COLLECTING WATER SAMPLES WITH DRONES FOR WATER QUALITY SURVEYS

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The Unmanned Aircraft Systems Research Program consisting of researchers from Mechanical and Aerospace Engineering, The USGS Wildlife Coop Unit and the Geomatics Program at the University of Florida have designed and built a drone-based sampling device to sample water in normally inaccessible areas. Additionally, it can be used to quickly sample water for red tide, algal blooms, pollution and other contaminants from the shore without having to operate a boat. A commercial-off-the-shelf drone (DJI M-600) provides an ideal platform to carry the water collection payload, due to its endurance and weight capacity. This allows the collection of water samples in difficult to access areas with little risk to the drone or ground personnel. The payload sampling mechanism, which takes the form of a small boat hull, is attached to the drone by a tether line and lowered into the water by a winch. A water sensing device embedded within the hull triggers a pump to draw water into a sterile bag within the vessel. Once samples are collected the drone returns to the launch site, then proceeds to land on a small foldable raft. This will allow for safely landing the drone away from any personal operating the drone/boat.

PRESENTER BIO: Andrew Ortega is a student at the University of Florida and a member of the Unmanned Aircraft Systems Research Program.