





Faculty Member Contact Information

Name	Dr. Siqi Zhang
Contact Info	
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Department	Industrial Engineering

1 Funded, 1 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.	
	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?

- No

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?

- No

Location of research/creative activities:

- Engineering Building

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

In this research activity, students will engage in a hands-on project focused on analyzing the impact of various process parameters on the quality of 3D-printed parts. The overarching goal is to advance their knowledge in additive manufacturing (AM) and understand how different settings in additive manufacturing processes affect the final quality of printed parts.

Brief description of student responsibilities?

This research involves the following activities:

- Literature review: Students will begin by conducting a literature review on existing studies, which will help them understand the current state of the research and identify the gaps in knowledge.
- Data collection and analysis: Students will use data analytics tools (e.g., MATLAB or Python) to analyze the experimental data from an open-source database.
- Model development: Based on their analysis, students will develop predictive models that predict the quality of printed parts.
- Reporting findings: Finally, students will compile their research findings into a comprehensive report and present their work.

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?

By the end of this research activity, students will gain a comprehensive set of skills and knowledge, including

- Understanding of AM principles
- Research skills including conducting a literature review, identifying gaps in existing knowledge, and formulating research questions
- Data analytics including the fundamentals of data science and how to use tools for data analysis, interpretation and model development
- Professional writing and presentation

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:

- I can only select students who can be available every Friday.

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

- In-campus activities

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

- N/A

Other requirements or notes to applicants:

- N/A