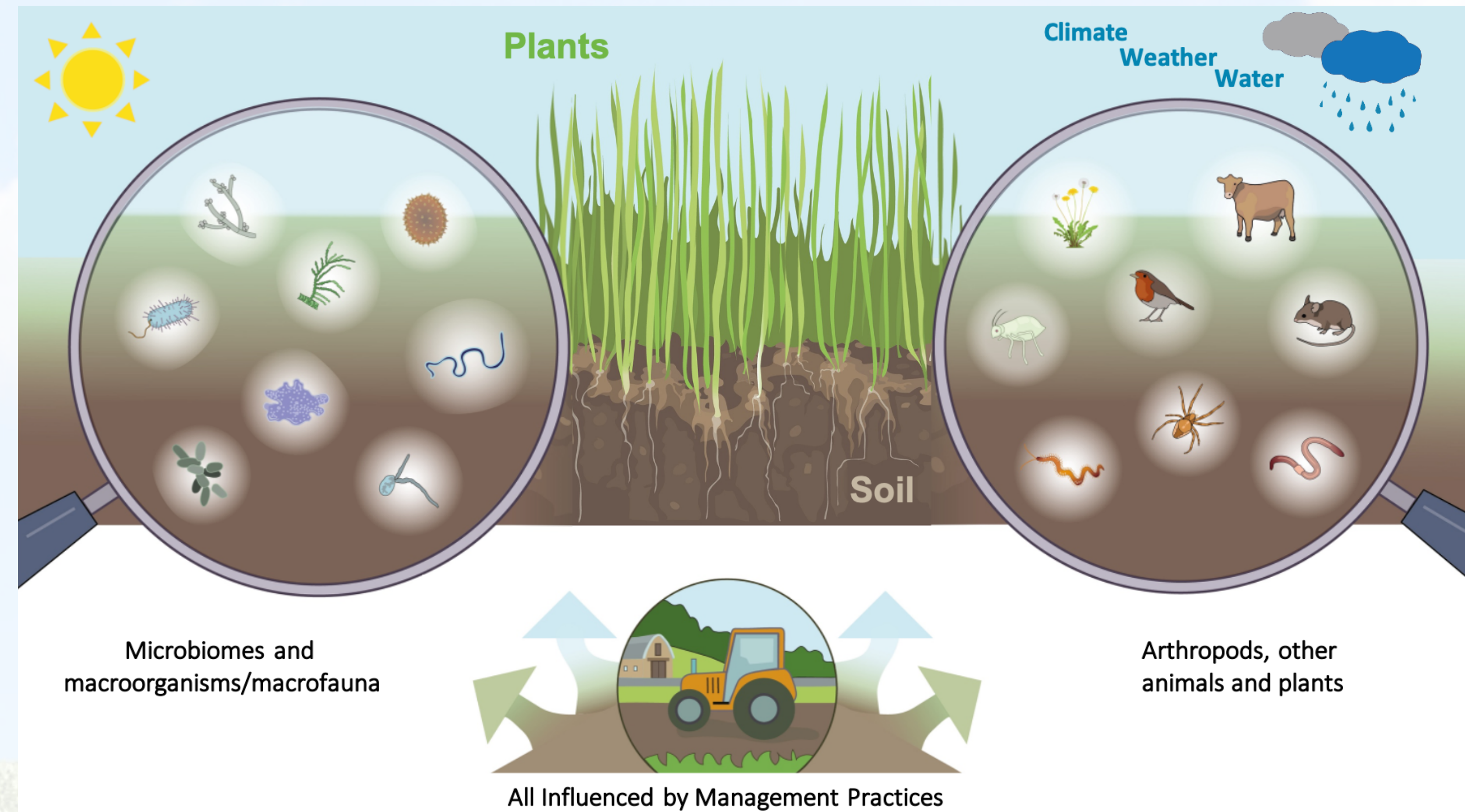# INTERNATIONAL ALLIANCE FOR PHYTOBIOMES RESEARCH

THE PHYTOBIOMES ALLIANCE

The mission of the International Alliance for Phytobiomes Research is to establish a science and technology foundation for site-specific, phytobiome-based enhancement of sustainable food, feed, and fiber production.

