2026

Donald Danforth Plant Science Center

Phenotyping Core Facility

Service Guide

For Academics and Non-Profits

WWW.DANFORTHCENTER.ORG/PHENOTYPING

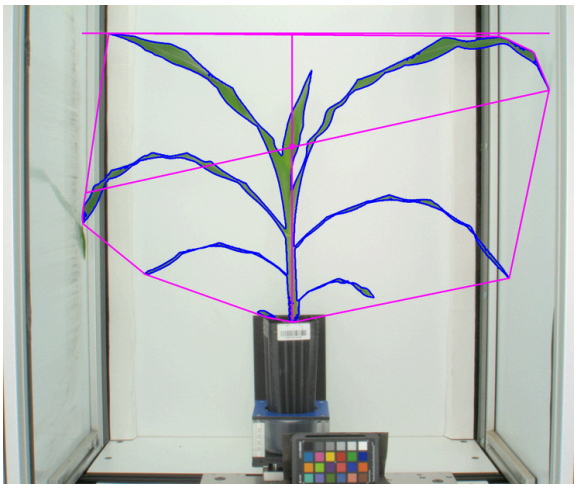
Introducing the Phenotyping Core Facility

About the Danforth Center:

The Donald Danforth Plant Science Center is the world's largest nonprofit plant science research institute, located in St. Louis, Missouri. Our mission: Improve the human condition through plant science.

About our Core Facilities:

Our Core Facilities are centers of excellence, housing domain experts and cutting-edge technology. Our teams provide services to internal users, external academic labs, and companies, as well as advances technology and research in the field.



Learn more about the Core Facilities:

DANFORTHCENTER.ORG/CORE-FACILITIES

How to use this guide:

- Find the right service to fit your needs - self-service equipment, full-service packages, trainings, and more.
- See an overview of our technologies and example applications.
- Email us to inquire about availability and get an official quote.

Contact us: Phenotyping@danforthcenter.org

What is plant phenotyping?

What it is:

A phenotype is a measurable trait in an organism. In plants, this includes traits such as plant height, color, spectral index, leaf area, root depth, and more. Phenotyping is the process of measuring these traits.

Why it's important:

Measuring plant traits is critical to developing a secure, sustainable food supply and validating agricultural technologies. Measuring these traits answers questions about plant genetics, agricultural processes, and plant resistance to diseases, pests, and abiotic stresses. Phenotyping is critical for both basic and applied scientific questions.

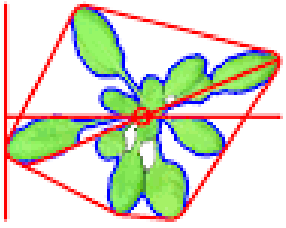
How we do it:

We use state-of-the-art technologies to measure plants. Generally, we collect pictures or weights, then analyze those data to make conclusions. From simple cameras to high-throughput technologies, we have the capacity to measure many species, sizes, and environmental conditions.

What is PlantCV?

PlantCV is an open-source image analysis software package, specifically for plant science. Use PlantCV to measure plant traits (aka phenotypes) from images. The project is made possible by the effort of many generous contributors, collaborators, and users, and is managed by Danforth Center Principal Investigators Malia Gehan, PhD (Associate Member) and Noah Fahlgren, PhD (Director of Data Science).

PlantCV is free to use and open to contributions from the community. PlantCV has been used in 120+ publications and has been downloaded 28k+ times.



Visit the PlantCV Webpage to learn more and get started:

WWW.PLANTCV.ORG

Services Overview

Self-Service (do it yourself) Equipment Rental (more details pg. 8)

- Hourly equipment rentals
- Training by our team of experts
- Use the equipment in the Danforth Center facilities, or off-site in the St. Louis metro area
- Not included: labor, plant growth, or data analysis
- See our database for a detailed equipment list
- See page 8 for descriptions

Prices start at:
Academic - $190 per person for training, $10 per hour for equipment rental

Full-Service Experiments (more details on pg. 15)

- Packages include:
  - Labor
  - Equipment rental
  - Plant growth and care
  - Consumables
  - Data collection
  - Statistical analysis
- Projects of all sizes in controlled environments
- See page 15 for service descriptions and pricing

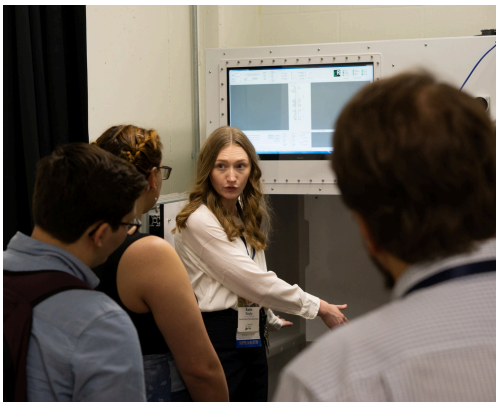
Core Facility Projects (more details on pg. 23)

