Northwestern | QUERREY INQBATION LAB **2025 SUMMER SCHOLARS PROJECTS**

PROJECT CATEGORY: CleanTech

STARTUP: Coral Innovations

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RESEARCH AREA: Coral Innovations is a pioneering force in the realm of nanotechnology, dedicated to creating sustainable solutions for environmental challenges. Our mission is to harness nanotechnology-based solutions for practical applications in environmental remediation.

PROJECT TITLE: Nanotechnology Product R&D for Environmental Remediation

PROJECT DESCRIPTION

We are seeking a highly motivated and technically skilled intern that can assist us in product research & development, particularly for our NanoMedia product line. The intern will be responsible for contributing to lab-scale research & development for our products, as well as assist in production and data analysis for pilot studies. There may also be the opportunity for performing Lifecycle and Techno-Economic Analyses.

JOB EXPECTATIONS:

- Using the in-house developed flow reactor for nanomaterials synthesis
- Designing and conducting lab scale studies on product performance
- Assisting in efforts towards pilot studies through production and data analysis
- Keeping detailed records of protocols, experiments, results, and analysis
- Collaborating with other team members to design and implement experiments.
- Presenting results and providing recommendations for future experiments.

DESIRED EXPERIENCE:

Currently enrolled in an undergraduate or graduate program materials science, chemical engineering, or related field

- Basic laboratory skills (Any wet chemistry experience preferred)
- Strong analytical and problem-solving skills
- Strong written and verbal communications skills

TIME COMMITMENT:

This will be a full-time internship for 8 weeks with flexible dates over the summer.

TRAINING MENTORING:

Initial Meeting:

• The intern will meet with the project supervisor to discuss the project goals and objectives, as well as the expectations for the internship.

• The intern will be provided with a project overview, including relevant background information, literature review, and experimental protocols.

• The intern will be given a tour of the lab facilities and introduced to the lab equipment and procedures.

Weekly Progress Meetings:

• The intern will be involved in the weekly update meetings to discuss progress, any challenges encountered, and next steps.

• The supervisor will provide guidance and feedback on the results and data analysis.

• The intern will also have the opportunity to ask questions and receive feedback on any challenges they may be facing.

Data Analysis and Interpretation:

• The intern will be trained on nanocomposite synthesis, conducting lab studies, and will receive guidance on the interpretation of results.

Research Presentations:

• The intern will be required to give presentations on their research progress and findings to the lab group and other relevant stakeholders.

• The supervisor will provide feedback on the intern's presentation skills and will help the intern to improve their communication and presentation skills.

Final Report and Presentation:

• The intern will be required to prepare a final report and give a final presentation on their research project.

• The supervisor will provide feedback on the report and presentation and will help the intern to prepare for the final submission.

Evaluation and Feedback:

• At the end of the internship, the supervisor will provide the intern with an evaluation and feedback on their performance.

• The intern will also have the opportunity to provide feedback on their mentoring experience and the internship program.

Feedback will be given informally regularly during the internship, as well as with two formalized sessions, one occurring halfway through the internship and a written evaluation occurring at the end of the internship, both containing a performance review of the intern’s progress and work. The development of the intern will focus on improving problem solving skills in a professional engineering context, solidifying verbal and written technical communication, and emphasizing collaborative engineering work.