Ashley Mikolajczyk, Ph.D., P.E.

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EDUCATION

University of Louisiana at Lafayette
Bachelor of Science in Chemical Engineering | May 2013 | GPA 3.759

University of Louisiana at Lafayette
Master of Science in Chemical Engineering | December 2020 | GPA 3.90

University of Louisiana at Lafayette
Ph.D. in Systems Engineering with a Chemical Engineering Emphasis | Fall 2024 | GPA 3.90
Dissertation: Mikolajczyk, A.P., (2024). *Removal of 2,4-Dichlorophenol From Aqueous Solutions Using Biomass Based Adsorbents: Isotherm Modeling, Performance Evaluations, and Application of Modified Cypress Sawdust.* University of Louisiana at Lafayette. ProQuest.

EXPERIENCE

- **UL Instructor (January 2020 – Present)**
  - QM-Certified (QM Higher Education, 7th Edition) and UL Distance Learning certified
  - Taught courses such as Mass Transfer, Heat Transfer, Transport Phenomena, Chemical Engineering Thermodynamics, and Material and Energy Balances
  - Developed a junior and senior seminar for FE prep and professional development
  - Developed a Pharmaceutical Operation I and II course
- **UL Instructor (January 2016- December 2019)**
  - Taught the following courses: Introduction to Chemical Engineering (CHEE 101), General Thermodynamics (ENGR 301), Transport Phenomena (ENGR 305), Transfer Operations (CHEE 302), Chemical Engineering Thermodynamics (CHEE 310), and Stage Separations Design (CHEE 401).
  - ABET (Accreditation Board for Engineering & Technology) Coordinator for Chemical Engineering department
    - Assisted in collecting and analyzing all the assessments and data necessary for the upcoming audit for accreditation.
    - Assisted in formatting and writing the self-study used for accreditation audit.
  - Student Academic Advisor and Transfer Student Advisor

GRANTS

- **Transforming Engineering Education: Enhancing Learning through Immersive Virtual Reality Technology (December 2023)**
  - Awarded by STEP Council at the University of Louisiana at Lafayette in the amount of $75,326.00

- **Evaluation of Commercially Manufactured Feeds with Different Fat Compositions on Reproductive Performance of Captive Breeding Alligators (July 2016-May 2017)**
  - Awarded by Golden Ranch Farms in the amount of $36,000
  - Awarded by Golden Ranch in the amount of $45,000 in 2018 for continuation of the study

ACTIVITIES AND AWARDS

- **Society of Women Engineers Advisor (August 2016-Present)**
  - Was featured on the WE19 conference's homepage
  - https://alltogether.swe.org/2018/03/video-ashley-mikolajczyk-breaking-boundaries-we18/
- **UL's Outstanding Advisor Award (May 2023)**
- **CHEME Sports Team Advisor**
  - First annual CHEME sports international competition, hosted by AICHE
  - UL Lafayette's team ranked first place in 2019
  - UL Lafayette's team won safety award in 2022
  - UL Lafayette's team ranked third place internationally and first place nationally in 2023
  - UL Lafayette's team ranked first and second place (two teams) nationally in 2024
  - UL Lafayette's team ranked first place nationally in 2025
- **Excellence in Teaching College of Engineering Award (May 2019)**
  - Attended the NETI (National Effective Teaching Institute) II workshop hosted by ASEE (American Society For Engineering Education)
- **Student Outreach Faculty Member of the Year (May 2019)**
  - Nominated by the chemical engineering department head and selected by the Administration of the College of Engineering

PEER-REVIEWED PUBLICATIONS

- Mikolajczyk, A.P., Holmes, A., Berry, J. C., Gang, D., Hernandez, R., Holmes, W., Zappi, M. E. Removal of 2,4-Dichlorophenol Using Sustainable, Natural Adsorbents Dervied from Biomass Sources: A Comparative Study of Adsorption Performance. *Sustainable Resource Management*. **2026** Under Revision
- Fortela, D. L. B.; Mikolajczyk, A. P.; Hernandez, R.; Revellame, E.; Sharp, W.; Holmes, W.; Gang, D.; Zappi, M. E. Dynamic Time Warping as Elementary Effects Metric for Morris-Based Global Sensitivity Analysis of High-Dimension Dynamical Models. *Math. Comput. Appl.* **2024**, *29* (6), 111.
- Mikolajczyk, A. P.; Fortela, D. L. B.; Berry, J. C.; Chirdon, W. M.; Hernandez, R. A.; Gang, D. D.; Zappi, M. E. Evaluating the Suitability of Linear and Nonlinear Regression Approaches for the Langmuir Adsorption Model as Applied toward Biomass-Based Adsorbents: Testing Residuals and Assessing Model Validity. *Langmuir* **2024**. https://doi.org/10.1021/acs.langmuir.4c01786.
- Fortela, D. L. B.; Mikolajczyk, A. P.; Carnes, M.; Sharp, W.; Revellame, E.; Hernandez, R.; Holmes, W.; Zappi, M. Predicting Molecular Docking Affinity of Per-and Polyfluoroalkyl Substances (PFAs) Towards Human Blood Proteins Using Generative AI Algorithm DiffDock. *bioRxiv* **2023**, 2008–2023.
- Joanen, T.; Mikolajczyk, A. P.; Staton, M.; Kaplan, J.; Holmes, W. E.; Zappi, M. E. Impacts of Diet on Reproductive Performance of Captive American Alligators (Alligator Mississippiensis). *Animals* **2023**, *13* (24), 3797.
- Fortela, D. L.; Mikolajczyk, A. Schrödinger's Cat May Be Dead All Along. **2023**.

