

### Faculty Member Contact Information

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**Department:** Construction Management

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### Description of the URCA Assistant Position


This posting includes one funded position. In addition, the faculty member may be willing to mentor additional, unfunded students.


**How many unfunded students is this professor taking in addition to his/her one funded student?**   0  

(Students, if the faculty member will have both funded and unfunded students, he or she is free to select which student receives the funding. Funding cannot be split up between multiple students; only one student will receive it.)

**Which of the following apply to this position?**

This position is **only** open to students who have declared a major in this discipline. **M**

This project deals with social justice issues. 

This project deals with sustainability (green) issues. 

This project deals with human health and wellness issues. 

**How many hours per week will your student(s) be required to work in this position?**   9  

(Minimum is 6 hours per week; typical is 9.)

**Will it be possible for your student(s) to earn course credit?**  Yes  No

**If yes, in which course?** Computer Applications in Construction

**If yes, for how many credit hours?** 3

**Location of research/creative activities:** SIUE Engineering Building

### **Brief description of the nature of the research/creative activity:**

Thermal performances of buildings are often modeled but are rarely validated. This project is directed at evaluating the thermal performance of new science building which is currently under construction. My previous two undergraduate research assistants have developed a building information model and conducted preliminary energy simulation for the new science building respectively. Capitalizing on these outcomes, a recently purchased infrared thermal camera will be used to scan the interior structure of the new science building as the construction goes into the interior finish stage in the spring of 2012. The thermal images will be registered against the developed BIM model and compared with energy simulation results for identifying thermal insulation defects. The research outcome will be submitted to the 2012 International Conference on Sustainable Design and Construction. The outcome will also be incorporated into the PI's Building Information Modeling class.

### **Brief description of student responsibilities:**

The hired undergraduate research assistant is expected to collect and process thermal image data on the new science building project.

**URCA Assistant positions are designed to provide students with *research or creative activities* experience. As such, there should be measurable, appropriate outcome goals. What exactly should your student(s) have learned by the end of this experience?**

The student will be trained on operating thermal cameras and processing thermal images. He/she will be able to gain first-hand experience on identifying construction defects that can impact building energy performances. The student will also learn to write an article to a conference and present at the conference.

### Requirements of Students

**If the position(s) require students to be available at certain times each week (as opposed to them being able to set their own hours), please indicate all required days and times:**

N/A

**If the location of the research/creative activities involves off campus work, must students provide their own transportation?**

N/A

**Must students have taken any prerequisite classes? Please list classes and preferred grades:**

N/A

**Other requirements or notes to applicants:**

N/A