- Includes all the items of full-service experiments, plus additional experimental design and consulting
- Best for large projects that involve multiple Core Facilities
- See page 23 for example projects

Add-On Services

Director Consulting	• Expert advising from the Phenotyping or Data Science Core Directors $158/hour
Experimental Design	• Guidance, procedures, and documentation on equipment, methods, treatments, replicates, analysis types, and more from our experts. $1260
Staff Labor	• Our expert Technicians are available for additional data collection for your unique needs beyond the standard full-service projects. $60.50/hour
Image Analysis	• You give us images, we analyze them to give you quantitative phenotypes such as plant height, color, spectral indices, and more. PRICE DEPENDENT ON PROJECT SCOPE, STARTING AT: $1155
Image Analysis Workflow Development	• We build a custom workflow from existing PlantCV tools that your team can use to analyze image to measure plant phenotypes. PRICE DEPENDENT ON PROJECT SCOPE, STARTING AT: $700
Statistical Analysis	• Our team analyzes quantitative data (phenomic, genomic, metabolomic, microbiome, etc.) for statistical significance, plotting, and more. PRICE DEPENDENT ON PROJECT SCOPE, STARTING AT: $700
Software Development	• Need an image analysis tool that doesn't exist? We can develop a new tool for your specific analyses in the PlantCV Ecosystem. PRICE DEPENDENT ON PROJECT SCOPE, STARTING AT: $1700

Trainings



Hands-on equipment training

Our experts provide hands-on training for all of our self-service equipment so that you can collect the best possible data. Training includes relevant safety procedures, equipment setup, data collection, and best practices. Our custom user guides and training materials are available upon completion. See pricing details on the equipment description pages.

Training in Image Analysis, Data Analysis, and Statistics

Teach Yourself (Free)

Webinar recordings and training materials are available on the PlantCV webpage to teach yourself how to do image and data analysis.

PRICE

$FREE

Conference Workshops

Check the PlantCV Events page to find upcoming conferences that will include a workshop led by our Core Facility experts.

PRICE

$Conference registration fee

Small Group Workshops

We host quarterly workshops for external individuals to learn about topics such as PlantCV Image Analysis, Statistics for Biology, and more. Workshops are in person, hands-on, and feature a small group for maximum learning.

PRICES DEPENDENT ON WORKSHOP LENGTH, STARTING AT:

PER PERSON:

$100

Custom Workshops

If you want a custom workshop for your group or company, we can lead virtual or in-person trainings on your specific topic of interest.

PRICES DEPENDENT ON WORKSHOP SCOPE AND SIZE, STARTING AT:
PER WORKSHOP:

$2000

FAQ

What is the timeline for equipment and service availability?

All project start dates are dependent on project scope availability of the growth space, equipment, and staff capacity. Most projects start within one month of contract completion. Email us for availability of your service of interest.

Can you be a co-Principal Investigator on my grant?

Our Directors are also expert researchers and Principal Investigators. When a project is an appropriate fit for their research interests, they may serve as co-PIs on grants in addition to service providers.

Who owns Intellectual Property generated during my project?

All intellectual property terms are outlined in the contracts process upon agreement of your team and the Danforth Center legal team.

I need more help to get started learning about plant phenotyping, can you help?

Yes! If you are new to phenotyping and aren't sure what equipment or services are right for your team, our Directors are available for additional paid consulting time to help you determine and plan the right experiments for your needs.

Self-Service Equipment Descriptions

We train you, then you rent the equipment and do it yourself.

PHENOTYPING@DANFORTHCENTER.ORG

Want to utilize this equipment, but don't have the staff to do so? All self-service equipment is available for full-service, as well, where we collect and analyze the data for you.

Self-service equipment

Rental starts at: **$10/hour**

We train you in equipment use and operation, and you rent the equipment for "do-it-yourself" phenotyping.

Want our staff to operate the equipment instead? All self-service equipment is also available for full-service data collection and data analysis.

The Process:

- Request equipment rental by emailing phenotyping@danforthcenter.org
- Complete a biosafety intake form
- Complete a Facility Use Equipment
- Receive facility access badges
- Get trained by our experts
- Reserve and use the equipment

Equipment

Phenovation PlantExplorer MAX

This specialized camera is used to measure plant health and photosynthesis, including NDVI, chlorophyll index, Fv/Fm, NPQ, GFP, RFP, and more.

Photo Studio

Capture photos using our digital cameras, color calibration cards, and studio backdrop for top-down and side-view images. Plant images can be analyzed for plant height, leaf area, color, and more.

LiCor Li-6800

This portable photosynthesis meter measured carbon dioxide in order to analyze plant photosynthesis and health, including carbon assimilation, stomatal conductance, transpiration, Fv/Fm, and more.

