EMBRY-RIDDLE AERONAUTICAL UNIVERSITY | COLLEGE OF AVIATION

SCHOOL OF GRADUATE STUDIES

NEWSLETTER

MESSAGE FROM THE DEAN

Dr. Alan Stolzer

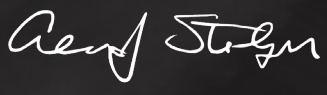
I could not be prouder of the College of Aviation. This semester, together, we did the unheard-of. Our college successfully achieved our mission of continuing to deliver high-quality aviation education—in the midst of a global pandemic—by:

- Transitioning 300 sections of 120 residential courses to an online environment, essentially overnight.
- Receiving 'FAA deviations from policy' in record time to teach ground schools, dispatch, and aviation maintenance science courses online; in some cases, in as little as 2.5 hours. My hat is off to the FAA for its remarkable responsiveness.
- Enlisting support of our amazing Center for Teaching and Learning Excellence (CTLE) team.
- Leaning on our colleagues at Worldwide and Prescott. Synergy and collaboration do work!
- Developing a system of supporting faculty who were the least comfortable with the transition.
- Systematically reaching out to students who were least responsive in the online world to offer support.
- Developing extensive protocols for reopening flight, maintenance, and other areas, as conditions warrant.
- Using the opportunity to refine procedures, checklists, videos, training aids, and a host of other items with our expert resources.
- Maintaining a positive attitude—the Eagle spirit!

I would like to thank President Butler and his leadership team as they continue to make critical decision that affect us all. This is not easy, there is no playbook, and we need to get it right.

The deans of the ERAU colleges of aviation are launching an Aviation Outlook webinar series to educate and inform students, prospective students, alumni, and others about the road ahead. I hope you will tune in to our first webinar on May 13th at 6 p.m. with ERAU alum Jeff Knittel, CEO of Airbus Americas. This is a terrific opportunity to hear from industry leaders on aviation's recovery and beyond.

Most of all, thank you to our faculty, staff, and students who have shown exceptional character, resilience, creativity, and caring for one another during this time. I am inspired by the human spirit you have displayed. We will get through this, the aviation industry will rebound, and we will all be stronger as a result. Our future remains bright.



MESSAGE FROM THE ASSOCIATE DEAN

Dr. Steven Hampton

It's hard to believe how much has changed since our last newsletter in December 2019. The dawning of 2020 has ushered in a period of sea change that is testing us all. Such uncertain and challenging times require more communication than ever. The SGS Newsletter is and will continue to be one of the ways we communicate and celebrate the important activities and accomplishments of our immediate SGS family (students, faculty, staff) and extended family (alumni, adjunct faculty, loved ones).

The new year began great with the MSOSM program expanding enrollment in the Spring 2020 term, the university approving our new Master of Science in Unmanned Systems (MSUS) degree, our faculty earning awards and promotions, and our students receiving degrees and special recognition. Dr. John Robbins is now serving as program coordinator for both the graduate and undergraduate programs in unmanned systems. He was selected for the 2020 Dean's Leadership Service Award! Dr. Andy Dattel was promoted to Associate Professor with tenure! Both faculty members are valuable assets to SGS and we are proud of their distinguished accomplishments.

Please join me in congratulating Drs. Sabrina Woods, Lakshmi Vempati, Edwin Odisho, Rachelle Strong, and Susan Archer on their successful dissertation defenses and Rahim Agha on his successful thesis defense! We also want to congratulate to the students selected by the SGS faculty for the 2019/2020 Outstanding Student awards: Stephanie Fussell (Ph.D. in Aviation), Rahim Agha (MSA), and Michael Shekari (MSOSM). All of these students exemplify the best in academic achievement and service to their colleagues and SGS.

