

## LESA Center URP Opportunity

Title: *Advanced Control System Programming*

Duration: **Spring Semester 2022**

### Description / Responsibilities

LESA is seeking an undergraduate researcher to work with the LESA engineering team to maintain and advance the development of the user interface, control system and real time monitoring of multichannel LED lighting systems developed in-house for horticulture applications.

LESA's horticulture lighting systems provide unprecedented intensity and spectral options for the horticultural growth lab environment. The associated control system (also developed in-house at LESA) provides autonomous operation of the lighting system variables and settings throughout the experimental growth cycle. This research effort will focus on two goals:

- 1) Maintain and update the current, lab-based user interface, control system and real time monitoring, with a focus on increasing autonomous operation.
- 2) Maintain and update the newly installed greenhouse light control system version. This system is installed in a greenhouse facility at our research partner, Cornell University.

The system level advanced programming requirements include:

- User interface development (Node.js, HTML)
- Real time experimental control
- Experimental data management (SQL database)
- Control system back-end rework to accommodate new lights (JavaScript, python)
- System integrity, reliability and error handling

### Applicant Requirements

- Demonstrable python and Node.js programming proficiency
- Demonstrable UI design and programming experience (examples beyond coursework preferred)
- Experience with Raspberry Pi preferred
- Good communication skills
- Reliable availability throughout the semester

Interested students, send your resume & cover letter to LESA no later than **Friday, January 14, 2022**

Send to:

Michelle Simkulet [simkum@rpi.edu](mailto:simkum@rpi.edu)