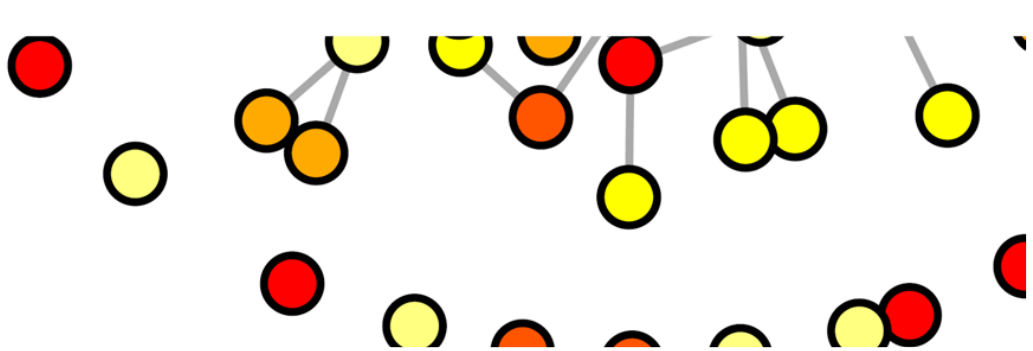

Network Analysis in Plant Pathology Research: Disentangling Complex Data

Course materials at:

github.com/GarrettLab/NetworkWorkshopAPS2024

Thanks to UF Plant Pathology
for co-sponsoring this workshop!

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PLANT
PATHOLOGY

Workshop teachers

Course materials at:
github.com/GarrettLab/NetworkWorkshopAPS2024

Ashish Adhikari, PhD

Romaric Mouafo Tchinda, PhD

Aaron Plex Sulá (goes by Plex)

Jacob Robledo Buritica, MS

Learning goals

Course materials at:
github.com/GarrettLab/NetworkWorkshopAPS2024

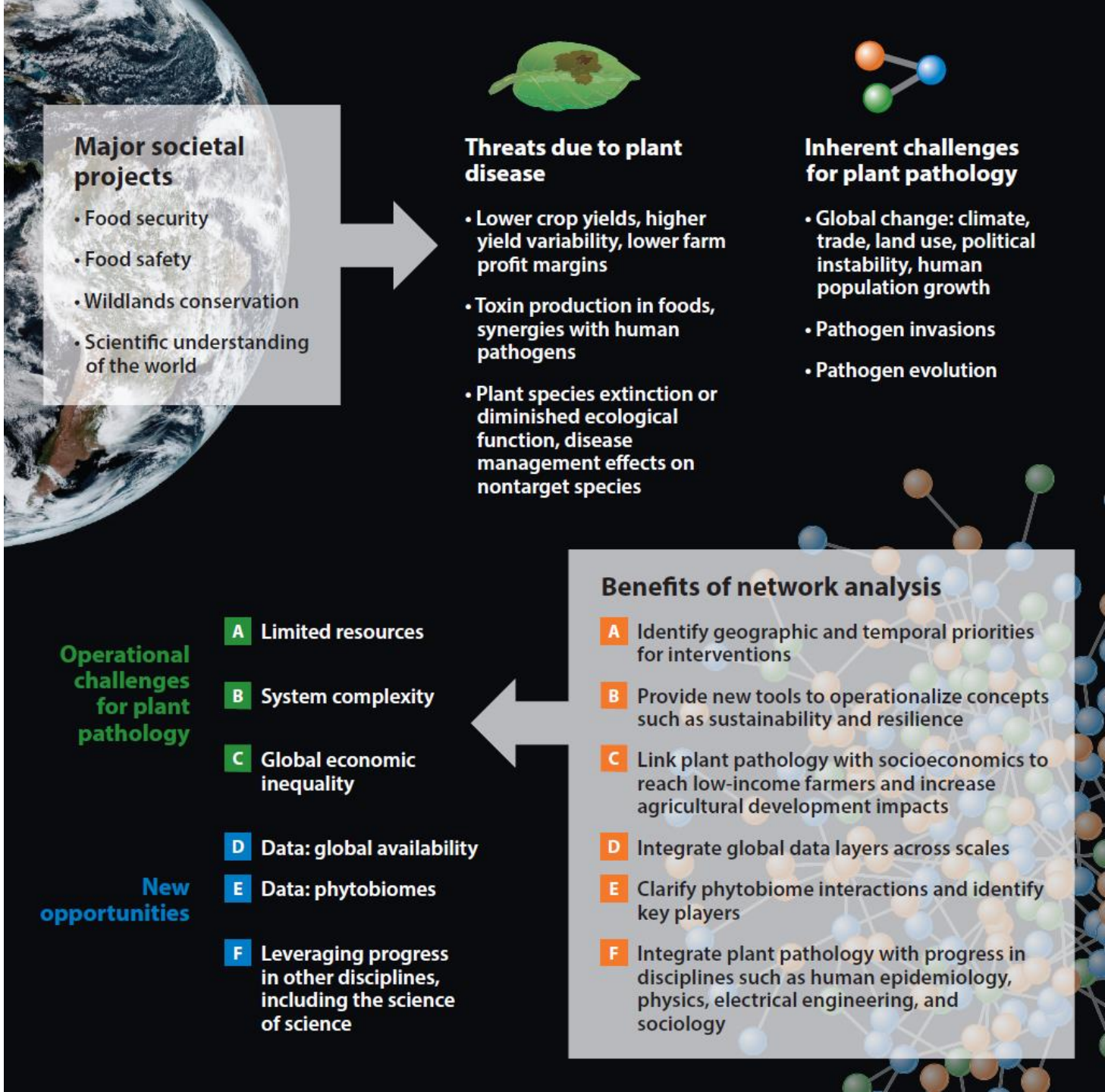
- Experience with R
  - No? Our goal is for you to get started with R, so you are ready to explore R more in the future
  - Yes? Our goal is for you to come away ready to use some new applications

