

iFAST: The International Forum on Advanced Environmental Sciences and Technology

A series of distinguished seminars by eminent scientists

8 p.m. CDT, 9 p.m. EDT, Wednesday, May 18, 2022

1 a.m. GMT, 9 a.m. China, Thursday, May 19, 2022



Margaret S. Torn

LAWRENCE BERKELEY
NATIONAL LABORATORY

<https://eesa.lbl.gov/profiles/margaret-s-torn/>

M. S. Torn is an ecologist and biogeochemist who studies the global carbon cycle and climate change. Torn is an internationally recognized expert in soil carbon cycling and the potential for soils to generate positive feedbacks to climate change, as well as being keenly interested in the research challenges regarding ecosystem carbon sequestration. She runs climate change experiments in Arctic tundra and California forests. Torn also leads the AmeriFlux Management Project, serving a network of more than 550 sites across the Americas measuring ecosystem carbon fluxes, with data used by thousands. Torn helped found the first Deep Decarbonization Pathways Project, creating technical road maps for national and sub-national action to protect Earth's climate. Torn has published more than 170 scientific papers. She received the Presidential Early Career Award, has an honorary doctorate from the faculty of Mathematics and Natural Sciences at the University of Zurich, was elected a Fellow of the American Geophysical Union, and is the president of the AGU Biogeosciences Section.

Two Views of the Perturbed Carbon Cycle: Ecosystem feedbacks to warming and decarbonization pathways for the U.S.

In this talk Dr. Torn will discuss recent research on two aspects of carbon and climate change. The first is findings from their deep-soil warming experiment in Blodgett Forest, California. They have documented substantial increases in soil respiration and loss of subsurface soil carbon stocks, and changes in organic matter and microbial composition, after five years of warming (+4°C). These results indicate the potential magnitude and mechanisms of positive feedback between soils and climate warming. The second topic is a recent study of technology pathways to a net-zero (CO₂ emissions) economy in the United States by 2050. This detailed modeling work (Williams et al. AGU Advances, 2021) shows that the U.S. energy and industrial system can become carbon neutral at moderate cost by following ambitious but practical strategies of decarbonizing the electricity system, increasing energy efficiency, electrifying end uses economy-wide, and targeted carbon capture with sequestration or utilization.



INSTITUTE FOR ENVIRONMENTAL GENOMICS
The UNIVERSITY of OKLAHOMA



中南大學
CENTRAL SOUTH UNIVERSITY

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

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

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

The University of Oklahoma is an equal opportunity institution. www.ou.edu/eoo