

Faculty Member Contact Information

Name: Edward Ackad

Department: Physics

E-mail Address: eackad@sue.edu

Phone Number: 618-650-2390

Campus Box: 1654

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? 1

(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? 10

(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? Phys 499

If yes, for how many credit hours? 3

Location of research/creative activities: Cyberspace

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

The student will fully engage in computational physics research. They will be supervised in developing a physical model for electrons in metal clusters, implementing it into a laser-cluster high-performance computer code and obtaining data to verify the model. Lastly they will use the model to make predictions about experiments under the same conditions using the data they generate.

Brief description of student responsibilities:

The student will be responsible for: literature searches and notes on the papers, some designing of the delocalized electron model, coding the model and testing its implementation and managing the running of the model on a high performance computing cluster. At the end they will be expected to summarize their results by making concrete experimental predictions.

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?

Some main components of ultra-intense light matter interaction physics, GPU programming, high performance computing usage, project management, code testing, code versioning and proper large-scale code management.

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:

Phys 321 and 416

Other requirements or notes to applicants:

Must be familiar with C or C++.

Familiarity/proficiency with python a plus.