Minirhizotron Cameras

CID Biosciences camera for capturing images of roots underground through plastic tubes.

Soil Moisture Sensor

Terros meter measures soil moisture content, temperature, and conductivity with a hand-held meter.

Spectrometer

Ocean Optics spectrometer measures light quantity, quality, and spectrum from your light sources.

3D scanners and printers

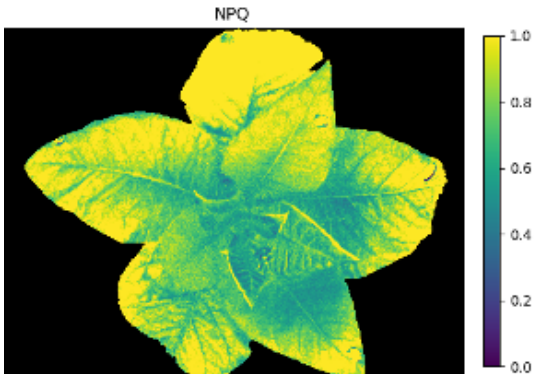
High-quality 3D printers and associated scanners are available for creating custom parts and lab equipment, in our Maker Space.

PlantExplorer MAX

self-service equipment rental

Summary

The Phenovation CropReporter is a specialized camera for measuring plant health, photosynthetic efficiency, and size. Individual plants are placed in front of the camera by the user. Images can be analyzed using free software PlantCV for quantitative measurements of each plant.



Plant sizes: small - medium

Images collected: manually, separate from growth space.

Number of plants: Unlimited

Data collected

- Plant size:
  - leaf area or height
- Plant health and stress tolerance:
  - Fv/Fm (photosystem II efficiency)
  - NPQ (non-photochemical quenching)
  - Fv'/Fm' (photosystem II efficiency)
  - Chlorophyll index
  - NDVI (non differential vegetative index)
  - Anthocyanin index
  - GFP
  - RFP

PRICING

TRAINING	$189
SELF-SERVICE	$11.50/hr
FULL-SERVICE*	$83/hr
IMAGE ANALYSIS	$1155/expt

Example applications

Plant stress tolerance

Determine if a plant is more or less tolerant to abiotic stress (drought, heat, nutrient, salt, etc.) or biotic stress (bacteria or virus infection).

Effect of agricultural products

Determine if an agricultural product (seed coatings, microbes, soil amendments, sprayed product) affects plant health and photosynthesis.

Impact of genetic modifications

Test different genotypes or genetic modifications for their effect on photosynthesis and plant size.

Instrument cannot be taken off-site or removed from its location.

*Full-service price includes equipment rental and data collection, it does not include image analysis, statistical analysis, or plant growth. Options are available for these add-on services.

Photo Studio

self-service equipment rental

Summary

Collect top-down or side-view images in our professional Photo Studio. Images can be analyzed in PlantCV for plant phenotypes such as size and color. A Raspberry Pi computer and barcode scanner make labeling and transferring images fast and accurate.

Plant sizes: any size

Images collected: manually, separate from growth space.

Number of plants: Unlimited

Data collected

- Plant size:
  - leaf area, height
- Plant color:
  - hue for “greenness” or chlorotic segments
- Plant shape:
  - solidity, convex hull, perimeter, leaf number
- Photo for marketing and presentations

PRICING

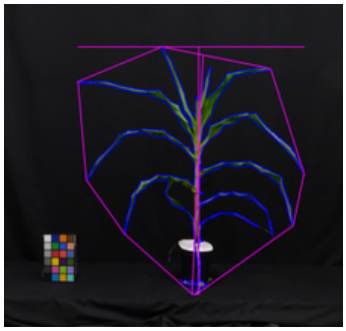
TRAINING	$138
SELF-SERVICE	$10/hr
FULL-SERVICE*	$83/hr
IMAGE ANALYSIS	$1155/expt

*Full-service price includes equipment rental and data collection, it does not include image analysis, statistical analysis, or plant growth. Options are available for these add-on services.

Example applications

Side-view imaging

Measure effect of genetics, management, and applied products on plant growth and health.



Top-view imaging

For smaller plants, petri dishes, or plant parts (like cleaned roots), capture top-view images for measuring plant phenotypes.

LiCor Li-6800

self-service equipment rental

Summary

The Li-6800 utilizes a gas analyzer to determine how much carbon dioxide is assimilated into a leaf and how much water is transpired. Additional lights and sensors measure photosystem efficiency. A small area of the leaf is clamped into the sensor head for a localazed measurement of photosynthesis.

