

# GeoTEd-UAS Institute 2018 Agenda



sUAS: From Data Acquisition to New Insights & Actionable Decisions

May 20-26, 2018 | Blacksburg, VA

#	Time	Location	Category	Topic	Description / technical requirements / etc.	Lead Instructor
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## Day 1: Sunday, May 20

1	11:00 - 12:00	315 Cheatham Hall	---	Registration	---	---
2	12:10 - 12:30	315 Cheatham Hall	---	Institute Overview	Workshop goals, objectives, and logistics	John McGee et al
3	12:30 - 12:45 Working Lunch	315 Cheatham Hall	---	Overview of Workshop & Expectations	---	David Webb
4	12:30 - 1:30 Working Lunch Meeting (continued)	315 Cheatham Hall	---	Cohort Update: Individual reports from each CC	Presentation summary of activities & highlights from each College over the past year (3 mins.)	Cohort members
5	1:30 - 1:45 Break	---	---	---	---	---
6	1:45 - 2:15	315 Cheatham Hall	Preflight / Mission Planning	sUAS Overview	Review of Pre-flight planning tools (GE, SkyVector, check sheets, etc.)	GeoTEd Project Team led by Daniel Cross
7	2:15 - 3:30	Computer Lab, 220 Cheatham	Preflight / Mission Planning	Flight Planning	Autonomous flight planning demo & hands-on activity w/ DJI Phantom 4 (DroneDeploy, etc.)	GeoTEd Project Team, led by David Webb

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8	3:30 - 5:00	Computer Lab, 220 Cheatham	Preflight / Mission Planning	sUAS Sensor Options and Remote Sensing Overview	True color, Thermal, NIR, Multispectral, & Lidar / Understanding What's In a Pixel	Daniel Cross and Cherie Aukland
9	5:00 - 5:15	Break				
10	5:20 - 6:15	Meet Vans (at 5:20) in the Cheatham Parking lot for travel to the Stream Lab (~5 mins away)	Flight Operations	Larger sUAS's and Lidar	Demonstration: Hydrology Mapping with the Pulse Vapor 35	Cully Hession & Streamlab Crew
11	6:30 - 8:00	Hahn Hort Center w/ The Element Catering Company	Post Flight	Evening Session - Dinner meeting & Presentation @ The Hahn Hort Center	Application Driven: Using sUAS for Lidar Capture	Cully Hession & the Streamlab Crew
12	8:00	Hahn Hort Center	---	Daily Wrap-up	---	Cherie Aukland

**Day 2: Monday May 21**

13	9:00 - 9:15	Computer Lab, 220 Cheatham	---	Overview of the day	---	David Webb
14	9:15 - noon	213 A Cheatham Hall	Preflight / Maintenance	Troubleshooting, repairing, and maintaining a drone	Kits provided by Fred	Fred Coeburn & David Webb
15	noon - 1:00	315 Cheatham Hall Catered Lunch with Heathwood Market & Guest Speaker	Post flight	Data Driven sUAS Applications: Examples from the Field	Webinar: Guest Speaker	Sean Hogan University of CA Davis

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16	1:00 - 2:00	213 A Cheatham Hall	Preflight / Maintenance	Troubleshooting, repairing, and maintaining a drone	Kits provided by Fred	Fred Coeburn & David Webb
17	2:00 - 3:00	Micro Computer Lab	Preflight / Maintenance	Troubleshooting: Programming and calibrating a drone	Checking settings, IMU, etc.	Fred Coeburn & David Webb
18	3:00 - 4:00	213 A Cheatham Hall	Preflight / Maintenance	Changing and modifying sensors	Sensor mods	Fred Coeburn & David Webb
	4:00 - 4:10	231A Cheatham Hall	---	Daily Wrap-up	---	Cherie Aukland
19	4:30 - 5:30	VT Drone Cage	Flight Operations	Flying your repaired drone...		Fred Coeburn & David Webb
20	6:00 - 9:00	Rising Silos Brewery, 2351 Glade Rd., Blacksburg, VA 24060; (410) 596-1200	---	Dinner meeting and Networking Social;	---	Meet with sUAS industry representatives & AUVSI

