FUNding Friday Project Update: Customizing (aka 'Pimping') My Drone [1]

  Submitted by kbeierle on Wed, 2016-12-21 17:58   **Event:** Winter Meeting 2017 [2]

Abstract:
The Federation of Earth Science Information Partners (ESIP) held its 2016 Summer meeting in Durham NC the third week in July. The organizers held an annual event called FUNding Friday which is an opportunity for small projects, related to exploration of technologies, skills or services in the geosciences, to obtain funding. This project won by presenting an idea to customize a drone.

The idea was to equip a quad-copter drone with sensors to collect consecutive ascending and descending profiles of position, pressure, temperature, relative humidity and other atmospheric measurements, and then to stream that data into a Cloud-Hosted Real-time Data Services for the Geosciences (CHORDS) Portal to be used for education and outreach. In order to achieve this, we partnered with a group of high school students, and their engineering and computer science mentors, from the Innovation Center (IC) of St. Vrain Valley Schools, in Longmont CO. The IC center focuses on fostering moderately at-risk students with a passion for science, technology, engineering and math, and engaging them in projects to develop relevant, technological skills to prepare them for the workforce. A group of four students were selected by the programs director to participate. This past fall the students: 1. determined appropriate specifications for the drone to be purchased, 2. Began brainstorming design ideas and data collection mechanisms, 3. explored options for different atmospheric sensor modules to measure thermodynamic and chemical components, and 4. selected appropriate instrumentation to be purchased. This coming winter and spring they will begin testing and calibration of the equipment, equipping the drone with sensors and testing the telemetry. Once that is accomplished we will work with the CHORDS team to enable data accessibility through a specially customized portal for real-time access, measurement troubleshooting and remote monitoring.

Collaboration Area: Air Quality [3]
Discovery [4]
Education [5]
Information Technology and Interoperability [6]

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