Visualizing Data to Support Sustainable Decision Making

Faculty Member: Michael Dorneich (IMSE; dorneich@iastate.edu)

Mentor: Jacklin Stonewall (jacklins@iastate.edu)

REU Interns: Gabriel Kulp, Victoria Green, and Austin "AJ" Hanus

When important decisions need to be made — decisions that affect millions of people — the underlying issues are often complex and require decision makers to understand data from vastly different domains. The goal of this project is to develop user-friendly tools to enable the merging, manipulation, and visualization of disparate sources of data to help a wide array of stakeholders (academic researchers, community residents, policy makers, health organizations) make decisions pertinent to city residents, such as energy sustainability and the health of community. Potential data to be visualized includes housing stock conditions collected from public databases, residential energy use collected from databases, home temperature calculated from modeling simulations, and infrastructure conditions collected from resident surveys. Data sources can range from publicly available databases to researcher-collected survey data to citizen-generated data.

The planned system will integrate a variety of primary and secondary data sources in a common local repository that will support a set of easy to use, customizable interfaces that will facilitate the merging, manipulating, and visualizing of data to answer research and public policy questions. The goal is to make many of the complexities of data management opaque to the end user, allowing them to focus on working with disparate data sets to answer research and policy questions. The development of this system will reduce barriers for many other researchers interested in using the system and will also facilitate outreach and engagement in the community. This system could support policy decisions such as funding for energy assistance/weatherization programs, infrastructure repairs, and resident alerts for potentially dangerous climate events.

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