WORKSHOP

CartograPlant workshop: Integrating, visualizing and analyzing genotype, phenotype, and environmental data from geo-referenced plants

Future plant health and productivity will depend on the identification of genes controlling traits providing plant resilience to biotic and abiotic stresses. This identification requires the integration of genotypic, phenotypic and environmental data. CartograPlant is the first web-based application that integrates genotype and phenotype data for model and non-model plant systems with global environmental layers. This Tripal-based (tripal.info/) field-to-analysis framework connects data collection, data submission, ontology-based metadata annotation, and analytics directly to high performance computing resources. Genotype and phenotype metrics are collected through direct submission of studies at the time of publication via the FAIR data submission module TPPS, or through the biocuration efforts of the affiliated databases (TreeGenes, BIEN, Dryad). Georeferenced trait data can be also submitted using TreeSnap (treesnap.org/), mobile apps for field-based data and sample collection. Then, choose from a menu of appropriate workflows using the Galaxy platform (galaxyproject.org/). This workshop will provide hands-on training with data search, visualization, and plant population analysis.

This workshop is a product of an AG2PI seed grant.

Presenters:

Dr. Irene Cobo-Simón led the development of the web-based application CartograPlant during her first postdoc at UConn, focusing on the development of integrative and robust analytical workflows. She is currently a postdoctoral fellow at the Institute of Forest Science.

Gabriel Barrett is pursuing a MSc. degree in biology and engages in the CartograPlant project. His work focuses on the development of bioinformatic workflows like NextFlow and Galaxy that make data analysis more streamline and efficient.

Emily Grau is a Genomics Data Curator and Web Developer working with forest tree community database, TreeGenes. Her interests include collaborative Tripal software development and developing automated and manual curation pipelines for genomic data and metadata.

Risharde Ramnath holds a MSc. in Engineering Management and BSc. Computer Science from the University of the West Indies. He is the lead developer at TreeGenes continuing to further develop CartograPlant.

Margaret Staton is an Associate Professor of Bioinformatics in the Entomology and Plant Pathology Department at the University of Tennessee, Knoxville.

Jill Wegrzyn is an Associate Professor of Ecology and Evolutionary Biology in the Department at the University of Connecticut where she leads the Plant Computational Genomics Lab.

July 12, 2023
10:00 AM - 12:30 PM
(Central Time, UTC–5)

Purpose:
Hands-on training on how to utilize the CartograPlant app for data searching, visualization, and plant population analysis.

Register for this Zoom virtual workshop:
https://tinyurl.com/AG2PI-w23

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

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

Registration is not required to view the recording.

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