PURDUE UNIVERSITY | Environmental and Ecological Engineering

EEE Research Seminar

Date: November 2, 2021 at 10:30 AM
Location: via Zoom

https://purdue-edu.zoom.us/j/92218180535

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Designing a Future Global Food Supply Chain for Sustainability

Abstract
The global refrigerated food supply chain, or "cold chain", is a complex system of technology and logistics that helps dictate the security of our food system, the kinds of foods that are available to us, the amount of food waste generated, and the overall environmental impact of the food system. The cold chain is able to preserve the shelf life of perishable foods, reducing the amount of food that is wasted and its embodied GHG emissions. At the same time, energy consumption and refrigerant leakage associated with the existing cold chain is responsible for ~1% of the world's total greenhouse gas (GHG) emissions and represents 3.0-3.5% of GHG emissions in developed economies.

There are still places in the world, such as sub-Saharan Africa, where an unbroken cold chain is not yet reality. The under-developed cold chain represents a significant opportunity to leapfrog current food supply chain technology to reduce global food waste while limiting the amount of GHG emissions associated with the food system.

This seminar will present methods to construct future scenarios within the context of life cycle assessment to identify preferable options for new technology design and policy development that can reduce the environmental impacts of the food system as a whole.

Bio
Shelie Miller is the Jonathan W. Bulkley Collegiate Professor in Sustainable Systems at the School for Environment and Sustainability at the University of Michigan. An environmental engineer by training, Miller's research is highly interdisciplinary, with a focus on life cycle assessment and systems analysis of emerging products. Dr. Miller has been awarded a Presidential Early Career Award in Science and Engineering (PECASE) by the White House and served as a Jefferson Science Fellow through the National Academies of Sciences, Engineering, and Medicine. Her research has been featured by various media outlets, including NPR, TIME, Forbes, Consumer Reports, and The Guardian.