Florida's stay-at-home and social distancing orders required wide-spread adjustments for the university and most residential programs. Fortunately, we have the tools and personnel to offer high-quality distance learning. Over the Spring break, all of the SGS residential courses were migrated to online delivery in Canvas, our learning management system. I want to thank our MSA and MSOSM faculty for ensuring their students were able to complete their courses with minimal interruption or hardship. Although the Ph.D. in Aviation program is always delivered in Canvas, the policy for the Ph.D. Qualifying Exam had to be revised to permit online assessment and the policies for the dissertation and thesis defenses had to be revised to enable video conference defenses. I want to recognize the efforts of Dr. Dothang Truong and Dr. Don Metscher in formulating these policy changes and supervising their implementation so our students can progress and graduate as planned. For students in our master's programs, the faculty will be teaching Summer A and C Term classes online. Determination about Summer B will be made in the coming weeks. For students planning to attend the Ph.D. in Aviation residency, we will let you know by the end of May if it will be held on the Daytona campus or online and what technologies and approaches will be implemented.

Rest assured we will remain vigilant and pivot as necessary to ensure all of our students can continue to accomplish their educational goals as expeditiously and safely as possible. Thank you for your cooperation. I look forward to seeing everyone on campus in the near future. In the meantime, stay safe.

Steven Hampton

SCHOLARLY ACTIVITY

RESEARCH GRANTS

Dr. Dahai Liu

(Co-Principal Investigator). (2020-2021). *Epidemiological models for transportation applications: Secondary crashes* [Grant]. UTC-CATM. ($100,000)

(Co-Principal Investigator). (2020-2021). *Discrete dynamics and epidemiological multi-physics models for transportation applications* [Grant]. UTC-CATM. ($99,885)

(Principal Investigator) (2020-2021). *Multi-scale and collaborative hazard evacuation planning frameworks* [Grant]. UTC-CATM. ($99,999)

PUBLICATIONS • PRESENTATIONS

Aguiar, M., Cuevas, H. M., & Piccone, C. (2020, March 2-4). *Application of a skill taxonomy in aviation* [Paper presentation]. National Training Aircraft Symposium (NTAS), Daytona Beach, FL.

Islam, S., Namilae, S., Prezenica, R., & Liu, D. (in press). Epidemiological modeling and optimal control. PLOS ONE.

Kirkpatrick, K. S., Rivera, K. K., Aguiar, M., Stevenson, L., & Cuevas, H. M. (2020, March 2-4). *Gender differences in factors influencing retention in aviation* [Paper presentation]. National Training Aircraft Symposium (NTAS), Daytona Beach, FL.

Liu, D., & Deng, X. (2020) Investigating the strategy on path planning on aircraft evacuation process using discrete event simulation. *Mobile Networks and Applications.*

McCullins, M. (2019, December). The evolution of pilot training. *Air Pilot*, 36, 27-32. https://www.airpilots.org/file/3092/2019-december.pdf

Milner, M. N., Winter, S. R., Mehta, R., Rice, S., Pierce, M., Anania, E., Candelaria-Oquendo, K., Garcia, D., & Walters, N. (in press). Patient perceptions of interactive mobile health care apps: A predictive model. *International Journal of Healthcare Technology and Management.*

Neal, J. G., Fussell, S. G., & Hampton, S. (in press). Research recommendations from the airplane simulation transfer literature. *Journal of Aviation/Aerospace Education and Research*. Embry-Riddle Aeronautical University.

Pan, J., & Truong, D. (2020, April). Low cost carriers in China: Passenger segmentation, controllability, and airline selection. *Transportation*,1-26. https://doi.org/10.1007/s11116-020-10105-z

Pan, J., & Truong, D. (2020). Low-cost carriers versus high-speed rail: Understanding key drivers of passengers' choice in China. *Transportation Journal, 59*(1), 1-27. https://doi.org/10.5325/transportationj.59.1.0001

Quirion, N., & Liu, D. (in press). Effect of sensor sensitivity on autonomous aerial vehicle target localization task performance using reinforcement learning. *Unmanned Systems.*

Ragbir, N. K., Rice, S., Winter, S. R., Choy, E. C., & Milner, M. N. (2020). How weather, distance, flight time, and geography affect consumer willingness to fly in autonomous air taxis. *Collegiate Aviation Review International, 38*(1), 69-87.

Rice, S., Winter, S. R., Capps, J., Trombley, J., Robbins, J. Milner, M. N., & Lamb, T. L. (2020). Creation of two valid scales: Willingness to fly in an aircraft and willingness to pilot an aircraft. *The International Journal of Aviation, Aeronautics, and Aerospace, 7*(1), 1-21.

