Welcome to the Random Forest Classifier PlantCV Workshop! In this activity we will demonstrate how to use PlantCV to develop a machine learning workflow to have the software successfully discern types of dried beans in a heterogeneous mixture. Please follow the instructions described below to successfully complete this activity.

Contents:

* [Techniques\_For\_Capturing\_Images\_Bean\_Lab.pptx](https://docs.google.com/presentation/d/1mX4o58iIYllwsNP5e1apWbWpuusYHuG3/edit?usp=sharing&ouid=112049277696634602833&rtpof=true&sd=true): Powerpoint presentation adapted from Dr. Katie Murphy’s, Director of Phenotyping at the Danforth Center, Techniques For Capturing Quality Images slide deck. In this presentation, we cover important tips for capturing quality sample images of beans for this activity. At the end of this presentation is a QR code with a clickable link to a survey to help us improve this and future workshops, please consider leaving feedback for us! We would greatly appreciate it!
* [img](https://drive.google.com/drive/folders/1-bYc4EaJVRFOETKyfhU7fH56D-g5vEPQ?usp=sharing): Folder for storing images for use in workflows. Comes preloaded with an image of black eye peas and a heterogenous mixture of legumes.
* [Black-eye-pea-trait-extraction.ipynb](https://drive.google.com/file/d/1ufY-0SM2yuZ-a367qDNw_di1T1OZgLfl/view?usp=sharing): This is a completed and functional PlantCV workflow extracting phenotypic traits of black eye peas.
* [blank-trait-extraction.ipynb](https://drive.google.com/file/d/1Inj1ri8wWoLrUM_ubpropCJin2XwDenV/view?usp=sharing): This is a blank Jupyter notebook that is used to develop training sets for the Random Forest Classifier (ml-classification-part2.ipynb)
* [ml-classification-part2.ipynb](https://drive.google.com/file/d/1bh7DaYZ0g88vbu-UEQuT2JpVq0ue4z-S/view?usp=sharing):Use this Jupyter notebook to feed the CSV files generated from the trait extraction notebook above. Depending on how well your entrainment was, the model should be able to predict which bean is which.