

CROWN Capstone – Press Release, March 30th, 2019

Version 1.2

CROWN Project - Revolutionizing the world of cover crop research

Streamlining data collection and analytics for farmers and scientists

The current system of cover crop data collection can be difficult and time-consuming for researchers to advance in. CROWN aims to remedy these hindrances by streamlining the input and output of data. No longer will technicians struggle to enter in cover crop data, nor will farmers wrangle with visualizing the data. CROWN will allow both to maximize their ability to collect and visualize cover crop data and ultimately lead to increased crop health and yield.

“The CROWN project will make data entry, storage, and collection a streamlined process for technicians and farmers to make the most of their research“ - Benny Cheng (Project Lead)

The data that the technicians are inputting is currently not standardized, making the database bloated with extra columns that apply to only a handful of other farmers. Because of this, the database is hard to maintain and is unnecessarily large. Furthermore, the database consists of Google Sheets, making it impossible to interface with the farmOS platform. Along with faulty data input, there is minimal data visualization with the current product at hand. In order to solve the problem, our platform will change the structure of the database and structure of all the data input to make every input standardize, minimizing data overhead and streamlining the data input process. We will also create a front end application where the data analysts can easily see where sensors may have gone awry. By combining appropriate graphs and tables, any interested users will be able to assess the health of the entire system in a quick glance.

Once a form is created, the technicians will be able to log into the OurSci mobile application and enter the applicable data which will be sent into the online platform. Once the data is entered and submitted, the data will be uploaded realtime and will be subject to analysis immediately. There will be no intermediate steps that the technicians need to do in order to make the product work.

The CROWN project is a new, innovative piece of technology that will make the lives of technicians, farmers, and researchers much easier. Thank you for your interest in revolutionizing the world of cover crop research. If you are interested in hearing more from us including when we launch, follow us on: <https://seam.cs.umd.edu/purtilo/435/blog.html>.

F.A.Qs

- 1. What will happen to the current data stored on Google Sheets?*
CROWN will consolidate the current Google Sheets data into our database, making it accessible the same way future data will be.
- 2. How will technicians enter data?*
Rather than entering data on Google Sheets, technicians will be presented with a short form allowing for entry as well as scanning of barcodes. This form will be through the OurSci app. The forms will be presented in a survey format, in which some questions will be qualitative and others will be strict numerical input
- 3. How will the data be stored?*
Crop data will be stored in a relational SQL database using Postgres. The tables of the database will be related directly to the physical or digital sources defined in our data dictionary.
- 4. How can farmers and researchers access the data?*

A dashboard to represent the data in the database, as well as the health of the database, will be created. React with fusionchart.js will be used to turn the Postgres database queries into visualized data.