Plant sizes: any size

Measurements collected: manually

Number of plants: Unlimited

Data collected

- Photosynthesis:
  - Carbon assimilation (A)
  - Stomatal conductance (gsw)
- water-use:
  - Transpiration (E)
- Plant health and stress tolerance:
  - Fv/Fm (photosystem II efficiency)
  - NPQ (non-photochemical quenching)
- See more on the LiCor website

PRICING

TRAINING	$189
SELF-SERVICE	$39/day
FULL-SERVICE*	$751/day

Example applications

Environmental responses

Measure the effect of the environment on photosynthesis in a particular plant by making assimilation curves compared to carbon dioxide, light, temperature, and more.

Field phenotyping

The portability and long-lasting batter of the Li-6800 makes it an excellent choice for phenotyping plants for photosynthetic traits in a field setting.

Can the instrument be taken off site?

Yes, the device can be taken anywhere in the St. Louis metro area.

*Full-service price includes equipment rental and data collection, it does not include image analysis, statistical analysis, or plant growth. Options are available for these add-on services.

Minirhizotron

self-service equipment rental

Summary

Minirhizotron cameras provide non-destructive images of roots grown in soil. Unlike digging and cleaning roots, this imaging method allows imaging of the same plant over time and in high-throughput. Tubes can be installed in a field, or placed in large pots in a greenhouse.

Plant sizes: any size

Measurements collected: manually

Number of plants: Unlimited

Data collected

- Root color
- Root depth
- Root distribution
- Root size:
  - width, length, etc.
- Root anatomy:
  - angle, number of branches, etc.
- Nodulation

Field installation

Greenhouse

PRICING - MINIRHIZO TUBE

TUBE RENTAL	$52.50/tube
INSTALL & REMOVAL (GREENHOUSE)	$79/tube

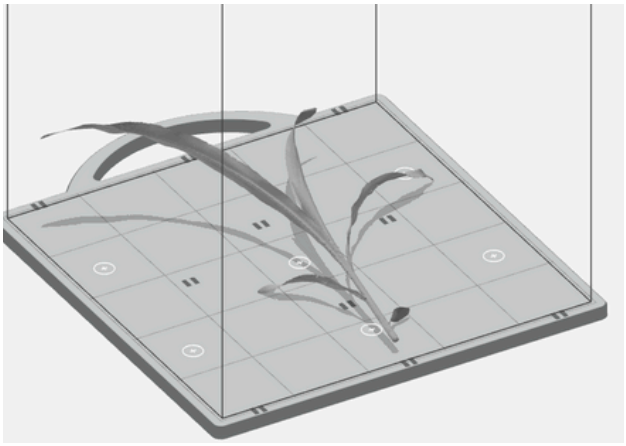
PRICING - CAMERA RENTAL

TRAINING	$189
SELF-SERVICE	$74/day
FULL-SERVICE*	$630/day

*Full-service price includes equipment rental and data collection, it does not include image analysis, statistical analysis, or plant growth. Options are available for these add-on services.

3D Printing

self-service equipment rental



Summary

3D scanners and printers are available for making custom parts, laboratory supplies, demonstration materials, and more. Bring a 3D print file, or scan an object to replicate it. Full-service part design and printing is available if you do not want to print yourself.

HandyScan 3D Scanner - Prusa i3 3D Printer - MP Cadet 3D Printer - Fortus 250mc 3D Printer

PRICING

TRAINING	$166
SELF-SERVICE & FULL-SERVICE	Projects are priced by the amount of material used and personnel time needed. Contact us with your desired print job for a quote.

Example 3D prints

- Lab trays and racks
- Drone parts
- Educational and marketing displays
- Electronics casing
- Pipette stands
- Model plants
- ... and more!

Full-Service Packages

Our most advanced technologies and highest throughput.

PHENOTYPING@DANFORTHCENTER.ORG

Have a more complex project that involves more Core Facilities? We have Core Facility Projects available for your longer, larger projects.

Full-service packages

Packages start at: **$5,000/experiment**

Full-service packages include data collection, image analysis, and statistical analysis.

See package descriptions on the next pages for pricing, example results, and what's included. There are no additional indirect costs.

The Process:

- Make an inquiry by emailing phenotyping@danforthcenter.org
- (Optional) Complete a Non-Disclosure Agreement (NDA) to discuss your technology.
- We provide you a quote dependent on the scope of your project.
- Complete a biosafety intake form
- Complete a Statement of Work and Material Transfer Agreement.
- We conduct the experiment and provide you with both raw and analyzed data.

Image-based Phenotyping

Provides up to 20 quantitative plant phenotypes measured from images.

Bellwether Facility

Up to 1,140 small to medium sized plants, imaged from the top and side-views using a conveyer belt system. Plants are automatically weighed, watered, and imaged daily.

Raspberry Pi

Up to 1,000 small plants, imaged hourly during daytime from the top-view in a growth chamber.
A time-lapse video is provided in addition to phenotype data.

