



Crops *in silico* Symposium & Hackathon Agenda

Times listed below are CDT

Virtual meeting link: <https://go.illinois.edu/CiSSymposium>

Wednesday, May 11

8:30 a.m. — Introduction and Welcome

- Opening remarks from Madhu Khanna, Interim Director, Institute for Sustainability, Energy, and Environment (iSEE)

8:40 a.m. — Facilitation Explanation and Meeting Expectations

8:45 a.m. — Keynote

- Leah Band, Associate Professor, University of Nottingham: “Modeling Hormonal Control of Root Development”

9:30 a.m. — Break

9:40 a.m. — Hackathon Model Demonstrations

- 9:50 – OpenSimRoot, presented by Ernst Schäfer, Ph.D. Candidate, University of Nottingham
- 10:15 – CPlantBox, presented by Mona Giraud & Daniel Leitner, Forschungszentrum Jülich Institute of Crop science and Resource Conservation
- 10:40 – OpenAlea, presented by Christophe Pradal, Researcher, CIRAD Département Systèmes Biologiques

11:05 a.m. — Break

11:15 a.m. — Speaker Session I

- 11:15 — Adrien Heymans, Ph.D. Candidate, UCLovain Earth and Life Institute: “Analysis of the Influence of Local Root Traits on Global Root Hydraulic Dynamics”
- 11:40 — Yin Hoon Chew, Postdoctoral Research Associate, University of Birmingham: “Progress and Challenges of Building a Whole-Cell Model of Human Embryonic Stem Cells”

12:05 p.m. — Wrap Up, Goals for Next Day, Adjourn

Thursday, May 12

1 p.m. — Recap of Day 1 and Introduction to Goals of Day 2

1:05 p.m. — Interactive Posters, Round I

- 1:05 — One-minute poster previews
- 1:15 — Interactive poster breakout rooms
 - *Sruthi Surendran - Coupling HYDRUS 1-D and BioCro using Yggdrasil*
 - *George Worrall - Crop Model Cultivar Parameter Estimation through Learned Simulation Inversion*
 - *Ximin Piao - Implementing Transport-Resistance Carbon Allocation in BioCro*

- *Bethany Holland - Determining the effect of nitrogen symbiosis on soybean growth with the use of metabolic modeling*
- *Ravi Kumar - Deep learning architecture for exploring network properties of rice in response to multiple pathogens*

1:25 p.m. — Break

1:30 p.m. — Speaker Session II

- 1:30 — David Pattemore, Senior Lecturer, University of Auckland: “Mathematical Models of Crop Pollination Systems”
- 1:55 — Charlie Messina, Professor of Horticultural Sciences, University of Florida: “Crop Improvement for Climate Change”
- 2:20 — Junqi Zhu, Crop Modeler New Zealand Institute for Plant and Food Research: “Simulating Organ Biomass Variability and Carbohydrate Distribution in Perennial Fruit Crops”

2:45 p.m. — Break

2:55 p.m. — Software Lightning Talks

3:25 p.m. — Adjourn

Friday, May 13

1 p.m. — Recap of Day 2 and Introduction to Goals of Day 3

1:05 p.m. — Interactive Posters, Round II

- 1:05 — One-minute poster previews
- 1:15 — Interactive poster breakout rooms
 - *Alex Tran - Dynamic maize metabolic gene regulatory network construction by regression analysis*
 - *Noah Sprent - A computational model of metabolic fluxes quantifies the energetics of stomatal dynamics*
 - *Arnaud Bouvry - Digital Twin of a plant factory - a holistic approach for smart research and production*
 - *Elena Pelech - Disentangling Trait Plasticity to Improve the Productivity of the Solar Corridor Intercrop System*

1:25 p.m. — Break

1:30 p.m. — Speaker Session III

- Tracy K. Teal, Open Source Program Director, RStudio: “Managing an Open-Source Project”

1:55 p.m. — Break

2:05 p.m. — Hackathon Model Demonstrations

- 2:05 — Helios, presented by Brian Bailey, Assistant Professor of Plant Sciences, University of California
- 2:35 — Break
- 2:45 — BioCro II, presented by Edward Lochocki, Postdoctoral Researcher, & Justin McGrath, Research Plant Physiologist, U.S. Department of Agriculture Agricultural Research Service

4:45 p.m. — Adjourn

Event Sponsors

