

Faculty Member Contact Information

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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? 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? N/A

If yes, for how many credit hours? N/A

Location of research/creative activities: Pharmaceutical Sciences Building

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

Metabolism leads to unwanted effects when multiple drugs are co-administered. The objective is to understand why some drugs function as inducers, while others are substrates or inhibitors of the P450 enzymes. This work is a collaborative effort with the University of California, Irvine (UCI).

Brief description of student responsibilities:

The student will be responsible for: 1) Analyzing the docking results in order to explore patterns and trends in binding of substrates/inducers/inhibitor drugs into these enzymes. These are the crystal structures of the enzymes; 2) Carrying out more docking experiments using the data generated by our collaborators at UCI, where they have built membranes around the enzymes to better resemble a biological environment and completed calculations in water for of the P450's 2D6.

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 Assistant will be confident in his/her ability to 1) use Unix-operated workstations, 2) visualize in the three-dimensional space the motions of the P450 enzymes and understand how drugs bind to these enzymes and are metabolized, 3) perform computational exercises with pre-identified objectives, 4) analyze scientific findings, and 5) identify patterns and extract information from relevant interaction diagrams.

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:

No requirements.

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:

Organic chemistry (CHEM241 a & b), CS108 (preferred, but not required).

Other requirements or notes to applicants:

None