WASHINGTON STATE UNIVERSITY
School of Electrical Engineering and Computer Science

Wildfire Risk Mitigation and Data-driven Methods for Electric Power Systems

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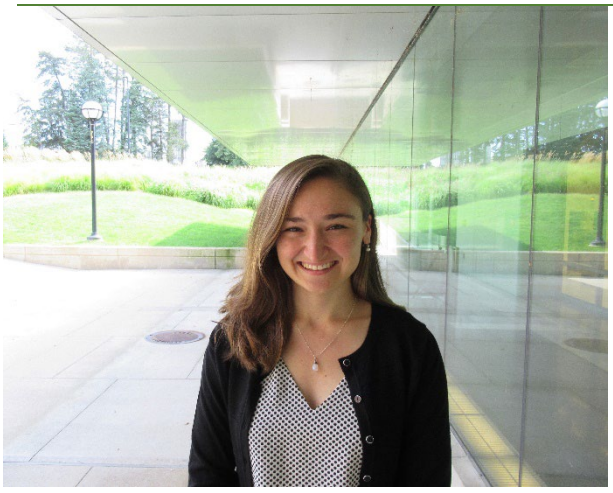
ABSTRACT:

The electric power grid of the future faces many challenges including rapidly increasing quantities of renewable generation and growing threats from extreme weather events, which necessitate the development of new computational tools. The first part of this talk will focus on one extreme weather event: elevated wildfire ignition risk. Wildfire risk mitigation is a critical consideration in regions like the Western United States, where, historically, electric power systems have ignited some of the most destructive wildfires. To reduce the risk of igniting a wildfire, power system operators preemptively de-energize high-risk power lines during extreme wildfire conditions as part of "Public Safety Power Shutoff" (PSPS) events. However, PSPS events can also result in significant amounts of load shedding, leading to the need for new operation and planning decision-making algorithms for power systems experiencing high wildfire risk. The second part of the talk will focus on the specialized and targeted use of data-driven methods to increase the accuracy and computation speeds of power systems decision-making algorithms. The talk will conclude by outlining opportunities for the use of targeted data-driven methods to aid in wildfire risk mitigation algorithms, and for resilience decision-making for power systems in general.

BIO



Alyssa Kody is a Maria Goeppert Mayer Postdoctoral Fellow in the Energy Systems and Infrastructure Analysis Division at Argonne National Laboratory in Lemont, Illinois. Her research focuses on developing control and optimization algorithms for power and energy systems. She was recently named a 2022 Rising Star in EECS. She received her Ph.D. in Electrical Engineering from the University of Michigan in Ann Arbor in 2019, where her thesis was on developing control systems for self-powered technologies. Her graduate work was supported by a National Science Foundation Graduate Research Fellowship and a Rackham Merit Fellowship.