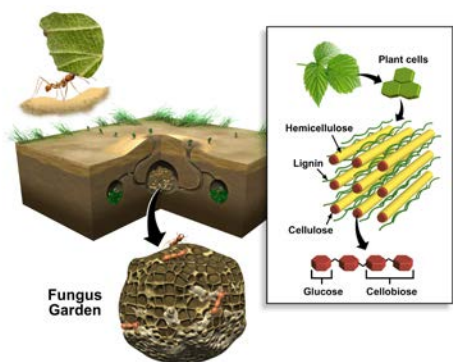


## Ant Farmers



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Researchers at PNNL study a fascinating symbiotic system between leaf-cutter ants, fungi, and bacteria where ants actively cultivate fungus to make food for the colony, much like humans farm crops as a food source. Scientists take samples from the fungus garden and analyze them for proteins, lipids, and metabolites. By looking at proteomics, lipidomics, and metabolomics (where “-omics” means “the analysis of”), scientists can figure out what roles the ant, fungus, and bacteria uniquely play in this symbiotic process.

**What is a fungus garden?**

**What are the unique roles that ants, plants, fungi, and bacteria play in the fungus garden?**

**What can researchers learn by studying efficient systems in nature?**



Scientists study this ant farming process in order to learn from efficient processes in nature and apply them to human challenges. For example, by understanding how leaf matter is broken down to valuable molecules in fungal gardens, scientists can discover more efficient ways to create biofuels from plant biomass.



For more information, visit:  
[www.pnnl.gov/stem](http://www.pnnl.gov/stem)



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