Research project title
Understanding the Performance Gap for UBC Residential Buildings

Goal or Operations Plan objective
Performance-based energy standards depend on energy modelling to determine building energy performance. Understanding the 'gap' between modelled and realized energy performance is necessary to ensure modelled energy performance is realized in constructed buildings. With the introduction of the Energy Step Code in BC, understanding, and closing the performance gap has increased importance. This understanding is particularly important in a district energy (DE) context, where understanding the performance gap is necessary to plan for DE system demand in a Step Code context.

UBC is adopting the Energy Step Code for new residential construction in a DE context. This project will support better outcomes for realized energy performance and improve planning for future DE system demand. We expect that the outcomes of the project will also be of value to Metro Vancouver local governments who are implementing the Energy Step Code, and developing DE strategies.

Outline scope of project and why it is of value to your organization. Describe how and when the scholar's work will be actionable.
- Compile modelled and benchmarked data for previously constructed UBC residential buildings. This will build a database of modelled vs. realized performance data for analysis, which will support this and future projects.
- Work with Corix to review performance of buildings connected to the new UBC Neighbourhood District Energy System. Understanding the performance gap of DE connected buildings is especially important to understanding implications of the Energy Step Code on system demand and financial business case.
- Analyze and review modelled and benchmarked performance data to identify performance gaps.
- Organize and deliver an energy modelling workshop to gain insights and identify recommendations from modelling practitioners and stakeholders. Gaining practitioner and stakeholder insights is expected to support development of recommendations that emerge from the project outcomes.

Deliverables
- A final report, with results of performance gap analysis and workshop outcomes, with recommendations.
- Complied performance gap database that will facilitate future analysis.
- Summary report of workshop outcomes.
- Executive Summary for the UBC Sustainability Scholars online project library.

Time Commitment
We would like the scholar to complete 250 hours during May – August 2018. The scholar would be expected to schedule some working hours at the UBC Sustainability and Engineering Department and spend some time working remotely. The specific schedule will be coordinated with the scholar.

Skill set/background required/preferred
- ✓ Excellent research and writing skills.
- ✓ Demonstrated interest in building energy use and energy modelling.
- ✓ Strong technical writing skills
- ✓ Strong technical and analytical skills
- ✓ Familiarity with benchmarking methods and tools
- ✓ Ability to work independently
- ✓ Demonstrated time management skills
- ✓ Deadline oriented
- ✓ Project management and organizational skills

Submit applications here: http://bit.ly/2DC2jpP