PHYTOBIOMES: COMPLEX SYSTEMS OF PLANT-BASED AGRICULTURE

Phytobiomes consist of all organisms living in, on, or around plants (e.g., microbes, animals, other plants), and the environment (i.e., soil, air, water, and climate).


Plants · Climate · Weather · Water · Soil

Microbiomes and macroorganisms/macrofauna

Arthropods, other animals and plants

All Influenced by Management Practices

FUNDED COORDINATED PROJECTS

- **Novel microbiome technologies to increase profitability for Australian horticulture**
  Funded by Hort Innovation, Australia – Coordinator: Kirsty Bayliss, Murdoch University

- **USCCN – United States Culture Collection Network**
  Funded by the National Science Foundation (NSF), USA – Coordinator: Dusti Gallagher, Phytobiomes Alliance

- **Genome-Based Circumscription and Phenotyping of Regulated Microbes, Especially the Select Agent *Ralstonia solanacearum* – LINS**
  Funded by the USDA Animal Plant Health Inspection Service (APHIS), USA – Coordinator: Kellye Eversole, Phytobiomes Alliance

- **MicrobiomeSupport: Harmonising Microbiome Research Methods & Funding Worldwide**
  Funded by the EU Horizon 2020 research and innovation programme – Coordinator: Angela Sessitsch, AIT, Austria

- **Succession of Microbial Assemblages During Seed Development – SEEDS**
  Funded by the Agence National de la Recherche (ANR), France – Coordinator: Matthieu Barret, INRAE, France

- **Inheritance of Abiotic Stress Tolerance Through Seed Microbiome Modification**
  Funded by the National Institute of Food and Agriculture (NIFA), USA
  Coordinators: Ashley Shade & Chad Niederhuth, Michigan State University, USA; Matthieu Barret, INRAE, France

- **CIRCLES – Controlling mIcRobiomes CircuLations for bEtter food Systems**
  Funded by the EU Horizon 2020 research and innovation programme – Coordinator: Marco Candela, University of Bologna, Italy

- **MASTER – Microbiome Applications for Sustainable food systems through Technologies and EnteRprise**
  Funded by the EU Horizon 2020 research and innovation programme – Coordinator: Paul Cotter, Teagasc, Ireland

- **Metagenom Bio Life Science – Culture Independent Testing and Monitoring for Controlled Environment Food Safety and Crop Protection**
  Funded by the Ontario Ministry of Agriculture, Food and Rural Affairs, Ontario Agri-Food Research Initiative
  Coordinator: Trevor Charles, Waterloo Centre for Microbial Research, Canada

- **The UK Crop Microbiome Cryobank**
  Funded by the Biotechnology and Biotechnology Sciences Research Council (BBSRC) – UK Research Innovation
  Coordinator: Matthew Ryan, CABI

- **SUCSEED – Stop the use of pesticides on seeds**
  Funded by the Agence National de la Recherche (ANR), France – Coordinator: Matthieu Barret, INRAE, France