- Experience with network analysis
  - No? Our goal is for you to get a taste of how network models may be useful in your research, ready for more exploration
  - Yes? Our goal is for you to come away ready to use some new applications in R

Annual Review of Phytopathology

Network Analysis: A Systems Framework to Address Grand Challenges in Plant Pathology

K.A. Garrett,[1,2,3] R.I. Alcalá-Briseño,[1,2,3]
K.F. Andersen,[1,2,3] C.E. Buddenhagen,[1,2,3,4]
R.A. Choudhury,[1,2,3] J.C. Fulton,[1,2,3]
J.F. Hernandez Nopsa,[1,2,3,5] R. Poudel,[1,2,3]
and Y. Xing[1,2,3]



Outline for workshop (1-5 pm)

Course materials at:
github.com/GarrettLab/NetworkWorkshopAPS2024

Introduction to networks (Plex)

Introduction to R (Romaric)

Break

Networks in R (Romaric and Plex)

Break

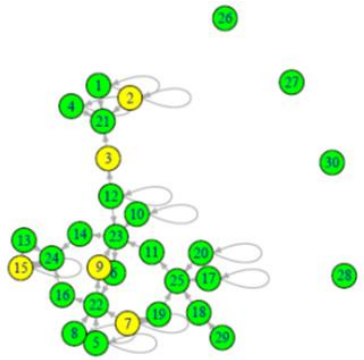
Epidemic networks (Jacob)

Break

Microbiome networks (Ashish)

R2M toolbox and conclusions (Karen)

Group introductions



- Your name
- Your institution
- The general topics you address in your work
- What type of questions would you like to answer with network analysis?
- If you already use network analysis, what is an example of your application?
- Fun fact about you

Course materials at:

github.com/GarrettLab/NetworkWorkshopAPS2024

Join us at APS Plant Health 2024 – Garrett Lab

Ashish Adhikari - Postdoctoral Researcher

1. WORKSHOP: Network Analysis : Microbiome network in R. July 27 1:00 PM – 5:00PM CDT
2. R2M toolbox for rapid risk assessment supporting mitigation of pathogens and pests: Perspectives on rice health in Nepal. July 30 10:45AM – 11:00 AM CDT
3. Wildfire smoke in a One Health framework: Network analysis to disentangle fungal-bacterial microbiome complexity and predict pathogen associations.

July 29, 2024, 4:00 PM – 4:45PM CDT

Jacobo Robledo - PhD Student

1. Digital Innovations in the Surveillance and Management of Banana and Plantain Diseases in Colombia. July 30 at 1:45 PM – 2:15 PM CDT in "Melhus Graduate Student Symposium"

Berea Etherton, PhD

Disaster plant pathology: smart solutions for threats to global plant health from natural and human-driven disasters.

July 30 @ 4:00, poster P-212, in Epidemiology II

Aaron I. Plex Sulá - PhD Student

1. Global host-pathogen infection networks in major terrestrial agroecosystems. July 28 @ 1:45 – 2:00 PM in session "Microbiome"
2. The global population genetic structure of Potato spindle tuber viroid in major agroecosystems. P-529 July 29 @ 4:45 – 5:30 PM CDT.
3. The multi-centennial accumulation of new infectious diseases in major agroecosystems (1500-2020). P-400 July 30 @ 4:45 – 5:30 PM CDT.

Romaric Mouafo-Tchinda - Postdoctoral Researcher

1. Global proactive surveillance and mitigation strategies for laurel wilt under climate change. July 29 @ 4:45PM, poster P-581, in Late-Breaking I
2. Pathogen and pest risk across climate gradients in the Great Lakes region of Africa for banana, cassava, potato, and sweetpotato. July 30 @ 4:00PM, poster P-216, in Epidemiology II
3. Humanitarian crises in Cameroon and Ethiopia: pathogen and pest threats to vegetatively propagated crops. July 30 @ 4:45PM, poster P-456, in Pathogen Survey II

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