A modular, community-driven framework for developing high-throughput plant phenotyping tools

Speaker: Dr. Noah Fahlgren
Director, Bioinformatics Core Facility
Donald Danforth Plant Science Center

Date/Time: Thursday, April 25, 4:00 pm

Location: LSIII Auditorium (Rm1059)

Abstract: Systems for collecting image data in conjunction with computer vision and machine learning techniques are a powerful tool for increasing the temporal resolution at which plant phenotypes can be measured non-destructively. Computational tools that are flexible and extendable are needed to address the diversity of plant phenotyping problems. To address these needs, we developed PlantCV, an open-source framework for analyzing high-throughput plant phenotyping data. The goal of the PlantCV project is to develop a set of modular, reusable, and repurposable tools for plant image analysis that are open-source and community-developed. PlantCV was originally developed to analyze data from the Bellwether Phenotyping Facility at the Donald Danforth Plant Science Center, but the suite of available features has grown as the set of users, developers, and use cases have diversified. PlantCV is developed openly in real-time in the cloud using an open-source framework to rapidly disseminate new methods and to foster a network of users, collaborators, and contributors. In addition to being a research tool, we utilize PlantCV for training students and researchers in image and data analysis techniques, as well as providing a platform where students can gain experience in scientific software development.

Discussion: 5:00 – 5:30 pm. April 25. LSIII Auditorium (Rm1059)

Biography of Dr. Noah Fahlgren

Noah Fahlgren received his BS in Biology and a PhD in Molecular and Cellular Biology from Oregon State University. Early in his graduate school training he made the transition from wet lab science to bioinformatics during the time when high-throughput DNA sequencing technologies were becoming readily available. Today, Noah Fahlgren is the Director of the Bioinformatics Core Facility at the Donald Danforth Plant Science Center. The Bioinformatics group at the Danforth Center uses and develops computational approaches that leverage large datasets to address biological problems. A major focus of our research utilizes natural variation, combined with high-throughput genotyping and phenotyping, to identify the genetic basis of traits in potential biofuel crop systems such as sorghum and camelina.

Student Lunch with Speaker: [Reservation required thru <geislerlee@siu.edu>]

Noon – 1:00 pm. Thu April 25. Morris Library DeJarnett American Heritage Room on 3rd Floor.

Meeting with Speaker: [Reservation required thru <geislerlee@siu.edu>]

10:00 am – noon, 1:00 – 3:30 pm. Thu April 25.

Questions: contact

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