Dr Ralph Evins | Energy Systems and Sustainable Cities group
ECS 422 PO Box 1700 STN CSC Victoria BC V8W 2Y2 Canada
250-472-5845 | revins@uvic.ca | http://web.uvic.ca/~revins
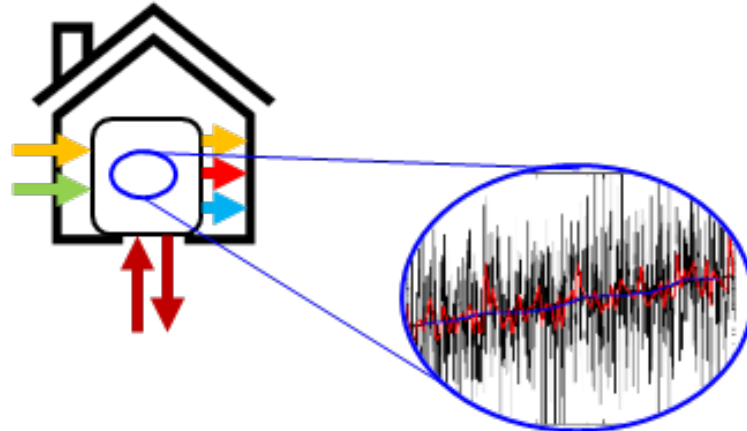
MASc or PhD position in
Probabilistic modelling of buildings and energy systems

Buildings, renewable energy generation and storage technologies and associated energy systems all pose complex, interacting design and operational challenges. These are characterized by the underlying variation in boundary conditions, primarily the fluctuations in climate that affect solar and wind availability and thermal loads, but also the occupancy and use patterns of buildings and rooms. The aim of this project is to apply the latest developments in mathematical stochastic modelling techniques to these problems, in combination with existing approaches like energy hub modelling. This position will work to combine all of these areas via a unified cloud-based portal that will make modular software components available to other researchers as well as the general public.

The position will be supervised by Dr Ralph Evins (Imperial College London, ETH Zurich), who's Energy Systems and Sustainable Cities research group is pioneering the use of advanced computational techniques to deliver the low-energy buildings, cities and energy systems of the future. The co-supervisor will be Dr Curran Crawford, who's Sustainable Systems Design lab brings expertise in probabilistic modelling from the wind power and electric vehicle domains. The work will be carried out in the stimulating multi-disciplinary environment of the Institute for Integrated Energy Systems (IESVic) at the University of Victoria in beautiful British Columbia.

Research objectives
The core tasks of this project include:
- Development of a framework for probabilistic modelling of buildings and energy systems.
- Evaluating and improving the framework for the purpose of tackling challenges related to the behaviour of such systems in highly-fluctuating conditions.
- Application of the framework to case studies with partners from academia and industry.

Requirements
- For a PhD position, a Master's degree (MASc or MEng) in engineering, computer science, mathematics or physics is required.
- For an MASc position, a Batchelor's degree (BSc or BEng) in engineering, computer science, mathematics or physics is required.
- A good working knowledge of Python is required. For an exceptional candidate, an expert level in another programming language could be acceptable instead.
- Familiarity with energy systems modelling is desirable.
- Mastering the English language is required.

The University of Victoria is an equity employer and encourages applications from persons with disabilities, visible minorities, Aboriginal Peoples, people of all sexual orientations and genders, and others who may contribute to the further diversification of the University.

Timeline
Start date: ideally September 2018 (specify in your cover letter when you are available).
Duration: 2 years (MASc) or 3 years (PhD).

Funding
This position is funded at a level commensurate with NSERC Masters or Doctoral scholarships. Holders of such fellowships will be eligible for top-up funding.

How to apply
Interested candidates should email iesvic.admin@uvic.ca with the subject Evins PhD PM, attaching the following items:
- a detailed curriculum vitae
- a 1 page cover letter explaining your fit for the position and describing programming expertise and previous research experience
- names and contact information of at least two professional references.

Review of applications will begin in mid-June, though later submissions may be considered.
Do not apply for more than one position; indicate interest in other positions in your cover letter.