Summer 2024 Research Opportunity
Research Experience for Undergraduates (REU)

CommHEAT: A data-driven approach to designing a community-focused indoor heat emergency alert system for vulnerable residents

Led by Ulrike Passe at Iowa State University
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The CommHeat project (funded by the National Science Foundation) is searching for two eight-week paid research interns to work on urban tree canopy, evapotranspiration and microclimate data collection. Interns will also prepare those datasets for analysis. Undergraduate researchers will join a large interdisciplinary research team with Ulrike Passe (Architecture), Jan Thompson (Natural Resource Ecology & Management), Michael Dorneich (Industrial and Manufacturing Systems Engineering), Baskar Ganapathysubramanian (Mechanical Engineering) and Nicholas Schwab (Behavioral Psychology, UNI).

Summary of Work

Undergraduate research interns funded by the REU program will collaborate on *the installation of mobile weather stations and in-home temperature and RH sensors* and will be supported by local students in the Trees Forever "Growing Futures" Teammates program. REU students will also participate in *expanding an existing spatially-explicit tree inventory*. Tree inventory data will be collected using tree canopy and evapotranspiration sensors for climatic assessments and data collection for building characteristics.

Interns will work directly with the research team. In addition, REU interns will be assigned graduate student mentors to work with for the full eight weeks. They will learn about research design, gain knowledge from literature on building energy and urban microclimate, learn to work with sensor systems, gain experience with statistical analyses, and acquire oral and written communication skills. REU interns will have weekly meetings with faculty members and daily meetings with their graduate student mentors. REU interns will also participate in regular research group meetings.

Outcomes: REU interns will generate reports (written and/or oral) covering major milestones through the project, including literature review, hypothesis generation, descriptions of methods and results.

At the end of the project, REU interns will write an academic conference paper documenting their portion of the project. If promising results are obtained, there will be opportunities for REU interns to present their work at relevant conferences and through publication.

APPLICATION PROCESS

Please send applications to Ulrike Passe at upasse@iastate.edu by March 31, 2024
Two students will be selected based on the strength of their academic records and interests.

Please provide the following as electronic attachments to your e-mail message:

1. A current transcript (unofficial is okay)
2. A one-page statement of interest in the CommHEAT project and REU opportunity that also summarizes your interest in graduate studies and future career goals.

All applicants must be US citizens or permanent residents to qualify for a funded position through this opportunity.