

CHELSEA TRAHAN ZERINGUE

Sustainability Research Engineer | Renewable Energy | Chemical Engineer

+ 1-337-384-9667

@ chelsea.trahan2016@gmail.com

Lafayette, LA

linkedin.com/in/chelsea-trahan-zeringue

SUMMARY

Dr. Zeringue has extensive experience with both sustainability engineering and commercialization assessment of evolving alternative energy processes. Dr. Zeringue has provided critical data information to industries and state agencies considering the implementation of developing energy systems to ensure that effective selection and utilization of viable technologies are being used within Louisiana.

EXPERIENCE

Research, Chemical, and Sustainability Engineer

Louisiana Energy Extension Service

Environmental Institute of Louisiana

02/2023 - Present Lafayette, LA

- Perform sustainable engineering and commercialization assessments for evolving energy processes
- Provide critical data information to agencies considering energy implementation systems
- Mentor Undergraduate Students

Chemical Engineering Graduate Research Assistant

University of Louisiana at Lafayette

Chemical Engineering

08/2018 – 12/2023 Lafayette, LA

- Perform Various Research Ventures
- Train and Delegate Undergraduate Research Apprentices
- Organize and Maintain Laboratory Inventory
- Communicate and Assist with Lecture Material and Assignments
- Periodic Lecturing of Classes
- Assist with Campus Events and Department Conferences

Laboratory Technician and Analyst Intern

Coastal Chemical Company LLC

Brenntag North America

05/2018 – 08/2018 Broussard, LA

- Analyze Raw Samples from Industrial Refineries and Chemical Plants
- Condensed and Purified Samples for X-Ray Powder Diffraction and Fluorescence Analysis
- Collected Data and Formulated Identification Reports for Companies
- Worked Directly under Analytical Chemist consistently Enhancing Laboratory Skillset
- Collaborated with fellow Technical Analysts to Categorize Identification Mechanisms

EDUCATION

Doctor of Philosophy | Systems Engineering

University of Louisiana at Lafayette

Chemical Engineering Concentration

08/2018 – 12/2023 Lafayette, LA

Bachelor of Science | Chemical Engineering

University of Louisiana at Lafayette

08/2014 – 05/2018 Lafayette, LA

PROJECTS

Clean Ports Program

Project Award | \$2,999,870

Spring 2025

- Environmental Protection Agency
- University of Louisiana at Lafayette
- Louisiana Transportation and Research Center

SKILLS

Laboratory

- Protein Extraction
- Gel Permeation-Size Exclusion Chromatography
- Gas Chromatography
- Tensile Testing
- Compression Testing
- Sterility Techniques
- Hazardous Waste Handling
- Instrumentation Troubleshooting
- Laboratory Safety

Computational

- Data Processing
- Statistical Analysis
- Computer Language
- Data Exchanging
- Simulation Processing
- Presentation Mechanics
- Graphic Design
- Proficiency in Microsoft Office
- Database Management
- Hardware Skills, Web Development
- Machine Learning

Soft Skills

- Communication
- Teamwork
- Adaptability
- Problem-Solving
- Creativity
- Responsible
- Professional
- Self-Motivated
- Dependable
- Mentoring
- Public-Speaking
- Patient
- Organized

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EXPERIENCE HIGHLIGHTS

Peer-Reviewed Publication

📅 Fall 2021 📄 [Chemical Engineering and Processing Process Intensification](#)

University of Louisiana at Lafayette | Department of Chemical Engineering

Optimization of Peroxone Oxidation for Removal of TNT from Aqueous Solutions Using a Process-Intensified Hydrogen Peroxide Dosing Strategy

Mark E. Zappi, Rafael Hernandez, Kyle Zappi, Chelsea Trahan, Daniel Gang, Rakesh Bajpai, Chiang Hai Kuo, Krishna D.P. Nigam

Literature Review Publication

📅 Fall 2023 📄 [ACS Industrial and Engineering Chemistry Research](#)

University of Louisiana at Lafayette | Department of Chemical Engineering

Production of Sustainable Green Adhesives from Proteinaceous Biomass with an Emphasis on Waste-Derived Protein Residuals: A Review |

Chelsea Trahan Zeringue, William M. Chirdon, Wayne Sharp, Daniel Gang, Ahmed Khattab, Rafael Hernandez, Emmanuel Revellame, William Holmes, and Mark E. Zappi

Literature Review Publication – Revisions Currently Underway

📅 Fall 2025

University of Louisiana at Lafayette | Department of Chemical Engineering

Extraction of Viable Proteinaceous Byproducts via Animal Processing and Animal Fecal Wastes

Chelsea Trahan Zeringue, Mark E. Zappi, William M. Chirdon

Research Publication

📅 Fall 2025 📄 [Journal of Environmental Management](#)

University of Louisiana at Lafayette | Department of Chemical Engineering

Production of Green Adhesives from Sustainable Proteins Derived from Urban Based Sewage Sludges

Chelsea Trahan Zeringue, William M. Chirdon, Wayne Sharp, Daniel Gang, Ahmed Khattab, Rafael Hernandez, William Holmes, Mark E. Zappi

Research Publication

📅 Fall 2024 📄 [MDPI Sustainability](#)

University of Louisiana at Lafayette | Department of Chemical Engineering

Physical and Chemical Characterization of Sustainable Green Adhesives Derived from Municipal Treatment Plant Sludges

Chelsea Trahan Zeringue, William M. Chirdon, Wayne Sharp, Daniel Gang, Ahmed Khattab, Rafael Hernandez, William Holmes, Mark E. Zappi

Literature Review Publication

📅 Spring 2025 📄 [Current Pollution Reports](#)

University of Louisiana at Lafayette | Department of Chemical Engineering

An Evaluation of the Genesis and Construct of State-Level Climate Action Plans Within the USA: Envisioning Carbon-Neutrality

Rafael E. Hernandez, Chelsea T. Zeringue, Alex M. Zappi, Mark E. Zappi

International Research Attendant

📅 Summer 2019

Namur, Belgium | Réseau Vertech City | Sustainable Development in Smart Cities

Partnerships: Lafayette, Louisiana; Namur, Belgium; Poitiers, France; Victoriaville, Quebec, Canada

Mentor - Research Experiences for Undergraduates

📅 Fall 2018 - Present

University of Louisiana at Lafayette | Advanced Infrastructure Materials Research Symposium

- *Examination of Adhesive Properties of Algal Biomass via Various Denaturing Agents*
Eric Beck | University of Florida | Summer 2021 REU
- *Production of Bio-Adhesive from Chicken Litter Derived Proteins*
Porter Bradley | Arizona State University | Summer 2021 REU
- *Characterization of Biosolid Proteins Used for Biobased Adhesives*
Samantha McKisson | University of Louisiana at Lafayette | Spring 2021
- *Development of Bio-based Adhesives from Brewery Wastes and Other Renewable, Natural Sources*
Grayson Lanza | University of Louisiana at Lafayette | Spring 2023
- *Carbon Dioxide Mitigation via Water Absorption in Freshwater Ecosystems and Simulated Cultivation of Chlorella Vulgaris and Chlorella Pyrenoidosa*
Kayleigh Jacks | University of Louisiana at Lafayette | Fall & Spring 2025