

# FUNDED PH.D. STUDENT POSITIONS AT THE SBS LAB

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## ABOUT THE LAB

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The [Sustainable Buildings and Societies \(SBS\) Laboratory](#) is moving from the University of Colorado to Pennsylvania State University. The lab is looking to recruit **four (4) Ph.D. students, with complete funding guaranteed**. New students will work on multi-scale modeling and experiment for the design and operation of smart, sustainable, and resilient cities starting in the Fall 2022, on-site at PSU.

## POSITION DESCRIPTION

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Currently, the SBS Lab is seeking Ph.D. students in **three different research domains**:

1. **Design, modeling, and construction of a grid-interactive community test facility** with buildings, PVs, smart appliances, electric vehicles, batteries, and other smart devices. The physical and virtual testbeds based on this facility will be used to perform research on indoor environmental quality, demand response, energy efficiency, and advanced control strategy.
2. **Investigation of novel modeling approach for fast prediction of indoor contaminant spread in emergency management**. Led by Lawrence Berkeley National Laboratory (LBNL), this is a 5-year collaborative research with federal research institutes and industry partners.
3. **Development of open-source modeling tools for grid-interactive district energy systems** by integrating thermo-fluid systems and microgrids to improve sustainability and resilience in communities. This \$4.16M research project will develop Modelica models for LBNL's Modelica Buildings Library, integrate the Modelica model into National Renewable Energy Laboratory (NREL)'s URBANopt advanced analytics platform, and apply any resultant modeling tools to real-world campus energy systems.

## EXPERIENCE

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Ph.D. students applying to the SBS Lab should have:

- a strong interest in modeling and/or experimentation
- a degree in Engineering, Physics, Math, Computer Science, or a related field
- pertinent research experience in the topic they are pursuing (modeling or experimentation); authorships or co-authorships on publications on those topics are critical
- the capacity to conduct thorough and exploratory independent work, with the ability to learn new things quickly, while communicating regularly with other lab members

**We work in a very rigorous, but collaborative and supportive, environment!**

## CONTACT + DEADLINES

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Applicants with specific research questions or general inquiries can reach the director of the lab, Dr. Wangda Zuo at [wangda.zuo@psu.edu](mailto:wangda.zuo@psu.edu), and can find PSU's Architectural Engineering page [here](#).

Applications must be submitted on PSU's [Admissions Portal](#) by **January 15<sup>th</sup>, 2022**. However, applications are evaluated on a rolling basis and interested applicants should reach out and apply as early as possible.

