

CIVIL AND ARCHITECTURAL ENGINEERING AND CONSTRUCTION MANAGEMENT  
COLLEGE OF ENGINEERING AND APPLIED SCIENCE

SUMMER RESEARCH OPPORTUNITIES FOR UNDERGRADUATE students

FOR APPLICATION YEAR: 2024

PROJECT TITLE: Decarbonizing Ohio's buildings through innovative energy policies

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**Project Description**

Columbus, Cleveland, Cincinnati, and Dayton each have approved climate action plans that call for significantly reducing or eliminating greenhouse gas emissions by 2050. To achieve this goal, each city must reduce emissions from existing buildings. Building Performance Standards (BPS) are an innovative policy tool that can produce substantial emissions reductions, but are unlikely to be enacted in Ohio unless they are adapted to the specific needs of our cities and designed in cooperation with state agencies. The goal of this project is to develop and implement a cost-optimal, equitable BPS in Ohio's large cities. This project is led by the University of Cincinnati in collaboration with a network of industry, government, and nonprofit partners throughout Ohio, and is funded by the U.S. Department of Energy.

The student working on this project will be expected to assemble and analyze information on the characteristics and energy performance of buildings in Ohio's large cities, and to assemble and analyze data on capital costs for retrofits to improve building performance. Students should have a basic skillset and aptitude for data analysis with large datasets in Excel, and an interest in the intersection of engineering and public policy (specifically building-related policies). While working on this project, students will develop the following skills and experience: data analysis and coding skills in the R statistical computing language; a working understanding of how building energy efficiency can enable local climate action; experience collaborating with local government, industry, and nonprofit organizations towards developing data-driven policy.