Department of Electrical and Computer Engineering

TEXAS TECH UNIVERSITY
Edward E. Whitacre Jr.
College *of* Engineering

Fall 2026 Seminar Series

Seminar Title: Grid Modernization and the District of Columbia's Clean Energy Transition

Time: 2:00-2:50 PM, Monday, Oct 26, 2026
Location: ECE 101

Speaker:

Laura A. Ward, Ph.D., SMIEEE
U.S. DOE Energy Innovator
District of Columbia Department of Energy & Environment (DOEE)

Abstract:

The seminar will explore the District of Columbia's grid modernization and clean energy transition, highlighting how engineering, emerging technologies, utility planning, and energy policy must evolve together to support a high-DER electric system. I will discuss DER integration, interconnection reform, IEEE 1547-2018 and advanced inverters, hosting capacity, DERMS/ADMS, energy storage, microgrids, grid-forming inverter applications, and energy resilience, with a focus on how technical analysis can inform regulatory, planning, and infrastructure investment decisions.

This work is part of an ongoing grid modernization initiative developed under the strategic mentorship and guidance of Thomas Bartholomew, Associate Director of the Clean Energy Division at the District of Columbia Department of Energy & Environment (DOEE).

Learn about career and fellowship opportunities across federal and local government agencies, utilities, national laboratories, and the energy industry, including pathways to become a U.S. Department of Energy Fellow. The goal is to provide students with a practical perspective on how engineers can apply their technical expertise to modernize the electric grid, enhance the security, reliability, affordability, and resilience of U.S. critical energy infrastructure, and contribute to the nation's energy future through careers in public service and industry.

Speaker Bio:

Laura A. Ward, Ph.D., is an electrical engineer and energy professional working at the intersection of power systems, grid modernization, distributed energy resources, and energy policy. Her work focuses on a central challenge facing the electricity sector: how to integrate emerging energy technologies into the grid reliably, securely, efficiently, and at scale.

Her experience spans government, utility consulting, research, and applied power-system engineering, with work involving interconnection, advanced inverters, hosting capacity, DER integration, microgrids, battery energy storage, DERMS/ADMS, Virtual Power Plants, grid resilience, and power-system

modeling.

Laura earned her Ph.D. in Electrical Engineering from Texas Tech University, where her research focused on grid-forming inverter controls and inverter-dominated power systems. Her technical work has included electromagnetic transient and steady-state studies, high-penetration renewable systems, microgrids, black-start capability, and hardware-in-the-loop applications.

Her perspective on energy resilience was shaped by work connected to Puerto Rico following Hurricane Maria and the reliability challenges exposed during the 2021 Texas winter storm. These experiences strengthened her interest in developing power systems that are cleaner, more resilient, flexible, and operationally robust.

At Siemens PTI Grid Software, Laura supported transmission, interconnection, and power-system studies across multiple U.S. electricity markets.
Through the U.S. Department of Energy (DOE) Energy Innovator Fellowship, she later supported grid modernization initiatives with the District of Columbia Department of Energy and Environment, addressing IEEE 1547-2018 implementation, interconnection modernization, hosting capacity, advanced inverters, DERMS/ADMS readiness, storage, microgrids, resilience, interoperability, and cybersecurity.

A recurring theme throughout her work is connecting engineering with implementation. Technology alone does not modernize the grid. Technical standards, utility planning, regulation, markets, cybersecurity, and operational capabilities must evolve alongside it.

Laura also contributes to the broader energy community through IEEE and industry initiatives focused on advanced inverter standards, Virtual Power Plants, large-load integration, and grid modernization. Her goal is to translate complex power-system challenges into technically rigorous, implementable solutions, bridging engineering, technology, regulation, and policy as the electricity system becomes distributed & digital.