Wang, K., Liu, D., Yu, J., Lee, S., & Namilae, S. (in press). Effects of group travel behavior and instruction on the efficiency of evacuation during an emergency. *Proceedings of the Annual Institute of Industrial and Systems Engineers (IISE) Conference & Expo* (IISE 2020, October 31-November 3). New Orleans.

Woo, G., Truong, D., & Choi, W. (2020, February). Visual detection of small unmanned aircraft system: Modeling the limits of human plots. *Journal of Intelligent & Robotic Systems*, 1-15. https://doi.org/10.1007/s10846-020-01152-w

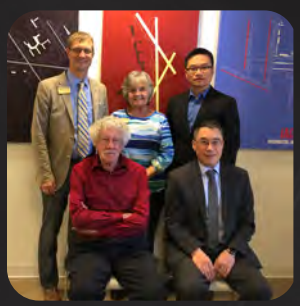
PH.D. IN AVIATION NEWS

Dothang Truong, Ph.D.

Program Coordinator

The January 2020 term marked an important milestone for the Ph.D. in Aviation program: Our 10 year anniversary! In addition to having the distinction as the first Ph.D. degree in the field of aviation, our program has achieved tremendous success and maintained top status despite growing competition. Dr. Robert (Buck) Joslin gave the first dissertation defense in June 2013 and the defense by Dr. Susan Archer in April 2020 was the 40th. Considering our degree requires a high amount of rigor and the average graduation rate in the U.S. is 50%, 40 graduates is a major accomplishment! Our alumni are impacting aviation in their successful careers as university faculty, CEOs of global aviation companies, division heads in governmental agencies, and managers at airlines and aviation organizations. Plus, as with our graduates, our students and faculty are actively disseminating new knowledge in the field through their scholarly research, publications, and presentations!

The success of our program is also due to tremendous support from our University leaders, COA and SGS administrators, and Ph.D. in Aviation faculty, staff, and residential students. And of course, it would not be possible without our students' loved ones providing them support, confidence, and motivation throughout their long journey to achieve the highest degree in the field of aviation. Thank you everyone!



Advisory Board (seated left to right): Andres Zellweger and Gregory Woo, (standing) Scott Winter, Susie Sprowl, and Dothang Truong. Not pictured: Bruce Holmes and Steven Hampton.

Our Industry Advisory Board continues to play a vital role in the Ph.D. in Aviation program. On February 21, 2020, the board met to deliberate the long-term plan for the program. We discussed our admission and marketing strategies to continue to attract qualified and diverse applicants and ways to maintain our eminence in the next 10 years and beyond. We also welcomed a new board member, alumnus Dr. Greg Woo (Graduate 21), Chief of Aviation Systems Engineering Division at Volpe National Transportation Systems Center. Many thanks to all of the board members for their expert insight, quality feedback, and strong commitment to the program!

The Ph.D. in Aviation is an online program, so our courses have run as normal. However, to accommodate students who must defend their dissertation and take the qualifying exam (QE) while social distancing and travel bans are in place, we amended the Dissertation and QE policies to enable virtual alternatives. My thanks to Dean Stolzer and Dr. Hampton for their quick support of these policy changes and to Jan Neal (MSA '07), our Production Coordinator, for swiftly designing online alternatives.

Last but not least, congratulations to Stephanie Fussell (Cohort 9) for being chosen as the Ph.D. Student of the Year! As a residential student, now a doctoral candidate, she has worked tirelessly supporting her colleagues, faculty, and the FAA Center of Excellence for Technical Training and Human Performance (COE TTHP). Well done, Stef!

Stephanie Fussell, Ph.D. Student of the Year

The success and wellbeing of our students are my priorities as program coordinator! Feel free to reach out to me, especially during this difficult time, if you have any questions, concerns, or requests. I'm here to help. Thank you for your ongoing program support!

DISSERTATION DEFENSES

Congratulations to Sabrina Woods, Ph.D., (Graduate 36) for her successful defense on January 22, 2020 titled: *Assessing if Motivation Impacts General Aviation Pilots' Persistence in Varying Weather Conditions.* Thanks to her committee (left to right): Dr. Steven Hampton, Dr. Scott Winter (Chair), [Dr. Sabrina Woods], Dr. Stephen Rice.

