





Faculty Member Contact Information

Name	Nima Lotfi
Contact Info	
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Department	MME

1 Funded, 2 Unfunded URCA Assistant

	This position is ONLY open to students who have declared a major in this discipline.	M
	This project deals with social justice issues.	
X	This project deals with sustainability (green) issues.	
	This project deals with human health and wellness issues.	
	This project deals with community outreach.	
	This mentor's project is interdisciplinary in nature.	I

Are you willing to work with students from outside of your discipline? If yes, which other disciplines?

Yes

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

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

9

Will it be possible for your student(s) to earn course credit?

Location of research/creative activities:

Various labs in the School of Engineering

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

The nature of my research deals with alternative energy systems, in particular, battery energy storage systems. Batteries are the enabling technologies behind majority of the technological innovations in the past few decades, from consumer electronics to electric vehicles and stationary energy storage systems. In this project, we will focus on testing Li-ion battery cells, characterizing their behavior, developing battery management systems, and assembling battery packs.

Brief description of student responsibilities?

Students will be involved in various stages of this project including

- Battery testing and data acquisition
- Battery characterization and modeling
- Battery charger development and testing
- Battery pack assembly and testing

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?

- Familiarity with batteries and battery management systems
- Hands-on experience testing, modeling, and characterizing batteries in Matlab/Simulink and/or Python
- Hands-on experience developing and testing electronic circuits
- How to conduct literature review and write academic reports

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:

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

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

No

Other requirements or notes to applicants: