Open Research Positions Fall 2016

1) **Micro-grid energy optimization**
   As part of the grid modernization effort spearheaded by our national labs, CESI will be collaborating with NREL and PNNL to develop and test smart control algorithms for distributed energy systems at commercial buildings. The objective of this work is to develop optimal control strategies for micro-grid systems with generation, energy storage and demand response features. The controller will be able to participate in ancillary energy markets to transform distributed energy systems into grid supportive infrastructure. Skills necessary include coding experience in Matlab or Python, a background in mathematics or model predictive control, and a strong motivation to have an impact on clean energy systems.

2) **Pressurized SOFC testing and integrated systems analysis**
   This work aims to improve the efficiency and value of solid oxide technology by operating at elevated pressure (10 bar) with pure oxygen cathodes. Novel systems integrations will provide additional value by direct integration with hydrogen production, and retro-fits of micro-turbine systems. This work is largely experimental as we finish construction of a pressurized furnace that can operate at 150 psi and 1000°C to single cells or 1kW SOFC short stacks. Research in this area will be closely tied with leading industry partners and national lab researchers. Laboratory experience and system modeling experience is preferred.

3) **Food-Energy-Water Nexus**
   In collaboration with faculty across campus and among very different disciplines, this work will apply systems level modeling to the food-energy-water nexus with the goal of understanding secondary linkages, storage systems, and system resilience in the greater Columbia Basin. New technologies, practices and policies will have far reaching implications as the northwest expands its agriculture systems and population. A strong background in large scale energy systems, and broad understanding or interest in the hydrology, agriculture, and ecology of the Pacific Northwest is strongly desired.

Please visit [https://labs.wsu.edu/cleanenergy/](https://labs.wsu.edu/cleanenergy/) for more information and contact dustin.mclarty@wsu.edu with your CV, your research interests and career goals, and several suggested times for a telephone interview if interested.