



**PennState**

**AGRICULTURAL AND  
BIOLOGICAL ENGINEERING**

## **Spring 2018 Seminar Series**

### **“Studying Sustainability: Same Problem, Different Resolution”**

Sustainability is an often used and difficult-to-define term. Sustainability broadly means to integrate social, economic, technological, and environmental considerations to meet the needs of current and future populations. Dr. Costello integrates environmental engineering (e.g., process models) with industrial ecology (e.g., materials flow analysis, life cycle assessment (LCA)) to evaluate the sustainability -- in terms of specified physical flows or conditions -- of agricultural and food systems under present and simulated future conditions. She will share the story of the evolution of her work over the past 15 years.

**Presented By  
Dr. Christine Costello**

**Assistant Professor in Industrial and Manufacturing Systems Engineering  
University of Missouri at Mizzou**

Dr. Christine Costello received her B.S. in Environmental Engineering from Temple University (2003), and her M.S. and Ph.D. in Civil and Environmental Engineering from Carnegie Mellon University (2007, 2011) in the Green Design Institute. From 2011-2013 she was a post-doctoral researcher in the Department of Ecology and Evolutionary Biology at Cornell University. From 2013-2017 she was an Assistant Research Professor in the Bioengineering Department at Mizzou and she is currently an Assistant Professor in Industrial and Manufacturing Systems Engineering at Mizzou. She has experience working in private industry and with the Environmental Protection Agency. She is currently involved in numerous projects to develop metrics for evaluating sustainability, with a particular interest in agriculture, food and biomass for energy production, nitrogen cycling and risks to agriculture under future climate scenarios. She is also involved in two major projects to evaluate the impact of future climate on hydrology.

**Wednesday, February 21, 2018**

**12:00 PM**

**304 FOREST RESOURCES LAB**