Panel 3: Commercial Buildings: Technologies, Design, Operations, and Industry Trends

This panel will focus on key solutions and barriers to advancing energy improvement technologies, as well as affordability and reliability, in commercial and institutional buildings in the U.S. and abroad. Topics of interest include:

- Strategies, approaches, and technologies to achieve deep energy savings in existing buildings through performance analysis/modeling/monitoring, automation, retrofits, commissioning/fault detection, and operational improvements
- Innovative and impactful new construction strategies and technologies, including novel envelope technologies, integrated design approaches, and prefabrication/modular construction techniques
- The rise of artificial intelligence (AI) as a driver for rapid innovation and a tool for commercial building design and operation
- Designing and operating buildings to be reliable and adaptive in the face of increasing natural disasters and extreme weather conditions
- Smart controls, improved energy management and information systems, emerging mechanical equipment, and novel AI-based techniques that improve commercial building operational efficiency and energy performance while enhancing building-grid integration, reliability, occupant comfort and well-being, or delivering other benefits
- Advanced technologies for major commercial building end uses, especially space and water heating
- Non-energy impacts from commercial buildings, such as refrigerants
- Commercial buildings as a nexus for distributed energy resources and improved building-grid integration within and beyond the single-building scale, such as building-to-grid integration, on-site regeneration, energy storage, light- and heavy-duty vehicles, and district- or community-level energy sharing
- Other important commercial buildings, industry, and market trends