi!

As you know, quality scholarly writing is critical for a successful dissertation. I would like to thank Dr. Chris Johnson for leading the Writing Improvement Group (WIG) initiative, which provides support for our Ph.D. students in improving their writing skills. We look forward to the successful outcomes of this initiative.

I am also pleased to announce that as of November 2022, we have 63 Ph.D. graduates. It is a significant achievement for a Ph.D. program. I would like to thank our COA and SGS leadership, faculty, and staff for their continued support of the Ph.D. in Aviation.

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Ph.D. in Aviation News

Dothang Truong



○ Doctoral Medallion Ceremony

We held our semi-annual Doctoral Medallion Ceremony for our 2022 Graduates on December 14th, in the College of Aviation's Atrium. Provost Lon Moeller kicked off the event, followed by Dr. Steven Hampton, Dr. Alan Stolzer, and Dr. Dothang Truong. Four graduates were able to attend along with their families. Please join me in congratulating Drs. Robert Allen, Agatha Kessler Fentress, Dezsö Silagyi, and Mark Simpson.

Dean Stolzer and the dissertation chairs performed the hooding ceremony at the Daytona Beach Ocean Center on December 15, 2022. President P. Barry Butler and Provost Lon Moeller participated and congratulated the graduates on their distinguished academic achievements. Faculty, Staff, and family were also there to support our graduates. Congratulations to Drs. Robert Allen, Agatha Kessler Fentress, Dezsö Silagyi, David Burgess, and Mark Simpson.



Ph.D. in Aviation graduate, Dr. Robert D. Allen presented his dissertation, "Pilot Perception of Cockpit Organizational Framework's Impact on Flight Safety and Subordinate Pilot Behavior" on Thursday, September 2, 2021, in SIM 204, on the Daytona Beach campus. Dr. Andrew R. Dattel, Associate Professor of Graduate Studies, chaired the committee.



Ph.D. in Aviation graduate, Dr. Agatha Kessler Fentress presented her dissertation, "Commercial Short-Haul Flight or Autonomous Mobility-On-Demand: Modeling Air Passengers' Modal Choice", on Wednesday, July 6, 2022, in COA 205, on Daytona Beach campus. The committee was chaired by Dr. Dothang Truong, Professor of the School of Graduate Studies.



Ph.D. in Aviation graduate, Dr. Dezsö Silagyi presented his dissertation, "Prediction of Severity of Aviation Landing Accidents Using Support Vector Machine Models", on Wednesday, August 17, 2022, in COB 119, on the Daytona Beach campus. The committee was chaired by Dr. Dahai Liu, Professor of the School of Graduate Studies.



Ph.D. in Aviation graduate, Dr. Mark J. Simpson presented his dissertation, "A Risk Minimization Model for Post-Disaster Medical Delivery Using Unmanned Aircraft Systems", on Wednesday, May 11, 2022, in COA 205, on Daytona Beach campus. The committee was chaired by Dr. Dothang Truong, Professor of the School of Graduate Studies.



Visit the [Ph.D. in Aviation's Microsoft Stream](#) site (University log-in required) to watch the defenses.

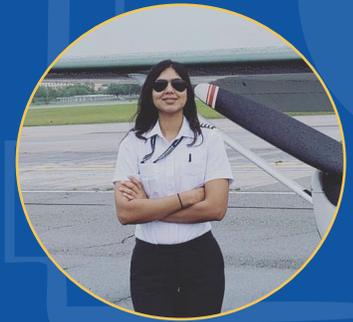
MS IN AVIATION NEWS

Dr. Donald Metscher

Program Coordinator



Join me in congratulating the Fall 2022 graduates: Pooja Amonkar, Shivane Cannon-Patron, Sophie Chanoux, Stacy Eisen, Nikhil Khale, Yu Jin, Shlok Misra, and Sergey Shepelev.



Shivane Cannon-Patron

Our student enrollment remains strong, and we are expecting an increase in the number of new students beginning with the Spring enrollment.

