

**NORTH CAROLINA STATE UNIVERSITY
EDWARD P. FITTS DEPARTMENT OF
INDUSTRIAL AND SYSTEMS ENGINEERING**

ISE 601/801 – Departmental Seminar

**Friday, October 15, 2021
Zoom only**

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Georgia Institute of Technology**

Industrial Engineering for the Sustainability Transition

Abstract:

Meeting the challenge of climate change will require a nearly complete re-creation of the industrial system, including transportation, electricity, manufacturing, commercial enterprises, agriculture, and residential energy systems. Industrial engineers can be at the core of engineering these transitions. The seminar will begin with an overview of how industrial engineers can effectively contribute to addressing sustainability challenges. The seminar will continue with an assessment of adoption of electric vehicles, combining optimization modeling, technology assessment, and environmental life cycle assessment. A low-cost path to light-duty vehicle electrification is identified that reduces costs for both electric and gasoline vehicle owners. Reducing costs requires both managing electric vehicle charging to more fully utilize existing electric generation resources, and delinking the US CAFE vehicle energy efficiency standards for gasoline vehicles from the deployment of electric vehicle.

Bio:

Dr. Valerie M. Thomas is the Anderson-Interface Chair of Natural Systems in the H. Milton Stewart School of Industrial and Systems Engineering, at the Georgia Institute of Technology, College of Engineering. She holds a secondary appointment as Professor of Public Policy. Her research is in the area of energy systems analysis, environmental lifecycle analysis, industrial ecology, and sustainability. Dr. Thomas is chair of the US National Academy Committee on Current Methods for Life Cycle Analysis of Low Carbon Transportation Fuels. From 2013 to 2019 she served on the DOE/USDA Biomass Research and Development Technical Advisory Committee; from 2004 to 2005, she was the American Physical Society Congressional Science Fellow, and from 2003 to 2009 she was a Member of the U.S. EPA Science Advisory Board. She is a Fellow of the American Association for the Advancement of Science, and of the American Physical Society. She received a BA in physics from Swarthmore College, a PhD in high-energy physics from Cornell University, and completed post-doctoral training at Carnegie Mellon University in the Department of Engineering and Public Policy.