Faculty Member Contact Information

Name	Sanoar Rahman
Contact Info	
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Department	Geography & GIS ; Environmental Sciences

1 Funded, 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)

8

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

Location of research/creative activities:

Alumni Hall and Science West at SIUE

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

The influence of climate change and land management on streamflow is frequently obscured by human interventions, such as the construction of dams and reservoirs. To accurately identify patterns and shifts in streamflow, it is crucial to disentangle these impacts. One effective approach to achieve this is streamflow naturalization, a method that isolates the effects of management and regulatory actions, enabling a clearer understanding of water flow changes over time.

This project introduces students to essential techniques for streamflow naturalization, providing them with the skills to examine their findings in the broader context of water resource management. As part of their work, students will carry out a detailed case study of a local watershed, applying these methods to evaluate and interpret streamflow changes in relation to environmental factors and human activities.

Brief description of student responsibilities?

The student involved in the project will undertake a variety of tasks designed to provide a holistic research experience. Their duties will include performing literature reviews, gathering, organizing, and analyzing publicly available hydrological data, and utilizing the techniques learned throughout the course of the project. Additionally, the student will generate visual aids such as plots, maps, and other graphical representations to enhance and support their findings. Clear and thorough documentation of methodologies and processes is also expected. Active engagement during lab meetings, prompt completion of assigned readings and exercises, and maintaining professionalism throughout the duration of the project are fundamental to their role.

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 conclusion of this URCA Assistant experience, the student will have established a solid foundation in statistical modeling techniques, data integration, and analytical reasoning. They will gain hands-on experience in applying environmental data to modeling frameworks, effectively presenting results using tables, graphs, and maps, and rigorously validating both data and outcomes. Furthermore, the student will enhance their abilities to identify current gaps and future directions in research, compose scientific reports, and may even have the chance to showcase their work at local or regional events, such as the Illinois State Academy of Sciences. This project will provide the student with essential knowledge, practical skills, and the ability to think critically about complex challenges.

<u>Requirements of Students</u>

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:

The work schedule is flexible, and remote work options are available.

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:

The student should have a good understanding of computational skills.

Other requirements or notes to applicants:

None