Congratulations to Lakshimi Vempati, Ph.D. (Graduate 37) for her successful defense on January 27, 2020 titled: *Pilots' Willingness to Operate in Unmanned Aircraft System Integrated Airspace.* Thanks to her committee (left to right): Dr. Frank Ayers, Dr. John Robbins, [Dr. Lakshimi Vempati], Dr. Scott Winter (Chair), Dr. Stephen Rice.

Congratulations to Edwin Odisho, Ph.D. (Graduate 38) for his successful defense on February 27, 2020 titled: *Predicting Pilot Misperception of Runway Excursion Risk Through Application of Machine Learning Algorithms of Recorded Flight Data. Thanks to his committee (left to right):* Dr. Dothang Truong (Chair), Dr. David Esser, [Dr. Ed Odisho], Dr. John Robins.

Congratulations to Rachelle Strong, Ph.D. (Graduate 39) for her successful virtual defense on April 16, 2020 titled: *Pilot Acceptance of Personal, Wearable, Fatigue Monitoring Technology: An Application pf the Extended Technology Acceptance Model.* Thanks to her committee (top left to right): Dr. Alan Jacobssen, Dr. Scott Winter, Dr. Dahai Liu (Chair), [Dr. Rachelle Strong], Dr. John Robbins, Dr. Dothang Truong.

Congratulations to Susan Archer, Ph.D., (Graduate 40) for her successful virtual defense on April 24, 2020 titled: *Organizational Design of Secondary Aviation / Aerospace Engineering Career Education Programs.* Thanks to her committee (top left to right): Dr. Thomas Serwatka, Dr. Dothang Truong, Dr. Mike Wiggins, Dr. Soumia Ichoua, Dr. Dave Esser (Chair), [Dr. Susan Archer].

LIFE-LONG LEARNER

Residential Ph.D. in Aviation student, Tracy Lamb is truly a life-long learner.

"In 25 years in commercial aviation, I've logged over 7,000 flight hours and worn many different hats. I was a Boeing 737 pilot for an International Airline, a CFII, a charter pilot in the Australian outback and Asia Pacific, and a corporate jet pilot flying to Papua New Guinea, Vanuatu, Fiji, and the Christmas and Cocas Islands. In addition to flying to awesome places, I've flown all sorts of passengers, even actor Mathew McConaughey!

Tracy Lamb flying *shark patrol* off the coast of Queensland, Australia.

My focus shifted to aviation safety, so I became a certified ISO 9000 Lead Auditor, responsible for supervising quality management system audits. I gained valuable Aviation Safety Management Systems (SMS) experience through leading and conducting operational safety audits and inspections of fixed-wing and rotary aircraft operators in business and commercial aviation.

As soon as unmanned aircraft systems (UAS) took off, I earned pilot licenses in the U.S. and Australia, becoming the 109th UAS pilot in Australia. I've had some exciting experiences in 5 years flying commercial UAS missions in Australia and Europe; several involved venomous brown snakes and wild emus. I spent 3 years leading development of unmanned inspection capabilities in many different countries. This work led to service on the ICAO RPAS Panel, the Aviation Rule Making Committee, the FAA Unmanned Aircraft Systems Safety Team, and the ICAO Unmanned Aircraft Systems Advisory Group on Unmanned Traffic Management.

Tracy Lamb, Senior First Officer, prepares for flight in a Boeing 737-NG.

My UAS, SMS, and commercial flight experiences and expertise opened the door for me to become both the Vice President of Regulatory and Safety Affairs and Chief Pilot of the Remote Pilots Council for the Association of Unmanned Aircraft Systems (AUVSI). I led development of the first operational safety certification program for commercial unmanned aircraft systems, called the Trusted Operator Program (TOP). Many training organizations and commercial operators have adopted TOP. In fact, ERAU was the first academic institution to receive this certification from AUVSI. So this is how I landed here, at ERAU, on final approach to completing my Ph.D. in Aviation specializing in Safety. It's another dream come true!"

MSA NEWS

Donald Metscher, D.B.A.

Program Coordinator

It's an understatement to say 2020 has been tough on everyone so far. The Master of Science in Aeronautics program adminstration and faculty genuinely appreciate our students' patience and resilience! Our Spring courses were quickly converted to the online format immediately following the Spring break. The Summer A scheduled classes are also being converted to online to allow our students to continue with the program. Even though we are all working remotely, know that you can always reach out to us if you have any questions or concerns. We are working harder than ever to meet the educational needs of all of our students!

