

Powering Progress: Navigating A Transforming Utility Landscape NWESS 2026



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Speaker:

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Title: Utility-Focused Adaptive Risk Mitigation under a Changing Wildfire Regime in the PNW

Abstract:

Over the past decade, the Pacific Northwest has experienced significant changes in its wildfire regime, characterized by larger annual burn areas, changing seasonality and spatial expansion of fire occurrence, more prolonged peak fire activity throughout the year, and increased fire frequency, burn intensity, and dynamics. These wildfire characteristics underscore the need to implement multi-entity, multi-objective risk assessment, planning, and mitigation to reduce wildfire risk and intensity, minimize adverse ecological impacts, and build resilience in critical infrastructure, energy systems, and the built environment. Numerous models and tools are developed at PNNL to address the triple-line defense measures of mitigation, response, and recovery. These tools span multiple time scales, including pre-season planning, near- and mid-range forecasting, event response, future climate planning and strategy, and consequence analysis to help prioritize actions and investments. Coupling triple-line defense modeling with utility infrastructure aids in vegetation management priorities and schedules, asset hardening, multi-entity landscape-scale treatments, enhanced powerline safety settings, and public safety power shutoff planning and implementation.

Bio: Dr. Andre Coleman serves as a chief scientist at the Department of Energy's Pacific Northwest National Laboratory (PNNL). Dr. Coleman joined PNNL in 2000 and brings 30 years of research in the fields of geoinformatics, hazard informatics, geointelligence, risk assessments, hydrology, and data science. His research interests are in rapid disaster assessments, infrastructure risk mitigation, extreme event impacts, geospatial machine learning, spatial and numerical modeling, multi-modal/multi-model analytical systems, and automated computing systems. His research focuses on bringing science-driven solutions to a variety of end-users with the purpose of helping inform strategic and critical decision-making. To date, he has authored over 125 peer-reviewed publications.