

Institute for Cyber Physical Infrastructure and Energy (I-CPIE)

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Overview:

The Institute for Cyber Physical Infrastructure and Energy (I-CPIE) at Lehigh is developing and promoting a community of successful interdisciplinary research teams working in the area of cyber physical infrastructure and energy (CPIE) systems, which are the interdependent and increasingly adaptive systems that underpin all aspects of our society and economy. I-CPIE creates a broad and interdisciplinary research community; engages with industry, government, and academic partners; catalyzes, grows, and supports successful interdisciplinary research teams; and attracts outstanding faculty and students. This results in new knowledge and solutions to critical challenges related to CPIE systems. CPIE systems are interdependent and provide communities with shelter, water, food, medicine, communications and internet, electric power, and fuel. I-CPIE faculty have demonstrated capability to form successful interdisciplinary teams that combine cyber systems modeling and design with physical systems modeling and design. These teams leverage recognized interdisciplinary strengths in: Large Structural Systems, Smart Grids, Cybersecurity, Resilient Infrastructure Systems, Data and Computation, Optimization and Decision Making, Mobile Sensing and Sensor Networking, Energy Efficiency, Natural Hazards Mitigation, Renewable Energy Systems, Fossil Fuel Energy Systems, Energy Efficient Materials and Devices, Water and Energy, and Environmental Science, Technology, and Policy.