CFAES

School of Environment and Natural Resources

Uncrewed Aerial Systems Student Research Assistant

Alexander Bransteter – Environment, Economy, Development, and Sustainability

THIS POSITION WAS LOCATED IN COLUMBUS, OHIO

THE OHIO STATE UNIVERSITY®
100th Anniversary
OF AVIATION
(CAS Logo)

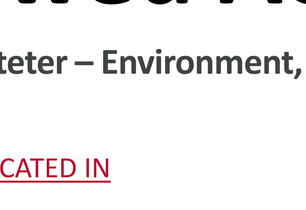
Mission Statement: to incorporate engineering, business, and behavioral philosophies into a multi-disciplinary approach to the many components of the aviation industry, supporting world class flight education programs, academic degree programs, research initiatives, and outreach activities on local, regional, national, and international levels

The Unmanned Aircraft Systems program, recently introduced, is an ever-expanding program being utilized across many majors and independent researchers for research/specialized purposes

Obtained the position through my supervisor, Chris Strasbaugh, at Engineering Technology Services

DRONE MODELS

The Alta X



WingtraOne Gen II
(Main Drone Used)

DJI Phantom 4 Pro V2

Skydio 2

FIELD EXPERIENCE

Navigating the Command Console of the WingtraOne Gen II

Calibrating the WingtraOne Gen II before the flight mission

DRONE UTILIZATION AND PURPOSE

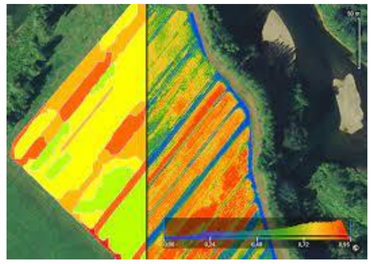
Every drone was similar in the capabilities they had, with differences of flight time, weight, load capacity, and camera sensors.

- Lidar Sensor (Alta X)
- Multispectral (Alta X, WingtraOne Gen II)
- RGB (Alta X, WingtraOne Gen II, Skydio 2, DJI Phantom 4 Pro V2)
- Hyperspectral (WingtraOne Gen II)

These sensors were used for researchers wanting to obtain data for farm sites to measure soil and plant health, light reflectance, crop yield, and more

FREQUENT DUTIES

Multispectral Data



Managed and processed data received from different sensors through Pix4D Mapper and Pix4D Fields; learned a new skill

Assigned to create informational PowerPoints and budget charts for different majors and independent researchers

Switching sensors, loading equipment, preparing for takeoff

ACCOMPLISHMENTS

- Learned to Process Different Data Sets to Produce RGB, Multispectral, and Hyperspectral Maps/Images
- Strengthened Knowledge of the Different Types of Drones and Capabilities
- Enhanced Communication Skills Leading the Informational Booth at the “Drone Rodeo Showcase”

FUTURE ASPIRATIONS/PLANS

Obtain my Part 107 Certificate to become a certified drone pilot before 2022 ends

Going into the field of Sustainable Community Development, I can utilize drones for 3D mapping, disaster response, analysis of agriculture, delivery of blood/aid, and more

- At the beginning of this internship, I was hesitant, and a bit confused on how this applied to my major
- However, this experience has opened my eyes to the myriad of opportunities and fields drones can encompass; I will certainly be looking for a job in the future that utilizes drones

Ex: Agriculture, Real Estate, Architecture, Urban Planning, Disaster Relief, Photography/Videography**, Mapping**, etc

To anyone interested in a similar field, I have learned a lot of valuable lessons and skills to apply to my future career, and it has helped shape my decision for my career through the experience

ACKNOWLEDGEMENTS

I would like to thank my supervisor, Chris Strasbaugh, and my boss and mentor, Mark Bolin. They gave me the opportunity and tools to become an integral part of the UAS crew and taught me everything about drones. Also, they allowed me to become a better worker, person, and student!

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