

iFAST: The International Forum on Advanced Environmental Sciences and Technology

A series of distinguished seminars by eminent scientists

8 a.m. CDT, 9 a.m. EDT, 1 p.m. GMT, 9 p.m. China

Wednesday, Sept. 25, 2024



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Jeannine Cavender-Bares studies the physiological and evolutionary dimensions of plant ecology that influence community assembly and ecosystem function. Cavender-Bares is the director of the NSF Biology Integration Institute ASCEND (Advancing Spectral Biology in Changing Environments to understand Diversity, www.spectralbiology.org) and is committed to advancing international efforts for global monitoring and assessment of biodiversity and ecosystem services toward sustaining a habitable planet for humanity. She is currently professor of organismic and evolutionary biology at Harvard University and adjunct professor in the Department of Ecology, Evolution and Behavior at the University of Minnesota.

Community assembly at continental scale: Integrating plant spectral, functional and phylogenetic data to understand ecological and evolutionary processes in a major adaptive radiation

Abstract: The ecosystems we observe today are the consequence of deep-time historical biogeographic processes that have a lasting influence on community assembly processes and ecosystem functions that form our life support systems. The oaks (*Quercus*) are an important model clade that illustrate evolutionary legacies for community assembly current ecosystem functions in North America. An important part of this biogeographic history is their diversification across wide-ranging climates and habitats across the continent. The capacity to adapt to a broad span of thermal and hydrologic environments was critical to the adaptive radiation and current dominance of the American oaks. In our current era of rapid global change, the oaks are under threat from pests and pathogens, as well as warming climates that are changing more rapidly than migration rates can keep up with. Novel threat detection methods, in partnership with practitioners, are helping us to link knowledge to action for sustainable management of oak-dominated forests and their ecosystem services.



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