Eleven students participated in the hooding/commencement ceremony for the Fall 2019 graduation. Four students graduated with distinction (4.0 GPA): Mark Dellorto, Madhur Bharat Gupta, Giri Pratomo, and Godfrey Valencio D. Souza. Congratulations Fall 2019 grads! We are proud of what each of you have accomplished and wish you all continued success as ERAU alumni—*Forever Eagles*!

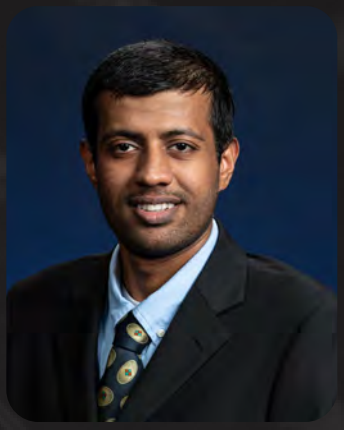
Fall 2019 graduating class (left to right): [Dr. Haydee Cuevas], [Dr. Dahai Liu], [Susie Sprowl], Giri Pratomo, [Dr. Andy Dattel], Ricardo Agusto Aquilla, Andrew Patrick Henry, Alex Shin, Godfrey Valencio D Souza, Alex Michael Ortega, [Bee Bee Leong], Mark Dellorto, [Dr. Don Metscher], Beathia Tagoe, Carlos Daniel Aguilar-Velin, [Dr. Scott Winter], Sojeong Choi, Madhur Bharat Gupta, [Dr. Steven Hampton]. Graduates not pictured: Huaxing Gou, Zhe Huang, Yuxin Li, Uzoma Nwachukwu, Kazimierz Ryder, Vishnu Vaikathusseril Ravindrana.

MSA STUDENT OF THE YEAR

We also want to extend our congratulations to Rahim Agha for being awarded MSA Student of the Year! In addition to this outstanding achievement, he recently defended his thesis in which he identified the effects startle and surprise have on commercial pilots with single and multi-engine ratings.

Rahim has been a great asset to the MSA program! He has worked the last two years as the MSA Graduate Teaching Assistant helping faculty and students with the MSA 662: Statistics for Aviation course and the MS 691: Graduate Capstone course. He has been a tremendous help to students needing to hone their statistics and APA writing skills.

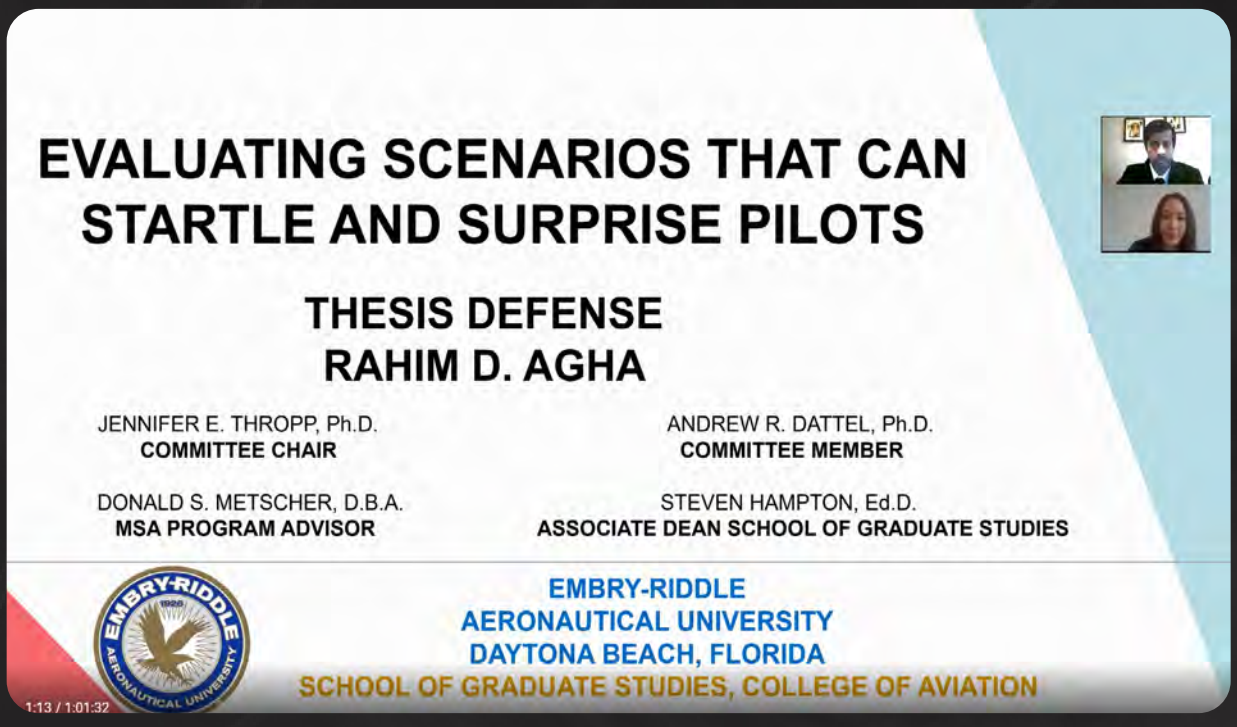
He has also received several job offers and was admitted into the Ph.D. in Aviation program. We appreciate everything he has done for the MSA program, faculty, and students and wish him continued success in his future endeavors!



