## UNMANNED AIRCRAFT SYSTEMS FOR PUBLIC SAFETY

This session will focus on the utilization of Unmanned Aircraft Systems (UAS) for fire rescue. The UAS industry has rapidly evolved into one of the most talked about technologies of this decade. UAS enable public safety officials to conduct operations quicker, cheaper, and most importantly, safer.



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After serving 25 years with the United States Air Force, retired Colonel Kurt J. Carraway is the Unmanned Aircraft Systems (UAS) Executive Director of the Applied Aviation Research Center (AARC) at Kansas State University's Polytechnic Campus. In this capacity Carraway provides strategic leadership in advancing Kansas State University's UAS program goals. He directs the execution of research activities involving UAS through the AARC. Carraway also directs flight operations development and maturation of the UAS training program through direct supervision of the Flight Operations staff. He manages highly skilled UAS professionals that perform hundreds of UAS flights per year in

civil airspace. He sets policies and procedures for unmanned flight operations. He serves as

Principal Investigator (PI) on UAS activities through the AARC and is the University PI representative to ASSURE, the FAA's UAS Center of Excellence. In that role, he also serves as the UAS training focal point lead.

Before arriving at Kansas State Polytechnic, Carraway was stationed at Camp Smith in Oahu, Hawaii where he served first as Joint Operations Director and then Division Chief of Current Operations, both for the U.S. Pacific Command. Carraway worked with the Global Hawk UAS, as an evaluator and instructor pilot, and later became commander of the Global Hawk squadron. Carraway established standard operating procedures and composed technical manuals for the military's use of the Global Hawk.

A native of St. Louis, Missouri, Carraway received a Bachelor of Science in Mechanical Engineering at the University of Missouri Science and Technology in Rolla, prior to entering the Air Force. During his service, Carraway also completed a Master of Science in Systems Engineering at the Air Force Institute of Technology on the Wright-Patterson Air Force Base in Dayton, Ohio, and a Master of Arts in Management from Webster University in St. Louis, Missouri. He is married to the former Pamela Savage and has two daughters, ages 20 and 15.



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Travis Balthazor oversees flight instructors and pilots for UAS research, outreach, and flight training. He has extensive knowledge of current 14 CFR Part 107 regulations, Public and Section 333 Exemptions through Certificate of Authorizations. As Flight Operations Manager, he ensures that all flight operations are conducted in accordance with applicable regulations and routinely works with the FAA to gain operational approval for flights that are outside the regulatory constraints.

Balthazor received a bachelor's degree in Aeronautical Technology – professional pilot as well as a minor in aviation safety and an unmanned aircraft systems certificate from Kansas State University. Balthazor is currently pursuing a master's degree with a focus on human factors in UAS. Balthazor has several manned flight ratings including commercial instrument multi-engine

airplane and certified flight instructor instrument airplane. As a flight instructor, Balthazor trains and endorses students on check rides.

Balthazor routinely teaches outreach course offerings to the public. Through these courses, he instructs individuals, companies, and departments to integrate UAS within their respective industries. These courses span many industries but are often directly taught to law enforcement, academia, agriculture, and construction.