Cognitive Engineering Research in Transportation Systems (CERTS) Lab

Since 2014, the Cognitive Engineering Research in Transportation Systems (CERTS) Lab has been conducting research in human factors, training, attention allocation, inattention blindness, virtual reality, human performance, and situation awareness. Our research is funded and non-funded. In addition several students have collected data in our lab for their GCPs, theses, and dissertations. Our new home is in Room 101 of the Tomcat Building. The CERTS Lab is equipped with three flight simulators, a driving simulator, a desktop en-route air-traffic control simulator, and several tools that can measure personality, working memory, heart rate, respiration rate, and brain activity. The CERTS Lab has produced several published articles and our research has been presented at several conferences throughout the country.



The CERTS Lab would not be successful without the wonderful undergraduate and graduate research assistants. Feel free to contact the lab director, Andy Dattel, Ph.D., Associate Professor in the School of Graduate Studies, at andy.dattel@erau.edu to schedule a visit.

 386.323.5061

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MS in Aviation News





MSOSM NEWS

Dr. Mark Friend

Program Coordinator

The Master of Science in Occupational Safety Management (MSOSM) is preparing to finish the year with approximately 30 students in the program. The department is working to actively recruit new students to help its program reach its full potential.

Applied Training:

Students in the Master of Science in Occupational Safety Management (MSOSM) recently completed a 40-hour HAZWOPER training course, designed for individuals involved in clean-up operations, emergency response operations, and storage, disposal, or treatment of hazardous substances or uncontrolled hazardous waste sites.



Individuals exposed at or above permissible exposure limits (PELs), who work on sites requiring respirators for more than 30 days out of the year and those who supervise any of these individuals are also required to take this course. It was taught by Carlos Olmeda, an authorized trainer for Sustainable Workplace Alliance (SWA) and his assistants. The department plans to make this course available to all MSOSM students each academic year.

☎ 386.226.7747

📍 D-COA 118





MSUS NEWS

Dr. Scott Winter

Program Coordinator

An exciting aspect open to students in the MSUS program is a study abroad program hosted by Drs. Dan Macchiarella and Kevin Adkins. This program is offered either domestically or internationally. Students completing this study abroad may be able to use the credits as a course substitution or as an open election. Please consult me regarding these options for your individual plan of study. This experience offers students a unique, hands-on experience operating sUAS in various capacities.

From this past summer, Dr. Macchiarella provides some highlights related to the experience below. For the summer of 2023, the team is planning an event down in Argentina. Please contact Dr. Macchiarella or Dr. Adkins for more information about this exciting opportunity!

UAS Operations in Southwest USA Summer 2022

Students and faculty spent three weeks in New Mexico and Arizona participating in a Study America Program. The program participants included 13 students from the Daytona Beach campus and one from Prescott's campus. Five of the students are enrolled in the M.S. in Unmanned Systems. Faculty leading the program were Dan Macchiarella and Kevin Adkins.

UAS remote sensing of prehistoric and historic locations was the focus of the work. In the prehistoric realm of time, ancient agricultural regions and dwellings ranging back in time to 2000 BC were examined near Tularosa, New Mexico, and Safford, Arizona. At a more modern operational location—dated to 1540—Francisco Vázquez de Coronado camped during his two yearlong foray into the southwest.

At all locations, the team collaborated with archaeologists who directed areas to be imaged. Sensors included LiDAR, RGB cameras, multispectral cameras, and thermal near-infrared cameras. The work resulted in 8000+ images and gigabytes of LiDAR point clouds.

Data analysis is ongoing. The hope is to discover new humanmade features and better help clarify the complex inhabitation of the American Southwest.



