



NATIONAL COUNCIL
ON ELECTRICITY POLICY

Innovations in Electricity Modeling
Virtual Training Series for National Council on Electricity Policy
October 1 – November 1, 2021

Speaker Bios

Dr. Juan Pablo Carvalho is a Senior Scientific Engineering Associate in the Electricity Markets and Policy Department at Lawrence Berkeley National Laboratory. His research focuses on modeling for long-term power system planning, regulatory design for planning and investment in electricity markets, and policy, economic, and financial aspects of U.S. energy service companies. JP holds Ph.D. and M.S. degrees in Energy and Resources from the University of California, Berkeley, and P.E. and B.S. degrees in Electronics Engineering from Universidad Técnica Federico Santa Maria, Chile.



John Fazio has been a systems analyst for the Pacific Northwest Power and Conservation Council since 1984. His primary duty is to assist in the development of the Council's regional power plan. His work focuses on assessing power supply adequacy, resource cost-effectiveness, impacts of alternative hydroelectric operations and climate change effects. John has B.S. and M.S. degrees in Physics. Before completing his Ph.D. thesis, he chose to move into operations research and accepted a position at Bonneville Power Administration. He has taught physics at the University of Portland, University of Oregon, and Concordia College. He also has worked on national and international projects related to hydroelectric operations.

Natalie Mims Frick is a Senior Program Manager in the Electricity Markets and Policy Department at Berkeley Lab. She manages energy efficiency and other distributed energy resource (DER) projects, including technical assistance to states and research on policies and programs. Before joining the lab, Natalie was the principal at Mims Consulting, LLC, where she served as an expert witness in demand-side management regulatory proceedings across the country. She also was an Energy Efficiency Director at the Southern Alliance for Clean Energy and a Senior Consultant at Rocky Mountain Institute.



Juliet Homer is a professional engineer in the Energy Policy and Economics Group at Pacific Northwest National Laboratory (PNNL). Her work supports national and international projects in the areas of integrated energy planning, advanced distribution system planning and grid modernization. Before joining PNNL, Juliet was a Utility Analyst at the Oregon Public Utility Commission where she managed electric and natural gas utility resource planning dockets and performed economic analyses of proposed utility investments. She previously worked as a consultant with Greeley and Hansen, LLC, a multi-national engineering consulting firm, where she managed planning and engineering design projects for water and wastewater systems.

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Detailed Agenda
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Dr. Robert Lempert is a principal researcher at the RAND Corporation and director of the Frederick S. Pardee Center for Longer Range Global Policy and the Future Human Condition. His research focuses on risk management and decision-making under conditions of deep uncertainty. He is a fellow of the American Physical Society, a member of the Council on Foreign Relations, a convening lead author for Working Group II of the United Nations' Intergovernmental Panel on Climate Change Sixth Assessment Report, a chapter lead for the Fourth U.S. National Climate Assessment, chair of the peer review panel for California's Fourth Climate Assessment, and a member of California's Climate-Safe Infrastructure Working Group. He has served on numerous study panels for the U.S. National Academies, including America's Climate Choices and Informing Decisions in a Changing Climate. Robert is an author of the book *Shaping the Next One Hundred Years: New Methods for Quantitative, Longer-Term Policy Analysis*. He earned his Ph.D. in Applied Physics from Harvard University.



Tom McDermott is PNNL's subsector lead for the Office of Energy Efficiency & Renewable Energy's Solar Energy Technologies Office at U.S. Department of Energy. He is an IEEE Fellow who has spent many years working on inverter technology design and integration of solar systems with the grid. Tom provides technical leadership and project management for the research portfolio in distribution analysis and automation, demand response, and distributed energy technologies. His primary research focus is on novel simulation, modeling, and analysis capabilities. Before joining PNNL in 2016, Tom was at the University of Pittsburgh, MelTran (his own company), Enernex, Ansoft (now part of ANSYS), Electrotek Concepts, PTI (now part of Siemens), and Westinghouse Electric. He has consulted on many grid projects that span modeling, analysis, and field measurements. At PNNL, his largest projects have been software simulation platforms for transactive energy systems and for distributed applications, along with power system protection, inverter controls, and energy storage integration.

Cesca Miller is a Program Manager in Berkeley Lab's Electricity Markets and Policy Department, focusing on energy efficiency and other DERs. She has held consulting roles with Enovation Partners and DNV GL, independent power producers and investors. She was also an analyst at Pacific Gas and Electric, overseeing demonstration projects funded by the Electric Program Investment Charge. At Enphase Energy, she developed a techno-economic model and supported market strategies for a home energy storage product. Cesca has a B.S. in Environmental Engineering Science from University of California, Berkeley, and an M.S. in Nanoengineering from University of California, San Diego.



Lisa Schwartz (co-host and project manager) is a Deputy Leader of Berkeley Lab's Electricity Markets and Policy Department. She manages work spanning utility regulation, electricity system planning, energy efficiency and other DERs, and leads training for states on integrated distribution system planning. Previously, she was Director of the Oregon Department of Energy, where earlier in her career she was a Senior Policy Analyst. At the Oregon Public Utility Commission, she was staff lead on resource planning and procurement, demand response, and distributed and renewable energy resources. She also served as a senior associate at the Regulatory Assistance Project. Lisa received an M.S. in Land Resources from University of Wisconsin, Madison, and a B.S. in Environmental Studies from George Washington University.

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Jeremy Twitchell is an Energy Research Analyst at PNNL, focusing on energy storage and distribution system planning. Prior to joining the lab, he was an energy policy advisor at the Washington Utilities and Transportation Commission, where he led staff development of a policy statement on the role of energy storage in utility resource planning and a distribution planning rulemaking. He also drafted a report for the Washington State Legislature on best practices in distribution planning and has provided rate case testimony on rate design and resource acquisition.



Dr. Rui Yang is a senior research engineer in the Power Systems Engineering Center at the National Renewable Energy Laboratory. She led development of the application of artificial intelligence to power systems optimization and control to realize distributed architecture with high DER penetration levels. She also spearheads big data analytics for bridging the gap between weather and power systems for better forecasting of grid conditions. She obtained her Ph.D. from Carnegie Mellon University, specializing in machine learning and optimization for power systems.