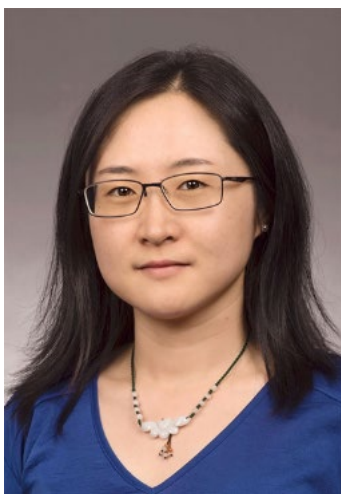


**KANSAS STATE  
UNIVERSITY**  
*Division of Biology Presents:*

**When Microbes Meet Pyrogenic Carbon in Soil: New Insights from  
Biochar Amendment**

*Monday, September 21st, 2026 • 3:30 PM • 232 Ackert Hall*



**Yaqi You**

Associate Professor

Department of Environmental Resources Engineering  
State University of New York College of Environmental Science and Forestry

Producing more crops using less resources and with a lighter environmental footprint represents one of the pressing global challenges. Biochar is a pyrolysis product from diverse inexpensive feedstocks. Its use as a soil amendment can simultaneously achieve carbon sequestration, soil health improvement, crop production enhancement, and greenhouse gas attenuation. But the underlying mechanism remains obscure, which hinders the realization of biochar's full potential. This motivates our investigations into biochar's modulating effects on the soil microbiome that contributes to soil biogeochemistry and plant development. This talk will first discuss our meta-analysis that identifies feedstock choice as a top influential factor for a wide range of soil microbial responses to biochar amendment. The talk will then discuss findings from our controlled laboratory experiments where integrated multi-omics reveals new mechanisms of biochar's modulating effect on the plant-soil-microbe continuum, especially rewired root exudate-microbe interactions in the rhizosphere. Collectively, our research contributes to a molecular understanding of biochar soil amendment with implications for both sustainable agriculture and soil biogeochemistry, and highlights the potential of engineering the rhizosphere through reshaping root-microbe interactions for green agriculture.

If you would like to visit with Dr. Yaqi You, please contact Dr. Lydia Zeglin at [lzeglin@ksu.edu](mailto:lzeglin@ksu.edu).

*Coffee & snacks served preceding the seminar in Ackert Hall, Room 225*