UAV and satellite

Analysis of field images collected with UAV and satellite for measurements of canopy cover, plant height, NDVI, and more. Flights available in the St. Louis metro area.

Minirhizotron root imaging

Imaging of plant root growth over time in a greenhouse through plastic tubes in the soil.

Custom imaging

Imaging of plants of all sizes grown in greenhouse, growth chamber, or field using the CropReporter, Photo Studio, or other custom setup.

Weight-based Phenotyping

DiTech PlantArray

Up to 40 medium to large-sized plants in two growth chambers. Weight-based measurements provide plant growth and water-use phenotypes.

Bellwether Facility

full-service package

Summary

The Bellwether Facility integrates plant growth and imaging on a conveyer belt to study plant responses to different environmental conditions and treatments. The facility offers daily RGB imaging and weighing to monitor plant growth, morphology, water-use, and stress responses.

Plant sizes: small-medium **Measurements collected:** automated **Number of plants**: 1,140

CLICK HERE TO WATCH A VIDEO DESCRIPTION

Data collected

- **Plant growth** (16+ traits): Height, leaf area, convex hull, growth rates, and more!
- **water-use**: Daily transpiration, water-use efficiency, etc.
- **Stress responses**: Color, NDVI, relative growth, and more!

PRICING

FEE PER EXPERIMENT	$3,150
FEE PER WEEK ON THE SYSTEM	$9,050
DATA ANALYSIS	$3,150

Example: A two-week-long experiment = $3,150 + 2 x $9,050 + $3150 = $24,400

Example applications

Environmental responses

Measure the effect of drought, humidity, light intensity, fertilizer content, salt, or air temperature on plant growth. Perform GWAS to determine genetic loci of interest.

Product effectiveness

Determine the impact of soil microbiomes, agricultural products, and genetics on plant growth and stress responses. Identify the impact of microbes on specific plant traits.

What's included

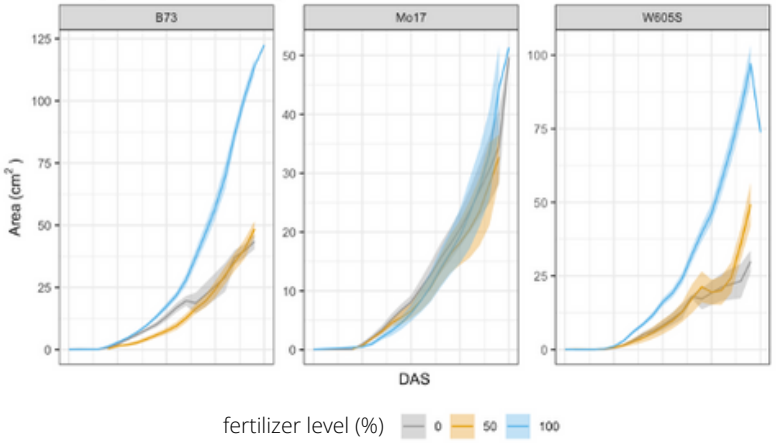
- All equipment operation, maintenance, and on-call support
- Consumables, soil, and growth space
- 6-month data storage
- Raw data (~6,000 images per day)
- Image analysis for ~20 traits
- Statistical analysis and plotting of top 4 traits
- **Not included:**
  - Labor for planting and disposal (can be added for additional hourly charge)
  - Experimental design (can be added for additional charge)

Bellwether Facility

full-service package

Example results - Maize responses to abiotic stress

Researchers assessed 47 diverse maize varieties until 21 days of age (stage V5) for their response to nitrogen deficiency, phosphorous deficiency, drought, and heat stress. Evaluation of color, plant size, shape, and water-use determined the most tolerant maize varieties to each stress. Results below show how three of these varieties responded to nitrogen stress - Mo17 was most tolerant.



100% fertilizer

50% fertilizer

Selected publications from our facility

Ellsworth, Patrick Z., et al. "A Genetic Link between Leaf Carbon Isotope Composition and Whole-Plant water-use Efficiency in the C4 Grass Setaria." The Plant Journal: For Cell and Molecular Biology, vol. 102, no. 6, June 2020, pp. 1234–48, https://doi.org/10.1111/tpj.14696.

Shakoor, Nadia, et al. "Genomewide Association Study Reveals Transient Loci Underlying the Genetic Architecture of Biomass Accumulation under Cold Stress in Sorghum." bioRxiv, 8 Sept. 2019, p. 760025, https://doi.org/10.1101/760025.