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STRATEGIES AND PRIORITIES OF THE PHYTOBIOMES ALLIANCE

VISION

Macroorganisms Plants Animals Insects · Management Practices · Microbiomes · Physical Environment
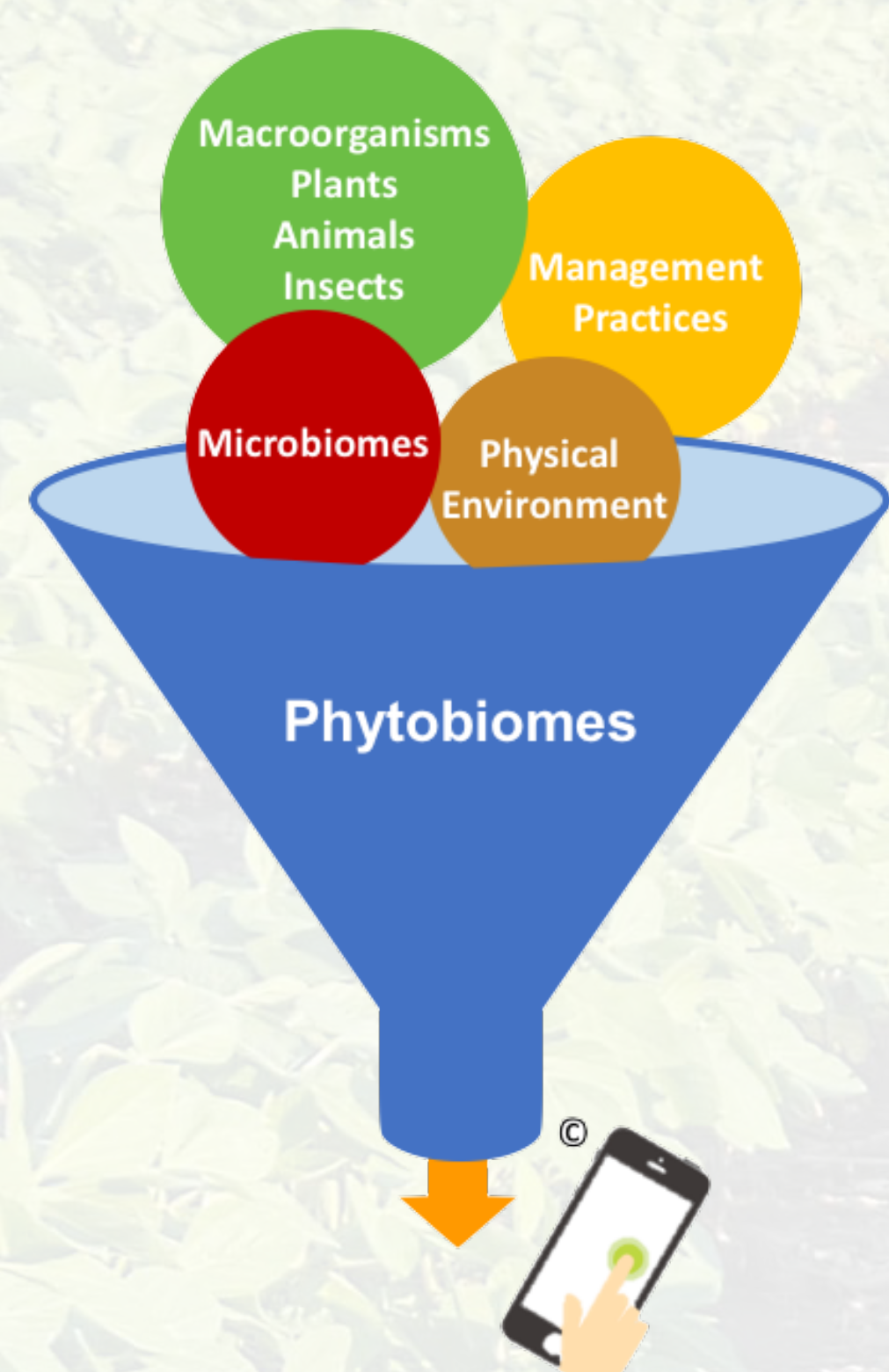
Phytobiomes

Phytobiome-enabled next-generation precision agriculture

STRATEGIES

- **Identify research, resource and technology gaps and develop roadmaps to fill them**
- **Coordinate and manage projects to address gaps**
- **Facilitate international and public-private collaborations**
- **Focus on pre-competitive science**
- **Develop an interdisciplinary community of researchers committed to advancing phytobiomes science**
- **Empower industry growth and profitability**

SHORT TERM PRIORITIES

- Enhance understanding of the interactions between plants, microbiomes, and other components of phytobiome systems
- Link site-specific and temporal geophysical and biological data
- Develop databases that support correlation studies between biological and geophysical phytobiome components
- Draft standards, protocols, check-lists (minimum information, sampling, reference datasets, regulatory requirements...)
- Deploy genome sequence-based classification system for microbes
- Design preliminary models for several agroecosystems (crops, forage, trees...)
- Draft regulatory science roadmap for microbials

ORGANIZATIONAL STRUCTURE

Board of Directors — Establishes overall vision

Executive Director

Office — Oversees and manages daily operations

Scientific Coordinating Committee
Financial Sponsors & Project Leaders
Establishes priorities, identifies gaps, and develops strategic plans

Working Groups
Lead efforts on specific topics:
- Microbiomes
- Regulatory
- CEA – Controlled Environment Agriculture
- Animal Microbiomes
- Soil Health

PHYTOBIOMES ALLIANCE SPONSORS

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For more information about becoming a sponsor or ways to be involved contact Dusti Gallagher, gallagher@eversoleassociates.com or Lori Leach, leach@eversoleassociates.com

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