

Ms. Jessica Peterson is a current Ph.D. student and Research Assistant in the Learning Autonomy and Control Systems Laboratory for the Mechanical Engineering Department at the University Nevada Reno (UNR). Additionally, she is a part-time Instructor Flight Test Engineer for the US Air Force Test Pilot School (USAF TPS). Ms. Peterson began her career as a USAF Civil Service employee in 2005 and attended USAF TPS as a civilian Flight Test Engineer in 2017. She has over 18 years of flight test experience on fighter, bomber, and autonomous vehicles. As a graduate and instructor of USAF TPS, she has directed hundreds of control room missions, instructed 150+ flight test and space test professionals, and flown in over 40 different aircraft types with over 500 military flight hours in primarily the T-38, F-16, and C-12 aircraft. The highlight of her career was when she got to shake the hand of a pilot whose life was saved by a system she helped develop and test, the F-16 Automatic Ground Collision Avoidance System. Witnessing the operational impact and lifesaving capability of the Collier Award winning collision avoidance technology ignited her passion for autonomy and mixed human-machine decision-making, prompting her to return to graduate school and embark on a research-based Ph.D. journey.

Ms. Peterson's research proposal centers on the real-time determination of aircraft performance to optimize various mission profiles. This approach has broad applications, from real-time determination of optimized fuel performance to maximizing the dynamic maneuvering capability of aircraft. However, with her personal connection to lifesaving technology, her current research is titled "Real-time Aerodynamic Modeling and Control of Optimum Power-Off Glide Performance during Emergency Forced Landings" and is focused on developing technology to save lives in aviation during engine malfunction emergencies. Despite all of Ms. Peterson's flight time as an engineer, Jessica doesn't yet have her private pilot's license. She is currently working toward getting her license in glider aircraft (picture attached with flight instructor Ivan Altunin, also a UNR graduate student and NVSGC Graduate Fellowship recipient) and using her flight experience to inform her research. Ms. Peterson has a passion for instruction and outreach, and her plans after graduation are to become a college professor and use her real-world experience to inspire the next generation of engineers.



Jessica Peterson (front) receives glider aircraft instruction from fellow UNR graduate student and NVSGC recipient Ivan Altunin (rear)