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MSUS News





International Astronautical Congress (IAC)

Many of our SGS M.S. in Aeronautics and M.S. in Aviation students attended the 73rd International Astronautical Congress (IAC) in Paris, France, from September 18-22. Magdalena (Maggie) Allen, Takafumi (Taka) Fukuzawa, Sakurako Kuba, and Kayla Taylor were encouraged to submit research abstracts during Dr. Sara Langston's Spring 2022 Advanced Space Law and Policy course. Every student, including Dr. Langston, received invitations to present their research based on these original abstracts. Their research topics addressed various developments in the aerospace community, such as spaceflight participant safety, space traffic management, and mega-constellation policy. The 74th IAC will be held in Baku, Azerbaijan, from October 2-6, 2023. We encourage all SGS students to submit their research abstracts for consideration! (Photo: Kayla Taylor & Dr. Bill Nye)



SouthOn & SERRS Symposium

A group of our MSOSM students attended the SouthOn & SERRS Symposium in March 2022. The purpose of the meeting was to bring emerging researchers from across the region together to share results, spark ideas and encourage collaboration. Each consulting team visited local manufacturing facilities to advise them on improvements in their overall safety programs and then presented their results to attendees in a poster session. (Photo: Collins Maude)



UAA's Annual Collegiate Aviation Education Conference

Congratulations to Ph.D. in Aviation student Hui (Angel) Wang, Cohort 14, who received 2nd place in the 2022 University Aviation Association Student Research Poster Contest at UAA's Annual Collegiate Aviation Education Conference. Angel's award-winning poster was titled "Effectiveness of Cybersecurity Training on Identifying Cyber Threats in Air Traffic Control". (Photo: Hui (Angel) Wang)



Aerospace Human Factors Association (AsHFA)

U.S. Air Force Maj. Elizabeth Combs, a student in the Ph.D. in Aviation program (Cohort 12), received the William E. Collins Award from the Aerospace Human Factors Association (AsHFA). Combs won the annual award for her article, "Physiological and Cognitive Performance in F-22 Pilots During Day and Night Flying," which was published in the May 2021 edition of Aerospace Medicine and Human Performance. The Collins Award is presented annually for the outstanding Human Factors publication of the year. Publications are limited to peer reviewed papers.

Combs' research investigated the changes in physiological markers of stress and cognitive performance as F-22 pilots transitioned from day flying to night flying. Results of the study, which examined data from 17 F-22 pilots, suggest day flying elicits more of a stress response; however, a larger sample size is required to verify the results. (Photo: Elizabeth Combs & Dr. Musselman)

○ Eagle Influence



Landscape of Unmanned Systems

In a recent article in Washington State Magazine, ERAU graduate, Dr. David Thirtyacre highlights how important it is for institutions to evolve continually to keep up with the ever-changing landscape of unmanned systems. "Every one of the faculty is a pilot," Thirtyacre says. "Students are trained to not only fly, but to do it precisely and accurately. Going from manned aviation to unmanned is totally different." Read the article - [Tunnel Visions](#).

We are also pleased to announce that Dr. Thirtyacre's dissertation was recently published in the Air and Space Operations Review Journal. [Remotely Piloted Aircraft C2 Latency during Air-to-Air Combat \(PDF\)](#)

Ph.D. Residency Poster Session Winners

As with previous residencies, attending students participated in a poster session, producing a superb educational experience. I want to thank Dr. Dahai Liu, Chair of the poster committee. A special thanks to the committee members, Steve Anest, and the SGS staff for their expertise, service, and feedback. The three poster winners are James Cline (DAV 701), Lana Laskey (DAV 702), and Mike Pettit (DAV 703).



Jim Cline with his award for the best DAV 701 poster.



Lana Laskey with her award for the best DAV 702 poster.



Michael Pettit with his award for the best DAV 703 poster.



Dissertation Defenses

Many of our Ph.D. in aviation students successfully defended this past year. Please join me in congratulating the following students: Danita Baghdasarin, Sarah Talley, Brian Musselman, Heidi Kim, Dez Silagyi, Agatha Kessler Fentress, David Burgess, and Mark Simpson. You can watch the videos of the dissertation defenses on [Microsoft Stream](#) (ERNIE login is required). Also, join us in congratulating Shlok Misra, MS in Aviation student, for his successful thesis defense this semester.

