Drones for Teaching: Taking Fieldwork to a (Literally) Higher Level

Keith Landa, Purchase College SUNY

Expanding availability of drones (UAVs, UASs)

“Hot” consumer item in recent years
- Decreasing price
- Increasing capabilities
- Increasing ease of operation
- Cameras and other sensors
Educational uses of drones

Aeronautics  
Robotics  
Coding

Agriculture  
Archeology  
Wildlife ecology  
GIS  
Geology

Civil engineering  
Construction  
Campus facilities

Filmmaking  
Dance  
Theater
FAA resources

Getting Started

Register Your Drone

User Identification Tool

Become a Drone Pilot
Flight restrictions

AirMap demo
The drone I’ve been using

MAVIC PRO

- Quadcopter
- Gimbal-mounted camera
- Controller
- Battery packs
- Flight times
ENV 2720 Geology

- “Sophomore-level”
- ENV majors
- Fall 2016
- Lecture / lab course
  - Field component important
  - How to use drones to support fieldwork?
Field study of formations and landforms
Palisades on the Hudson - access issues
Access issues 2
Unique perspectives
More perspective
Photogrammetry
Higby Mountain example - 3D model
Higby Mountain example - camptonite dike
Altizure demo

Web vs. app

Higby Mountain model

Chestnut Ridge model
I-684 roadcut

Chestnut Ridge Hawkwatch
3D Printout of DEMs
Flight control apps

DroneDeploy demo
Lidar mapping
Multispectral mapping