





Faculty Member Contact Information

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| Contact Info | |
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| Department | Environmental Sciences |

1 Funded, 1 Unfunded URCA Assistant

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| | 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?

- Only similar fields

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 hours

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

- No

Location of research/creative activities:

- Research Lab, SW 2105

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

Research work in my lab is at the interface of chemistry and environmental nanotechnology. We are interested in understanding nanoparticle formation from mixtures containing natural organic matter (fulvic or humic acids) and metal ions under environmentally relevant conditions. We focus on silver nanoparticles (AgNPs) due to their application in numerous consumable products. Students will also explore the use of model organic compounds and natural organic matter to synthesize nanoparticles.

Brief description of student responsibilities?

The successful student will be responsible for cleaning glassware, preparing acid bath solutions, and standard and working solutions. Other responsibilities will include synthesizing nanoparticles under varying experimental parameters and characterizing the synthesized nanoparticles using a suite of analytical techniques to determine the extent of the nanoparticle formation, the size, and the stability of the formed nanoparticle over an extended period.

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 the experience, the student should be able to distinguish between engineered nanoparticles (commercially available) and naturally occurring nanoparticles (those that nature makes!). The student should also be able to synthesize and characterize nanoparticles at varying experimental conditions and determine their stability. Ultimately, the student will learn about the applications of nanoparticles in wastewater treatment and gain hands-on training with some selected analytical instruments.

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:

- A student with a background in Chemistry is preferred.

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:

- N/A

Other requirements or notes to applicants:

- N/A