Scholarly Activity

Associate Dean for Research



Please join us in congratulating Dr. Scott Winter on his appointment to the position of Associate Dean for Research. In his new role, Scott will join the COA leadership team and provide strategic direction and operational oversight of our research enterprise. We are confident he'll bring the energy, enthusiasm, and a solid vision for research that will move us forward. (Photo: Dr. Scott Winter)

Frank E. Sorenson Award



Please join us in congratulating Dr. Dothang Truong, who received UAA's Frank E. Sorenson Award for outstanding achievement of excellence in aviation research and scholarship. Standing with Dr. Dothang Truong are Dr. Steven Hampton and Dr. Jonathan Velasquez, who also attended the annual UAA conference in Colorado Springs, CO, in October 2022. (Photo: Dr. Jonathan Velasquez, Dr. Dothang Truong, and Dr. Steven Hampton)



Aviation Week Essay



In his latest "Aviation Week" essay, Embry-Riddle Aeronautical University President P. Barry Butler, Ph.D., describes efforts to advance aviation data analytics — a rapidly growing field aimed at saving lives and preventing accidents. Ultimately, "Our goal university-wide will be to leverage predictive analytics. In particular, we aspire to predict the likelihood of aviation incidents, such as unstable approaches, runway incursions, and loss of control," he writes. The article features commentary from Dr. Alan Stolzer, Dr. Dothang Truong, Dr. Marisa Aguiar, and Dr. Edwin Odisho. (Photo: Dr. Marisa Aguiar)

Best Paper Award



Join us in congratulating Dr. Dahia Liu for receiving the Best Paper Award from IEEE GLOBECOM 2021. Dr. Liu's paper title is "Blockchain Enables Secure Authentication for Unmanned Aircraft". (Photo: Dr. Dahia Liu)

University Aviation Association's Fall Education Conference



One of the most difficult things is teaching effective decision-making in collegiate aviation. That was one of the topics on Day three of the University Aviation Association's Fall Education Conference. Dr. Baker and Dr. Velazquez were honored to participate in an illustrious panel on optimizing decision-making and human performance in aviation. Many thanks to moderators doctors Kristy Kiernan and David Cross.



Scholars in Research

Sang-A and Hui (Angel) are SGS's two residential Ph.D. students and graduate research assistants (GRA) in the Ph.D. in Aviation Program at Embry-Riddle Aeronautical University (ERAU). Both are also M.S. in Aviation (MSA) graduates at ERAU Daytona Beach Campus with a GPA of 4.0. Angel is a B.S. in Air Traffic Management (ATM) graduate from ERAU, and Sang-A is a Bachelor in Aviation Management graduate from Massey University, New Zealand. Both students have experience in study abroad programs. Sang-A was an exchange student at ERAU from New Zealand. Angel became motivated about research after completing an ATM project during a study abroad program as an undergraduate student. Angel's research interests focus on human factors, human performance, ATM, training, and aviation safety. She has been managing the Cognitive Engineering Research in Transportation System (CERTS) lab as a GRA for more than two years and was hired as a full-time GRA during the school year of 2021.

During the years of being a GRA, Angel's competencies in research have allowed her to present at several international conferences, produce two book chapters, and work on a few publications. Recently, Angel presented and published her thesis topic, "Assessing Air Traffic Controllers' Stress and Performance with UAV Integration in Future Air Traffic Management," at the Human Factors and Ergonomics Society (HFES) 66th Annual Conference. Her outstanding accomplishment and skills have led her to be appointed as the Student Engagement Leader of the HFES Training Technical Group. In addition, she won an award for her poster submitted to the University Aviation Association (UAA) Conference, titled "Effectiveness of Cybersecurity Training on Identifying Cyber Threats in Air Traffic Control." Angel is now working with Dr. Barbara Holder on a project about the pilot go-around procedures and training.

