



UNH Sustainability Institute

Sustainability Fellowship Community Energy Efficiency Northampton, MA

Improving residential energy efficiency is a vital yet perennially vexing aspect of efforts to reduce society's carbon footprint. Participation in broad energy efficiency campaigns—whether offered by utilities, local governments or citizen groups—rarely get above 6% and are often even lower. The City of Northampton, Massachusetts, has recently embarked on an “informed experiment” to test a targeted approach to driving residential energy efficiency retrofits in their community. This data-intensive project, undertaken in with assistance from EnerScore Inc., a team of building scientists, data experts, software developers, and designers that model home energy demands based on publicly available data, is designed to identify owners and/or groups of owners of single family homes who are most likely to consider investing in energy efficiency upgrades of their property, and to help the city understand how best to motivate these individuals to do so. The result of the project to date is a new dataset that provides the city with an address-specific, editable assessment of the city's residential building stock, and efficiency recommendations tailored to each of 18 identified most-common building sub-types in Northampton.

This dataset has the potential to be a powerful tool in the City's efforts to support residential energy efficiency. To that end, the city seeks a Sustainability Fellow to help bring this project to fruition. Specific deliverables will be the following:

- Survey a number of owners of single-family homes in Northampton to determine the level of accuracy of a new dataset that describes building envelopes, HVAC mechanical components and modeled energy use of these homes.
- Add overlays of demographic and geographic information to a dataset describing this built environment of Northampton's single-family homes.
- Import the above-described dataset and overlays into a user-friendly, editable database program that includes a mapped user-interface. One program the city is considering using is the Rent Rocket database and mapping platform.
- If time allows, review current Massachusetts utility energy efficiency program offerings and the above described dataset to select sub-groups of property owners that may be open to investing in energy efficiency upgrades of their property and develop marketing/outreach activities and messages likely to engage these property owners.

This project is an opportunity to advance development of a unique—and potentially replicable—approach that uses data and customized outreach to drive behavior change. If this approach proves successful, the Fellow will have played a critical role in helping to develop a long-term, sustained and effective mechanism for substantial reductions in residential energy use and greenhouse gas emissions. In working on the project, the Fellow will also develop a robust understanding of the physical, social and economic barriers to marketing investments in energy efficiency to a general population, and increase her/his understanding of potential ways to get around these barriers. Finally, the project will provide an opportunity to enhance the Fellow’s professional network, as it will involve working closely with diverse experts from the Office of Planning and Sustainability and beyond.

Location: Central Services Office of Energy and Sustainability, City of Northampton

Time commitment: 40 hours per week, June 5-August 18, 2017

Compensation: \$6000 stipend

Desired Qualifications:

- Experience and fluency in the use of Excel and GIS software, and familiarity with where/how to access publicly available GIS geographic and demographic datasets
- Literacy in the science of developing and executing surveys—and ideally, experience in doing so
- Demonstrated excellence and fluency in quantitative analysis and data interpretation
- Extremely strong verbal and written communication skills
- Familiarity with building science and systems, as it relates to efficiency (e.g. building types, construction materials and methods, home heating and cooling systems), beneficial but not required
- Marketing and outreach skills beneficial but not required

UNHSI Sustainability program eligibility:

Graduate students, exceptional undergraduate students, and recent graduates are eligible. We will encourage, but not require, an academic sponsor or reference for each fellow, and where possible we will ask that course credits are awarded.

Supervision, Training, Mentoring and Evaluation

This fellow will receive supervision from Energy and Sustainability Officer Chris Mason, as well as mentoring and extensive professional development offerings from UNHSI.

Fellows will be expected to participate in three MANDATORY events:

- A three-day, two-night orientation in Durham, NH, May 31st- June 2nd. Lodging and food are provided; Fellows are responsible for any associated travel costs.
- Midterm project presentations to UNHSI staff, faculty and relevant project partners (can be done remotely).
- A summative evaluation and feedback session at the end of their placement.

Apply by February 17th at www.sustainableunh.unh.edu/sustainability-fellows