Rahim Agha

THESIS DEFENSE

Rahim Agha successfully defended his master's thesis on April 13, 2020. Although this was the first virtual MSA defense ever held, everything went smoothly and Rahim did a great job rising to the challenge of presenting and defending his research remotely. His research committee was chaired by Dr. Jennifer Thropp (picture inset below) and his committee member was Dr. Andy Dattel. Congrats again, Rahim!



UNITED AIRLINES INTERNSHIP

Kevin Konvit, an MSA student specializing in Aviation Safety Systems, is all smiles in the cockpit with United Airlines Captain Kirk Zwiling (left) and First Officer Mike Bagma (right) during a Fall 2019 internship with the airline. While interning with United Airlines in Flight Operations, he was assigned to the Chief Pilot's office in Newark to learn the day-to-day operations of what is one of their key hubs. United's Newark hub, home to some of the best flying, offers flights to five of the seven continents and connecting flights to six.

"One major project I was tasked with was the redesign of their challenge coin. It took three months of design remakes to satisfy all managers and chiefs in the suite. Once the coin was finalized, the Newark chief took the prototype to Chicago where the chief pilot requested a design for Chicago. It is rewarding to know this internship allowed me to leave a "mark" with United for many years to come. As a thank you for everything I accomplished with the company, the chief pilot and flight managers presented me with the prototype of the challenge coin I designed.

Challenge coin designed by Kevin Konvit during his United Airlines internship.

Soon after finishing my MSA degree, I'll have accumulated enough flight hours to be eligible for a Restricted-Airline Transport Pilot Certificate. At that time, I hope to be in the United Airlines Aviate program, transitioning to one of their regional partners. My goal is to secure a dual function within United as a line pilot and as a flight-qualified manager."

MSOSM NEWS

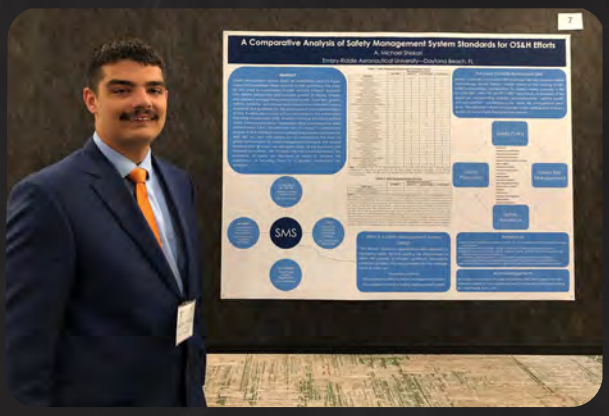
Mark Friend, Ed.D.

