iFAST: The International Forum on Advanced Environmental Sciences and Technology

A series of distinguished seminars by eminent scientists

8 p.m. CST, 9 p.m. EST, Wednesday, Nov. 12, 2025
2 a.m. GMT, 10 a.m. China, Wednesday, Nov. 13, 2025

YIQI LUO
CORNELL UNIVERSITY
https://ecolab.cals.cornell.edu/?member_info&id=52

Yiqi Luo is Liberty Hyde Bailey Professor at Cornell University, USA. He obtained his PhD degree from the University of California, Davis, and did postdoctoral research at UCLA and Stanford University before he worked at Desert Research Institute, the University of Oklahoma and Northern Arizona University. His research program has been focused on addressing three key issues: (1) how global change alters structure and functions of terrestrial ecosystems, (2) how terrestrial ecosystems feedback to regulate climate change, and (3) how ecosystem processes can be effectively manipulated to offer nature-based solutions toward carbon neutrality. To address these issues, Luo's laboratory has conducted field global change experiments, developed terrestrial ecosystem models, synthesized extensive data sets using meta-analysis methods, integrated data and model using data assimilation techniques and knowledge-guided artificial intelligence modeling, and carried out theoretical and computational analysis. Luo has published seven books (including translated and edited ones), 39 book chapters, and more than 600 papers in peer-reviewed journals. He was recognized as Highly Cited Researcher by the Web of Science Group, Clarivate Analytics in 2016-2024. He was elected fellow of the American Association for the Advancement of Science, American Geophysical Union and Ecological Society of America.

Land carbon cycle: Understanding, predicting and manipulating toward bending the climate warming curve

Abstract This talk will present work done by my lab in the past two decades on understanding, predicting, and manipulating land carbon cycle. Specifically, we have revealed a general dynamic pattern that the land carbon cycle changes in a direction toward a moving attractor in response to global change and other external forcings. This general pattern is fully captured conceptually by dynamic disequilibrium and mathematically by a matrix equation, which unifies land carbon cycle models. We have integrated the matrix equation into neural network to improve accuracy of model prediction and discover mechanisms underlying land carbon cycle dynamics. Meanwhile, we have evaluated various carbon dioxide removal strategies using the knowledge gained from our basic carbon cycle research and, thereby, identified burying woody debris from managed forests probably as the most effective, less expensive, easily implemented and highly sustainable strategy. It makes bending the climate warming curve hopeful.

DODGE FAMILY COLLEGE OF ARTS AND SCIENCES
INSTITUTE FOR ENVIRONMENTAL GENOMICS
The UNIVERSITY of OKLAHOMA

中南大學
CENTRAL SOUTH UNIVERSITY

Zoom webinar ID: 934 8142 2012 (zoom.us/j/93481422012)

More details and previous iFAST seminar videos are available on www.ou.edu/ieg/seminars.

Organizing Committee Chair: Jizhong Zhou (University of Oklahoma, USA; www.ou.edu/ieg)
Xueduan Liu, Huaqun Yin (Central South University, China)