

PANEL 3: COMMERCIAL BUILDINGS: TECHNOLOGIES, DESIGN, OPERATIONS, AND INDUSTRY TRENDS

(Meeting Room: Oak Shelter)

Panel Leaders: Alexi Miller and Shanti Pless

MONDAY, AUGUST 22	SESSION 1 (8:30 am - 10:00 am) - Shanti Pless	TUESDAY, AUGUST 23	SESSION 1 (8:30 am - 10:00 am) - Shanti Pless
	Decarbonizing Existing Buildings		The Healthy Buildings and Energy Nexus
	<i>Automated Anomaly Detection and Diagnosis for Real Time Carbon Minimization</i> <i>Presented by: Craig Roussac, Buildings Alive (Lead Author: Hao Huang, Buildings Alive)</i>		<i>How Does Lighting for Wellness Affect Energy Use? Results from Simulation and Laboratory Studies, and a Look Ahead.</i> <i>Jordan Shackelford, Lawrence Berkeley National Laboratory</i>
	<i>Decarbonization Training for Facility Managers</i> <i>Jillian Winterkorn and Jason Strano, Eversource</i>		<i>Energy Implications of Using Germicidal Ultraviolet Radiation to Combat SARS-CoV-2</i> <i>Belal Abboushi, Pacific Northwest National Laboratory</i>
	<i>Can Electrification Find a Sweet Spot? Summarizing Field Data from Electrification Audits in Commercial and Industrial Buildings.</i> <i>Carl Samuelson, Michaels Energy</i>		<i>Energy Efficiency Measures to Improve Indoor Air Quality and Reduce the Spread of the SARS-CoV-2 Virus</i> <i>Robert Mowris, Verified Inc.</i>
	SESSION 2 (10:30 am - 12:00 pm) - Alexi Miller SESSION TO BE BROADCASTED		SESSION 2 (10:30 am - 12:00 pm) - Alexi Miller
What's after Zero: Net Zero Energy Buildings and Beyond	Taking Electrification to Scale - Cities, States, and Beyond		
<i>Challenges and Lessons Learned from an Analysis of Three Zero Energy Buildings</i> <i>Kate Hickcox, Pacific Northwest National Laboratory</i>	<i>Audit Template Tool: Facilitating Data Driven Decision Making for Jurisdictions</i> <i>Supriya Goel, Pacific Northwest National Laboratory</i>		
<i>Competition Between Ventilation and Cooling in Commercial Buildings and Implications for Energy Flexibility</i> <i>Caitlin McMahon, Stanford University</i>	<i>What's in Stock: Integrated Modeling of Building Electrification, Energy Efficiency, and Stock Turnover for New York City</i> <i>William Prindle, ICF</i>		
<i>Cutting Carbon with Codes: Reducing the Worst Climate Impacts of Construction</i> <i>Webly Bowles, New Buildings Institute</i>	<i>Cold Climate Packaged Heat Pumps – Resistance is Futile</i> <i>Presented by Joshua Butzbaugh, Pacific Northwest National Laboratory (Lead: Christian Valoria, Pacific Northwest National Laboratory)</i>		

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WEDNESDAY, AUGUST 24	SESSION 1 (8:30 am - 10:00 am) - Alexi Miller	THURSDAY, AUGUST 25	SESSION 1 (8:30 am - 10:00 am) - Alexi Miller
	High Performance HVAC Opportunities		Cooking and Cultivation: (de)Carbonizing Comestibles and Consumables
	<i>Heat Pump Controls: Decarbonizing Buildings While Avoiding Electric Resistance Heating and Higher Net Peak Demand</i> Jonathan McHugh, McHugh Energy Consultants		<i>Data-Driven Energy Efficiency in Controlled Environment Agriculture</i> Jennifer Amann, ACEEE
	<i>Including Economizer Efficiency in the Unitary Next Generation Test Procedure Standards</i> Robert Mowris, Verified		<i>The Nexus of Energy Efficiency and Low GWP Refrigerants; Can We Meet Our Greenhouse Gas Emission Goals in Commercial Refrigeration?</i> Jim Kelsey, kW Engineering
	<i>DO AS We Say (and As We Do): Maximizing HVAC Efficiency, Flexibility and Resiliency with High Efficiency Dedicated Outdoor Air Systems</i> Jordan Pratt, Energy 350		<i>Cooking Up Carbon Reductions: Equipment Upgrades and Fuel Switching Strategies to Reduce Emissions from Commercial Kitchens</i> Adam Spitz, ICF
SESSION 2 (10:30 am - 12:00 pm) - Shanti Pless	SESSION 2 (10:30 am - 12:00 pm) - Shanti Pless		SESSION 2 (10:30 am - 12:00 pm) - Shanti Pless
Can We Control It?	Smart Controls and Big Data		Smart Controls and Big Data
<i>Towards a Digital and Performance-Based Control Delivery Process</i> Amir Roth, US Department of Energy	<i>Existing Wireless Infrastructure is a Low-cost Path to Occupancy-based Commercial Building Control</i> Cecil Scheib, New York University		<i>Existing Wireless Infrastructure is a Low-cost Path to Occupancy-based Commercial Building Control</i> Cecil Scheib, New York University
<i>Hot Mess or Cool Tech? Secrets to Success for Advanced Building Controls Integration</i> Nathan Hinkle, Cadmus	<i>Qualitative Evaluation of Barriers, Awareness, and Adoption of LLLC Technologies</i> Shelby Ruiz, Washington State University		<i>Qualitative Evaluation of Barriers, Awareness, and Adoption of LLLC Technologies</i> Shelby Ruiz, Washington State University
<i>A Demonstration and Evaluation of Commercial Building Occupancy Sensing Using Wi-Fi Location-Based Services (LBS)</i> Lester Shen, Center for Energy and Environment.	<i>Network Lighting Controls (NLC) 2.0</i> Welsey Whited, DNV		<i>Network Lighting Controls (NLC) 2.0</i> Welsey Whited, DNV

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FRIDAY, AUGUST 26

SESSION 1 (8:30 am - 10:00 am) - Alexi Miller

Modeling EE, DR, and DERs in Commercial Buildings

Probabilistic Modeling of Commercial Building Occupancy and Electric Vehicle Charging Behavior Using Location-Based Map Data

Rawad El Kontar, National Renewable Energy Laboratory

Peak Demand in the Brave New World of Building Decarbonization and Distributed Energy Resources

Randall Higa, Southern California Edison

TBD

SESSION 2 (10:30 am - 12:00 pm) - Shanti Pless

Energy Design in Commercial Buildings

Measuring and Benchmarking Demand Flexibility in Commercial Buildings and Flattening the Duck – Addressing Baseline and Commissioning Challenges

Jingjing Liu, Lawrence Berkeley National Laboratory

Integrating Embodied Carbon Knowledge for Design Decisions

Heather Goetsch, National Renewable Energy Laboratory

What We Learned From Analyzing 15 Millions Rows of Commercial Buildings' HVAC Fault Data

Eliot Crowe, Lawrence Berkeley National Laboratory