**Day 3: Tuesday, May 22**

21	9:00 - 9:15	Computer Lab, 220 Cheatham	---	Overview of the day	---	David Webb
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22	9:15 - 10:00	Computer Lab, 220 Cheatham	Preflight / Flight planning	Flight Planning for Service Learning Component: Landcover mapping at a local farm operation	Use reconnaissance level flight planning tools (GE, Skyvector, B4YouFly, 1800WXBrief, etc.) to support sUAS projects at Doe Creek Farm	Daniel Cross and the GeoTEd Team
23	10:00 - 10:30	TBD	Post Flight	Data Processing	Color balancing with true color	David Webb
24	10:45 - 12:15	Computer Lab, 220 Cheatham	Preflight / Flight planning	Flight Planning for Service Learning Component: Landcover mapping at a local local farm operation	Break out into 5 groups and plan your flight operations for the afternoon using DroneDeploy, eMotion, or other autonomous flight software. Upload files onto a laptop.	Daniel Cross and the GeoTEd Team
25	12:15 - 12:50	D2	Working Lunch	---	---	---
26	1:00	Meet at the vans (Cheatham Parking Lot)	Flight Operations	Transportation to the field site (the farm)	---	---
27	2:00 - 5:00	The farm (more details later)	Flight Operations	Conducted at the farm	Mapping exercises using True Color and other sensors supported by Phantoms, eBee, etc.	GeoTEd-UAS Leadership Team (by group) Teams and activities organized by Daniel Cross
28	5:00 - 5:15ish	Transportation back to Virginia Tech	Flight Operations	---	---	---
29	TBD	Dinner on your own	---	---	---	---

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30	7:00 - 10:00	Computer Lab, 220 Cheatham	Post Flight	Data Processing	Creating Image Mosaics using DroneDeploy and /or Pix4D	Cherie Aukland and the GeoTEd Team

**Day 4: Wednesday, May 23**

31	9:00 - 9:15	Computer Lab, 220 Cheatham	---	Overview of the day	---	David Webb
32	9:15 - noon	Computer Lab, 220 Cheatham	Post flight	Data Processing	Understanding your data: Making actionable decisions with sUAS Imagery	Daniel Cross and the GeoTEd Leadership Team
33	noon - 1:00	D2	Working Lunch	---	---	---
34	1:00 - 1:45	Computer Lab, 220 Cheatham	Post flight	Data Processing	Working with GCP's	Daniel Cross
35	2:00- 2:45	Computer Lab, 220 Cheatham	Post flight	Data Processing	Working with NIR / NDVI	Daniel Cross
36	2:45 - 3:00	Break	---	---	---	---
37	3:00 - 4:00	Computer Lab, 220 Cheatham	Post flight	Data Processing	Image processing with Thermal Sensors	Scott Bellows, Fred Coeburn, and the GeoTEd Leadership Team
38	4:00 - 5:30	Computer Lab, 220 Cheatham	Post flight	Data Processing	What is multispectral image Processing?	Valerie Thomas, Virginia Tech
39	5:30 - 5:45	Computer Lab, 220 Cheatham	---	Daily Wrapup	---	Cherie Aukland

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**Day 5: Thursday, May 24**

40	9:00 - 9:15	Daily Overview	---	---	---	David Webb
41	9:30 - 11:30	Computer Lab, 220 Cheatham	Post flight	Data Processing	Working with Lidar Data: Jamestown Exercise	Cherie Aukland and David Webb
42	11:30 - 12:15	Cheatham Hall	---	Mentor Meetup	Discuss expectations for the following year	Each mentor
43	12:15 - 1:15	D2	Working Lunch	---	---	---
44	1:30 - 4:45	Field based: Location TBD	Flight Operations	Field based flight experience	Opportunities to capture imagery for processing and later interpretation	Daniel Cross and the GeoTEd Leadership Team
45	5:00 - 5:30	218 Cheatham Hall	Post flight	Initial Processing of Collected Data (Queue it up!)	Use image processing software to initiate an image mosaic for the imagery that you captured today	Self led
46	5:00 - 5:15	Computer Lab, 220 Cheatham	---	Daily Wrapup	---	Cherie Aukland
47	6:30	Location TBD	---	Celebration Dinner	---	Guest speaker -Mike Sporer, National Weather Service

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**Day 6: Friday, May 25**

48	9:00 - 9:15	315 Cheatham	---	Daily Overview	---	David Webb
48	9:15 - 9:30	315 Cheatham	Post flight	Share successes / challenges from the previous day's flight /	---	---
49	9:30 - 11:00	315 Cheatham	Preflight	---	Organizing a service learning course, lessons from the field	Cherie Aukland, Chris Bruce, Chris Carter, Fred Coeburn, Veronica Spradlin, & David Webb
50	11:00 - noon	D2	---	Working Lunch and Workshop Wrapup	---	Cherie Aukland