- Fortela, D. L. B.; Travis, A.; Mikolajczyk, A. P.; Sharp, W.; Revellame, E.; Holmes, W.; Hernandez, R.; Zappi, M. E. Quantitating Wastewater Characteristic Parameters Using Neural Network Regression Modeling on Spectral Reflectance. *Clean Technol.* **2023**, *5* (4), 1186–1202.
- Fortela, D. L.; Travis, A.; Mikolajczyk, A.; Sharp, W. Exoplanet Atmosphere Characterization via Transit Spectra Classification. **2023**.
- Fortela, D. L. B.; Mikolajczyk, A. P. Detecting Plant-Wide Oscillation Propagation Effects of Disturbances and Faults in a Chemical Process Plant Using Network Topology of Variance Decompositions. *Processes* **2023**, *11* (6), 1747.
- Fortela, D. L. B.; Fremin, A. C.; Sharp, W.; Mikolajczyk, A. P.; Revellame, E.; Holmes, W.; Hernandez, R.; Zappi, M. Unsupervised Machine Learning to Detect Impending Anomalies in Testing of Fuel Economy and Emissions of Light-Duty Vehicles. *Clean Technol.* **2023**, *5* (1), 418–435.
- Deoli, N. T.; Mikolajczyk, A.; Fusilier, Z.; Zappi, M.; Whitlow, H. J. Elemental Composition of Alligator Eggshell and Eggshell Membrane Using Micro-PIXE. *Nucl. Instruments Methods Phys. Res. Sect. B Beam Interact. with Mater. Atoms* **2021**, *502*, 80–84. https://doi.org/10.1016/j.nimb.2021.06.005.
- Zappi, M. E.; Bajpai, R.; Hernandez, R.; Mikolajczyk, A.; Lord Fortela, D.; Sharp, W.; Chirdon, W.; Zappi, K.; Gang, D.; Nigam, K. D. P.; Revellame, E. D. Microalgae Culturing to Produce Biobased Diesel Fuels: An Overview of the Basics, Challenges, and a Look toward a True Biorefinery Future. *Ind. Eng. Chem. Res.* **2019**, *58* (35), 15724–15746. https://doi.org/10.1021/acs.iecr.9b01555.
- Zappi, M. E.; Revellame, E.; Fortela, D. L.; Hernandez, R.; Gang, D.; Holmes, W.; Sharp, W.; Picou-Mikolajczyk, A.; Nigam, K. D. P.; Bajpai, R. Evaluation of the Potential to Produce Biogas and Other Energetic Coproducts Using Anaerobic Digestion of Wastewater Generated at Shrimp Processing Operations. *Ind. Eng. Chem. Res.* **2019**, *58* (35), 15930–15944.
- Fortela, D. L. B.; Mikolajczyk, A. P.; Hernandez, R.; Revellame, E.; Holmes, W.; Zappi, M. Techno-Economic Potential of Integrated Anaerobic Digestion and Aerobic Lipid Accumulation for Fuels and Materials Recovery from Wastewater Treatment Plants. *J. Fundam. Renew. Energy Appl.* **2018**, *8* (4), 268.

OTHER PUBLICATIONS

- Fortela, D. L. B.; Mikolajczyk, A. P.; Practical Python for Chemical Engineering A Problem Solving Approach. 2026. ISBN 9798245197760
- Fortela, D. L. B.; Mikolajczyk, A. P.; Hypo Exercises – No, This is Not What You Think. 2026. ISBN 9798247400868

PRESENTATIONS

- **AIChE Annual Meeting (November 2025)**
  - Boston, MA
  - Presentation: Evaluating the Suitability of Regression Approaches for the Langmuir Adsorption Model As Applied Toward Biomass-Based Adsorbents: Assessing Model Validity
- **IEEE Green Technologies Conference (April 2019)**
  - Lafayette, La
  - Presentation: “Developing Sustainable, Biomass-Based Water Treatment Adsorbents
- **American Oil and Chemist Society Conference (May 2014)**
  - San Antonio, Texas

- Poster Presentation: "The Influence of Dietary Oil Sources on Hatchability of Captive Alligators"

- **Vertech City Conference in Victoriaville, Canada (November 2014)**
  - Competed in an International Student Competition on building a greener, more sustainable city
  - Project Title: "Positioning Urban-Based Organic Wastes as Valuable Feedstocks to Fuels and Chemicals Production"
  - Placed 3rd out of 42 teams
- **American Institute of Chemical Engineers Conference (November 2014)**
  - Atlanta, Georgia
  - Poster Presentation on "An Evaluation of Processes for the Capture of Lipids for Later Use as Feedstocks for Fuels and Other Chemicals Production"
  - Poster Presentation on "Engineering Alligator Diets to Increase Reproductive Performance of Alligator Eggs from a Captive Population"
- **Southern Section of the Association of Official Analytics Chemists International (April 2015)**
  - Atlanta, Georgia
  - Oral Presentation on "Evaluation of the Effect of Commercially Manufactured Feeds with Different Fat Compositions on the Fatty Acid Composition of Captive Breeding Alligator Eggs"

Skills and Programs

- Microsoft Office Suite
- Aspen Plus and EDR
- SAS and JMP SAS
- R

Continuing Education

- NETI-1 Workshop Course Design and Student Engagement (January 2025)
- Biopharmaceuticals Introduction, CMC, and ATMP courses by ISPE (July 2023)
- CCPS Safety Workshop presented by DOW (June 2023)
- Biomanufacturing for Chemical Engineers: AICHE ELA 103 (June 2021)
- NETI-2 Workshop Problem-Based Learning: ASEE (June 2019)

Professional Societies

- SWE (Society of Women Engineers)
- AICHE (American Institute of Chemical Engineers)