Sang-A was a graduate teaching assistant (GTA) for the MSA program. As a GTA, she mentored and guided students in graduate-level statistical analysis courses and research writing. Her research journey started in 2019 as a research assistant for studies related to evacuation efficiencies. Her master's thesis also concentrated on the effects of carry-on baggage on aircraft evacuation efficiency. Her passion for research was rewarded by receiving the College of Aviation (COA) Philanthropy Council Project Funds, COA Dean's Scholarship Fund, and an outstanding student award. Last year, she started working in the Federal Aviation Administration's Alliance for System Safety of UAS Through Research Excellence (ASSURE) projects, assisting Dr. Ryan Wallace. In August 2022, she also started a new role as a facilitator of the Writing Improvement Group (WIG) to help graduate students. She is also involved in various research projects with COA faculty members.

Angel and Sang-A hope to continue contributing to more valuable research and achieving their professional goals as superior scholars in research and teaching in the aviation industry.

Publications

Dr. Dothang Truong

Truong, D. (2022). Predicting the Impact of COVID-19 on Air Transportation Volumes. *AIAA AVIATION 2022 Forum*, June 10, 1-13. <https://doi.org/10.2514/6.2022-3223>

Lamb, T., Myers, P., & Truong, D. (2022). Small unmanned aircraft operator perceived risk factors in the VMUTES model. *Journal of Air Transport Management*, 103(102243). <https://doi.org/10.1016/j.jairtraman.2022.102243>

Saini, A., Truong, D., & Pan, J. (in press). Airline efficiency and environmental impacts – Data envelopment analysis. *International Journal of Transportation Science and Technology*. <https://doi.org/10.1016/j.ijtst.2022.02.005>

Truong, D. & Truong, M.D. (2022). How do customers change their purchasing behaviors during the COVID-19 pandemic? *Journal of Retailing and Consumer Services*, 67(10296). <https://doi.org/10.1016/j.jretconser.2022.102963>

Truong, D. & Truong, M.D. (2022). Impacts of daily travel by distances on the spread of COVID-19: An artificial neural network model. *Transportation Research Record*. <https://doi.org/10.1177/03611981211066899>

Odisho, E., Truong, D., & Joslin, B. (2022). Applying machine learning to enhance runway safety through runway excursion risk mitigation. *Journal of Aerospace Information Systems*, 19(2), 98–112. <https://doi.org/10.2514/1.1010972>

Dr. Christopher Johnson

Johnson, C. (2022, September 19-22). *A Literature Review of Simulation Fidelity and Transfer of Training for Autonomous Vehicles* [Conference session]. Future Force Capabilities Conference & Exhibition, Austin, TX, United States.

Dr. Dahai Liu & Sang-A Lee (Graduate Research Assistant)

Yang, Y., Yu, J., Liu, D., Lee, S. A., Namilae, S., Islam, S., ... & Song, H. (2022). Multi-Agent Collaboration for Emergency Evacuation Using Reinforcement Learning for Transportation Systems. *IEEE Journal on Miniaturization for Air and Space Systems*. <https://doi.org/10.1109/JMASS.2022.3210531>

Dr. Andrew Dattel & Hui Wang

Wang, H., Dattel, A. R., Mummert, E., & Haris, S. M. (2022). Assessing air traffic controllers' stress and performance with UAV integration in future air traffic management. *Proceedings of the 2022 Human Factors and Ergonomics Society 66th International Annual Meeting*, 38. <http://doi.org/10.1177/10711813222661332>.

Grants Awarded

Dr. Christopher Johnson

Johnson, C. (Principal Investigator). (2022-2022). AI-Assisted and Targer Recognition (AIDTR) – Phase III (Project No. 1990792–456971) [Grant]. Carnegie Mellon University.

Dr. Mark Friend

Friend, M. A. (Principal Investigator). (2022–2023). *Sunshine Education and Research Center* (Project No. 6420-1011-00-A) [Grant]. Department of Health and Human Services.

Dissertation Defense

Burgess, H. (2022). *A Constructivist Grounded Theory Study of Airfield Lighting Maintenance Management Strategy* [Unpublished doctoral dissertation]. Embry-Riddle Aeronautical University.

Simpson, M. (2022). *A Risk Minimization Model for Post-Disaster Medical Delivery Using Unmanned Aircraft Systems* [Unpublished doctoral dissertation]. Embry-Riddle Aeronautical University.

○ SGS Contact

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