Possible variables

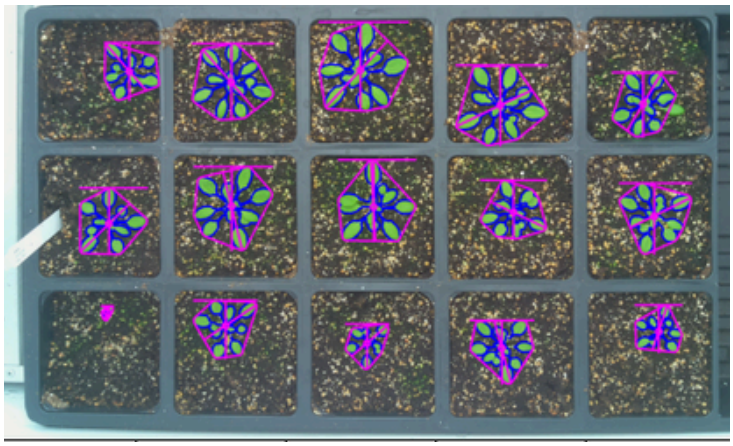
- **Environmental parameters:**
  - Temperature (15 - 42 degrees C)
  - Humidity (20 - 80%)
  - Light intensity (0 - 800 umol)
  - Day length
- **Growth parameters:**
  - Soil type
  - Microbiome
  - Nutrient application
  - Drought (by soil moisture concent)
- **Biotic stress:** viruses, bacteria, fungi (BSL1)

Comparison to other methods

- **Limitations:**
  - Plant size: seedling - 2 feet tall/wide
  - water-use measured 1-2 times per day
  - water-use efficiency calculated by leaf area, not plant biomass
- **Advantages:**
  - Imaging and weighing is automated
  - Plants are watered a set amount, or based on weight - this is the only method for controlled drought studies based on plant water-use and not total water removal

Raspberry Pi

full-service package



Summary

Capture images once per hour from the top-view in a growth chamber. In addition to a time-lapse video of growth, image analysis provides high-resolution germination and growth measurements.

Plant sizes: small-medium **Measurements collected:** automated **Number of plants**: 1,000

CLICK HERE TO WATCH AN EXAMPLE TIME-LAPSE VIDEO

Data collected

- **Plant growth** (16+ traits): Width, leaf area, convex hull, growth rates, and more!
- **Stress responses**: Color, NDVI, relative growth, and more!
- **Timelapse video** of plant growth

PRICING

FEE PER EXPERIMENT	$1,680
FEE PER WEEK ON THE SYSTEM	$735
DATA ANALYSIS	$2,520

Example: A two-week-long experiment = $1,680 + 2 x $735 + $2,520 = $5,670

Example applications

Environmental responses

Measure the effect of drought, humidity, light intensity, fertilizer content, salt, or air temperature on plant growth. Perform GWAS to determine genetic loci of interest.

Product effectiveness

Determine the impact of soil microbiomes, agricultural products, and genetics on plant growth and stress responses. Identify impact of microbes on specific plant traits.

What's included

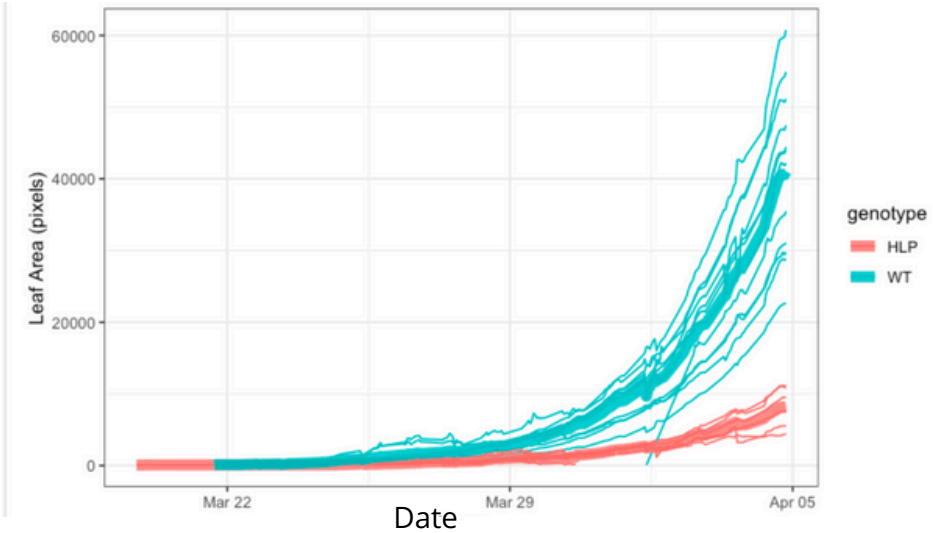
- All equipment operation, maintenance, and on-call support
- Consumables, soil, and growth space
- 6-month data storage
- Raw data (~1,000 images per day)
- Image analysis for ~20 traits
- Statistical analysis and plotting of top 4 traits
- **Not included:**
  - Labor for planting and disposal (can be added for additional hourly charge)
  - Experimental design (can be added for additional charge)