Program Coordinator

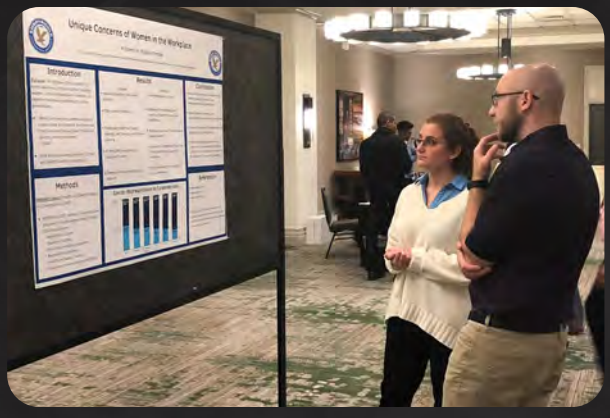
The MSOSM program is growing and gaining more recognition! Currently, there are 10 students seeking this degree. The program recently attained the status as a Board Certified Safety Professionals (BCSP) Qualified Academic Program (QAP) and graduates are eligible to apply for the BCSP Graduate Safety Practitioner® (GSP) designation. The GSP designation is an alternate path to the Certified Safety Professional® (CSP), waiving the requirement to sit for the ASP exam.

Mike Shekari was selected as MSOSM Student of the Year! He has worked hard as a graduate assistant in the program, and has helped with multiple efforts on behalf of the program. He has also been active as part of the National Institute for Occupational Safety and Health (NIOSH) grant through the University of South Florida Sunshine ERC. He will be working as a summer intern in the Environment, Safety, Health, and Medicine, Northrop Grumman Corporation, Aerospace Systems Sector. Congratulations, Mike. Your award is well deserved!

Through the sponsorship of NIOSH and the Sunshine Education & Research Center (ERC) at the University of South Florida, Rebecca Demian and Mike Shekari traveled to Birmingham, Alabama, for the annual Southeastern States Occupational Network (SouthON) meeting and Southeast Region Research Symposium hosted by the University of Alabama at Birmingham & Auburn University. Both MSOSM students participated in the poster session. Rebecca and Michael also had the opportunity to learn from other researchers in the occupational safety and health, public health, and industrial hygiene fields.



Michael Shekari presents his research titled, *A Comparative Analysis of Safety Management System Standards for OS&H Efforts.*



Rebecca Demian discusses her research titled, *Unique Concerns of Women in the Workplace.*

MSUS NEWS

John Robbins, Ph.D.

Program Coordinator

The Master of Science in Unmanned Systems (MSUS) is a dynamic new offering within SGS and the College of Aviation at ERAU's Daytona campus. Built on the foundation of a highly successful program started by ERAU's worldwide campus, the MSUS adapts online learning to the face-to-face environment. With student success and flexibility in mind, this program offers students the unique capability to finish courses remotely (online).

The purpose of the program is to prepare future managers and leaders to meet the growing demands of the unmanned systems industry. Students will master higher level concepts in the unmanned systems field, analyze industry and company problems, perform qualitative and quantitative data analysis, and prepare recommended solutions.

Dr. John Robbins (MSA '09) displays ERAU's Martin Super Bat, an unmanned aerial vehicle (UAV). The Super Bat is a complete system that can operate autonomously, deliver high quality video imagery, and is small enough to be easily transported.

The MSUS degree requires 30 credit hours distributed across three areas of study.

- Unmanned Systems Core (15 credit hours)
- UAS Program Development or UAS Operations Specialization **(6 credit hours)**
- Research (9 credit hours)

Coursework is designed to instill students with the confidence to understand technical elements of unmanned and autonomous technologies and how growth in these technologies will further modernize the world we live in. The research component requires students to conduct original research that will culminate in a meaningful capstone project that contributes to the body of knowledge in this aviation discipline. Graduates will be prepared to pursue employment in high-level management or supervisory roles.

We are already enrolling students for the Fall 2020 semester!

Please feel free to contact me today for additional information.

Stay tuned for updates on our soon-to-be released MSUS website!

COLLEGE OF AVIATION

SCHOOL OF GRADUATE STUDIES

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Send contributions to Jan Neal. Please include your name, contact information, and your ERAU program and gradution year (if applicable). Photos must include the full name of each person and permission to use the image in the SGS Newsletter. Accepted contributions may be edited for length and clarity.

EMBRY-RIDDLE Aeronautical University
COLLEGE OF AVIATION
School of Graduate Studies

Produced May 2020 by Jan G. Neal