

**PANEL 3 ACCEPTED PAPERS**

Title	Category	Lead Author First Name	Lead Author Last Name	Lead Author Organization
How does lighting for wellness affect energy use? Results from simulation and laboratory studies, and a look ahead.	Oral	Jordan	Shackelford	Lawrence Berkeley National Lab
A Demonstration and Evaluation of Commercial Building Occupancy Sensing Using Wi-Fi Location-Based Services (LBS)	Oral	Lester	Shen	Center for Energy and Environment
Cooking Up Carbon Reductions: Equipment Upgrades and Fuel Switching Strategies to Reduce Emissions from Commercial Kitchens	Oral	Adam	Spitz	ICF
Challenges and lessons learned from an analysis of three Zero Energy Buildings	Oral	Kate	Hickcox	Pacific Northwest National Laboratory
Incorporating the impacts of climate change in a typical weather year	Oral	Anna	Kelly	Power TakeOff
Energy Implications of Using Germicidal Ultraviolet Radiation to Combat SARS-CoV-2	Oral	Gabe	Arnold	Pacific Northwest National Laboratory
Existing wireless infrastructure is a low-cost path to occupancy-based commercial building control	Oral	Cecil	Scheib	New York University
Hot Mess or Cool Tech? Secrets to Success for Advanced Building Controls Integration	Oral	Nathan	Hinkle	Cadmus
Energy Efficiency Measures to Improve Indoor Air Quality and Reduce the Spread of the SARS-CoV-2 Virus	Oral	Robert	Mowris	Verified Inc.
Network Lighting Controls (NLC) 2.0	Oral	Wesley	Whited	DNV
Including Economizer Efficiency in the Unitary Next Generation Test Procedure Standards	Oral	Robert	Mowris	Verified Inc.
Can Electrification Find a Sweet Spot? Summarizing field data from electrification audits in commercial and industrial buildings.	Oral	Carl	Samuelson	Michaels Energy
DO AS We Say (and As We Do): Maximizing HVAC Efficiency, Flexibility and Resiliency with High Efficiency Dedicated Outdoor Air Systems	Oral	Jordan	Pratt	Energy 350
Qualitative evaluation of barriers, awareness, and adoption of LLLC technologies	Oral	Shelby	Ruiz	Washington State University, Integrated Design + Construction Lab
Competition Between Ventilation and Cooling in Commercial Buildings and Implications for Energy Flexibility	Oral	Caitlin	McMahon	Stanford University, Energy Resources Engineering
Calibration of Building Energy Model to Determine Load Flexibility Potential	Oral	Tanushree	Charan	National Renewable Energy Laboratory

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The nexus of energy efficiency and low GWP refrigerants; Can we meet our greenhouse gas emission goals in commercial refrigeration?	Oral	Jim	Kelsey	kW Engineering
Towards a Digital and Performance-Based Control Delivery Process	Oral	Amir	Roth	US Department of Energy
Ecodistrict Operations in Action	Oral	Alicia	Noriega	Edo
Probabilistic Modeling of Commercial Building Occupancy and Electric Vehicle Charging Behavior Using Location-Based Map Data	Oral	Rawad	El Kontar	National Renewable Energy Laboratory
Cold Climate Packaged Heat Pumps – Finding Sasquatch	Oral	Evan	Hallas	Taitem Engineering PC
Decarbonization Training for Facility Managers	Oral	Jillian	Winterkorn	Eversource
What We Learned From Analyzing 15 Millions Rows of Commercial Buildings’ HVAC Fault Data	Oral	Eliot	Crowe	Lawrence Berkeley National Laboratory
Audit Template Tool: Facilitating Data Driven Decision Making for Jurisdictions	Oral	Supriya	Goel	Pacific Northwest National Laboratory
What's in Stock: Integrated Modeling of Building Electrification, Energy Efficiency, and Stock Turnover for New York City	Oral	William	Prindle	ICF
Integrating Embodied Carbon Knowledge for Design Decisions	Oral	Heather	Goetsch	National Renewable Energy Laboratory
Heat Pump Controls: Decarbonizing Buildings While Avoiding Electric Resistance Heating and Higher Net Peak Demand	Oral	Jonathan	McHugh	McHugh Energy Consultants Inc.
Data-Driven Energy Efficiency in Controlled Environment Agriculture	Oral	Jennifer	Amann	American Council for an Energy Efficient Economy
Automated Anomaly Detection and Diagnosis for Real Time Carbon Minimization	Oral	Hao	Huang	Buildings Alive
Measuring and Benchmarking Demand Flexibility in Commercial Buildings and Flattening the Duck – Addressing Baseline and Commissioning Challenges	Oral	Jingjing	Liu	Lawrence Berkeley National Laboratory
Ushering in the New Age of Laboratories: Smart Labs in Practice	Alternate	Rachel	Romero	National Renewable Energy Laboratory
Implementing an Eclipse VOLTRON-based software platform to make a building "Grid-Interactive"	Alternate	Xiaohui	Zhou	Slipstream Group, Inc.
Modeling the effects of electrification in buildings	Alternate	Kevin	Jarzomski	U.S. Energy Information Administration
Characterizing the energy flexibility of an Institutional Building in Canada	Alternate	Fatima	Amara	Hydro-Quebec
Commercial Heat Pump Survey, Taxonomy, and Gap Analysis	Alternate	Bryan	Boyce	Energy Solutions

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IS THERE GOLD IN THEM THERE HILLS? MINING PUBLIC RECORDS FOR COMMERCIAL HVAC SYSTEM DETAILS	Alternate	Jonah	Hessels	Cadeo Group
Cutting Carbon with Codes: Reducing the Worst Climate Impacts of Construction	Alternate	Webly	Bowles	New Buildings Institute
Informed Retrofit Prioritization with Random Forest Regression	Alternate	Juan	Gonzalez	Pacific Northwest National Laboratory
Peak Demand in the Brave New World of Building Decarbonization and Distributed Energy Resources	Alternate	Randall	Higa	Southern California Edison
Laboratory Performance Assessment of High efficiency Refrigerated Display Cases with Low GWP Refrigerants	Visual	Ramin	Faramarzi	National Renewable Energy Laboratory
High efficiency Heat Pumps Can Pave the Path for Building Decarbonization in Cold Climates	Visual	Greg	Shoukas	National Renewable Energy Laboratory
Energy in Design: Toward Performance-Based Recognition in Architectural Design Awards	Visual	Christopher	Meek	University of Washington
Embracing the New Role of the Federal Building!	Visual	Jeremey	Alcorn	U.S. General Services Administration
Development of a Annual Air Handling Unit Fault Dataset for FDD Tools: Lessons Learned and Considerations for FDD Developers	Visual	Armando	Casillas	Lawrence Berkeley National Laboratory