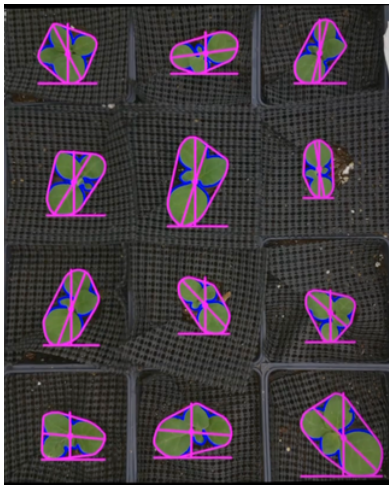
Raspberry Pi

full-service package

Example results - Tobacco germination and growth rates

Researchers compared two tobacco varieties. Hourly imaging enabled measurement of germination rate, number of plants to germinate, the plant growth rate, and the size, shape, and color throughout the experiment. Color provided a measurement of plant health by demonstrating chlorosis (yellowing) of plant tissue.





Selected publications from our facility

Tovar, Jose C., et al. "Raspberry Pi–powered imaging for plant phenotyping." Applications in Plant Sciences 6.3 (2018): e1031.

Panda, Kaushik, et al. "The plant response to high CO2 levels is heritable and orchestrated by DNA methylation." New Phytologist 238.6 (2023): 2427-2439.

Possible variables

- **Environmental parameters:**
  - Temperature (15 - 42 degrees C)
  - Humidity (20 - 80%)
  - Light intensity (0 - 800 umol)
  - Day length
  - Carbon dioxide (100 - 1200 ppm)
- **Growth parameters:**
  - Soil type
  - Microbiome
  - Nutrient application
  - Drought and flooding
- **Biotic stress:** viruses, bacteria, fungi (BSL2)

Comparison to other methods

- **Limitations:**
  - Plant size: seed to 4-inch diameter plants
  - Top-view imaging only
  - Watering is not automated, and no plant weights or water-use is measured
- **Advantages:**
  - Imaging is automated and captured every hour for high temporal sensitivity
  - Ideal method for measuring germination rates
  - Large number of plants can be measured in each experiment

DiTech PlantArray

full-service package

Summary

The DiTech PlantArray weighs plants every 3 minutes for time-sensitive measurements of plant growth and plant water-use. Two growth chambers (each with 20-pot capacity) enable evaluation of the effects of environment, genetics, and agricultural products.

Plant sizes: medium-large **Measurements collected:** automated **Number of plants**: 40

Data collected

- **Plant growth**: Whole-plant biomass estimated by the system, and measured manually at three timepoints.
- **water-use**: Daily transpiration, transpiration rate, normalized daily transpiration, normalized transpiration rate, and water-use efficiency (WUE)

PRICING

FEE PER EXPERIMENT	$2,725
FEE PER WEEK ON THE SYSTEM	$3,050
DATA ANALYSIS	$1,470

Example: A two-week-long experiment = $2,725 + 2 x $3,050 + $1,470 = $10,295

Example applications

Environmental responses

Measure the effect of drought, humidity, light intensity, fertilizer content, salt, or air temperature on plant water-use, including transpiration rate and water-use efficiency.

Product effectiveness

Determine the impact of soil microbiomes, agricultural products, and genetics on plant growth and stress responses. Identify impact of microbes on plant water-use dynamics.

What's included

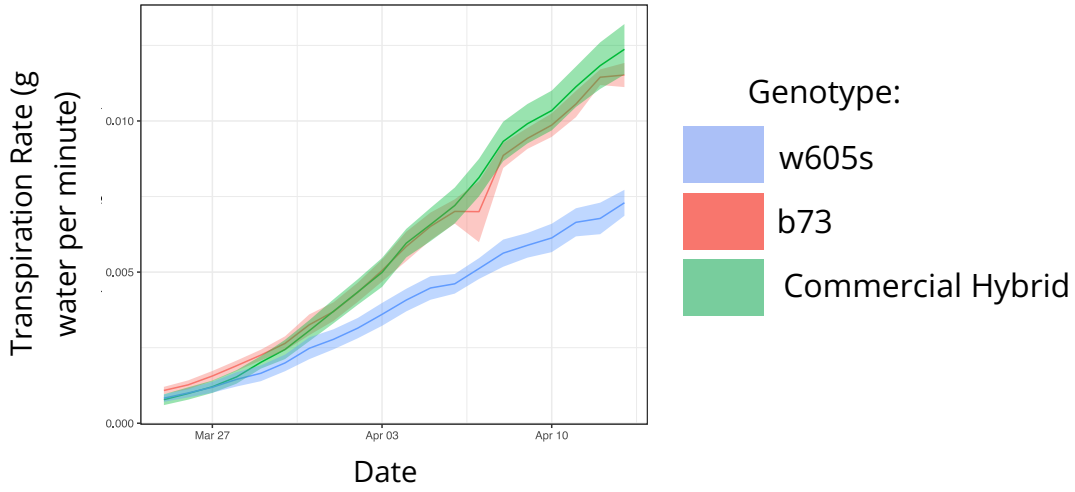
- All equipment operation, maintenance, and on-call support
- Consumables, soil, and growth space
- 6-month data storage
- Raw data (weight and weather data)
- Statistical analysis and plotting for ~5 traits
- **Not included:**
  - Labor for planting (can be added for additional hourly charge)
  - Experimental design (can be added for additional charge)

