Field Day: Industry Showcase

AG2PI
Agricultural Genome to Phenome Initiative

Iowa State University · The University of Arizona · University of Idaho · University of Nebraska Lincoln

Plant-DiTech: High-Throughput Functional Phenotyping to Elucidate Abiotic Stress Responses in Plants

A plant's stress response in its constantly changing environment is highly complex and difficult to capture under standardized and repeatable conditions. We will demonstrate how our 'PlantArray' technology captures the plant–water balance, continuously and simultaneously, which in turn allows for customized and precise set-up of drought stress conditions per plant. The output of key physiological parameters (e.g., whole plant transpiration canopy stomatal-conductance, biomass gain, water use efficiency and root flux) allows for functional characterization of stress responses. We then used high-resolution greenhouse data to correlate to a tomato drought stress experiment in the field and obtained a high correlation between cumulative transpiration in the greenhouse and total and red fruit weight in the field experiment.

Presenter:

Dr. Katrin Jakob leads the U.S. business development for Plant-DiTech, a functional plant phenotyping company.

GRYFN: Multi-Modal UAS Sensing Solutions for Field Phenomics

To exceed the growing demands of a hungry and changing world, plant breeders are turning from manual phenotyping methods to sensors and automated remote sensing. Data captured via remote sensing imagery and other modalities are valuable to breeding decisions, but these new tools bring unique requirements and challenges. In collaboration with Purdue University, GRYFN was awarded a sub-award from the TERRA program to focus on these high throughput phenotyping tools. GRYFN's solutions offer research-ready, high-precision, multi-sensor UAV-based hardware and software that enable customers to obtain repeatable research quality data. We will discuss the problems addressed for multi-sensor integration design, calibration, processing, and operations as quality systems are developed that deliver reliable, consistent, and accurate data for any research team.

Presenters:

Matt Bechdol is CEO for GRYFN, a Purdue University startup focused on multi-modal research-grade drone sensing platforms. He specializes in spatial data analysis, remote sensing, data driven agriculture, and natural resources.

Evan Flatt is Director of Solutions at GRYFN. A graduate of Purdue University's College of Technology, Flatt specializes in hardware solutions for remote sensing and mobile mapping applications.

This field day is a result of an open call for presenters. AG2PI does not endorse or benefit otherwise from the companies presenting at this event.

Oct. 20, 2021

10:30 AM–12:00 PM
(Central Time, –5 GMT)

Purpose: To learn of new technologies developed via industry that could be applied to genomic research.

Register for this Zoom virtual meeting:

https://tinyurl.com/AG2PI-FD12

Upon registration, you will receive a confirmation email with information about joining the meeting.

A recording will be available at a later date at: **ag2pi.org/**

USDA
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