DiTech PlantArray

full-service package

Example results - Maize water-use efficiency

Researchers compared three maize varieties for their transpiration rate, plant size, and water-use efficiency under control and drought conditions. A drought-tolerant variety, w605s, was identified for its lower transpiration rate and higher water-use efficiency (WUE).



Selected publications from other DiTech facilities

Appiah, Mercy, et al. "Drought response of water-conserving and non-conserving spring barley cultivars." Frontiers in plant science 14 (2023): 1247853.

Wu, Xinyi, et al. "Unraveling the genetic architecture of two complex, stomata-related drought-responsive traits by high-throughput physiological phenotyping and GWAS in cowpea (Vigna. Unguiculata L. Walp)." Frontiers in Genetics 12 (2021): 743758.

Possible variables

- **Environmental parameters:**
  - Temperature (15 - 42 degrees C)
  - Humidity (20 - 80%)
  - Light intensity (0 - 800 umol)
  - Day length
  - Carbon dioxide (100 - 1200 ppm)
- **Growth parameters:**
  - Soil type
  - Microbiome
  - Nutrient application
  - Drought
- **Biotic stress:** viruses, bacteria, fungi (BSL2)

Comparison to other methods

- **Limitations:**
  - No images collected
  - 40 total plants available per experiment
  - Plant biomass is estimated in most experimental designs
- **Advantages:**
  - Best available method for measuring plant water-use dynamics
  - Larger pot sizes and plant size capacity than other systems
  - Automated watering and high temporal sensitivity

Core Facility Projects

Larger projects that involve multiple Core Facilities, bigger questions, and for your needs not covered in standard packages.

PHENOTYPING@DANFORTHCENTER.ORG

Core Facility Projects

Projects start at: **$20,000/project**

Core Facility Projects are for large, in-depth projects involving multiple Core Facilities or multiple experiments. These include additional staff time, unique designs, and more.

The Process:

- Make an inquiry by emailing phenotyping@danforthcenter.org
- Complete a Non-Disclosure Agreement (NDA) to discuss your technology.
- We provide you a quote dependent on the scope of your project.
- Complete a biosafety intake form
- Complete a Statement of Work and Material Transfer Agreement.
- We conduct the experiments, you get back both raw and analyzed data.

Example: Research and Development Project

A Company has a new product that they believe affects plant growth. However, they do not have sufficient evidence for its effect, or know the mode of action. They do not have the staff or expertise to design and conduct experiments. Understanding this product is important to their patent application and to raising funds.

The designed project included:

- Plant growth and care by the Plant Growth Facility
- Phenotyping to determine effect of product by the Phenotyping Core Facility
- Sampling and metabolite analysis for mode of action by the Bioanalytical Chemistry Facility
- Data analysis, statistics, and plotting by the Data Science Core Facility
- Consulting, experimental design, and reports written by the Core Directors

Example: Validation Project

A Company has a new product and initial data to support its effect on plant growth. They are in need of a second, independent validation of the effect on plants.

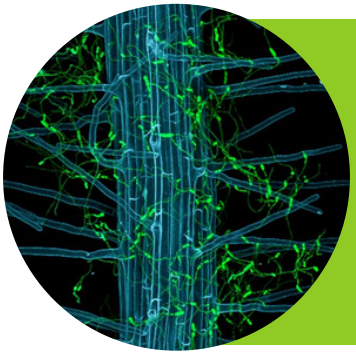
The designed project included:

- Plant growth and care by the Plant Growth Facility
- Phenotyping to determine effect of product by the Phenotyping Core Facility
- Data analysis, statistics, and plotting by the Data Science Core Facility
- Consulting, experimental design, and reports written by the Core Directors

Core Facilities

Learn more about what the Core Facilities at Danforth have to offer.

PHENOTYPING



ADVANCED BIOIMAGING LABORATORY

FIELD RESEARCH SITE

PLANT GROWTH FACILITY

PLANT TRANSFORMATION

DATA SCIENCE

BIOANALYTICAL CHEMISTRY

DANFORTHCENTER.ORG/CORE-FACILITIES

Ready to start?

If you need plant phenotyping,
data analysis, training, and more,
email us to get started!

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Learn more about all of the
Danforth Center Core Facilities:

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