

EMMANUEL REVELLAME

Assistant Professor
Department of Industrial Technology
Graduate Faculty
Department of Chemical Engineering
College of Engineering, University of Louisiana at Lafayette
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PROFESSIONAL PREPARATION

Postdoctoral Research Associate	01/2012 – 06/2013
Mississippi State University, Mississippi State, MS, USA	
Ph.D. Chemical Engineering	01/2008 – 12/2011
Mississippi State University, Mississippi State, MS, USA (GPA: 4.00/4.00)	
B.S. Chemical Engineering	06/1996 – 04/2001
University of the Philippines Los Baños	

APPOINTMENTS

Assistant Professor	08/2016 – present
Department of Industrial Technology, College of Engineering University of Louisiana at Lafayette	
Research Scientist	07/2013 – 07/2016
Energy Institute and Department of Chemical Engineering College of Engineering, University of Louisiana at Lafayette	
Instructor	07/2004 – 12/2007
Department of Chemical Engineering University of the Philippines Los Baños, Laguna, Philippines	
Research and Development Chemist	07/2003 – 06/2004
Toyo Ink Manufacturing Inc., Philippines Canlubang, Laguna, Philippines	
University Research Associate I	07/2001 – 10/2002
Institute of Molecular Biology and Biotechnology (BIOTECH) University of the Philippines Los Baños, Laguna, Philippines	

AWARDS/HONORS

- 2018-2019 Rising Star Award (Institution: University of Louisiana at Lafayette)
- 2017-2018 Certificate of Achievement in Innovation Award (Institution: University of Louisiana at Lafayette)
- 2017 Innovator Award (Institution: University of Louisiana at Lafayette)
- Recipient of the 2011 Industrial Oil Products Division Student Award.
(Organization: American Oil Chemists' Society)
- Fourth Place: 2011 Environmental Challenge International student team competition.
(Organization: Air & Waste Management Association)

- Winner of 2010 Swalm School of Chemical Engineering Graduate Student Paper Competition for the paper “Biodiesel from Activated Sludge through *in situ* Transesterification. (Institution: Mississippi State University)
- Second place in the 2003 Philippine Council for Advanced Science and Technology Research and Development (PCASTRD) Outstanding R&D Award for the research project Lipid Molecular Species and Fractions of the Oil from Local Seeds and Nuts and their Potential Applications. (Organization: Philippine Council for Advanced Science and Technology Research and Development)
- Winner of the 2002 Agriculture and Fisheries Modernization Act (AFMA-Philippines) Outstanding R&D Paper Award (Unpublished) for the research project Lipid Molecular Species and Fractions of the Oil from Local Seeds and Nuts and their Potential Applications. (Organization: Philippine Agriculture and Fisheries Modernization Act)
- La Tondeña Foundation Inc. Scholar from 1996 to 2001.

REFEREED PUBLICATIONS (JOURNAL AND BOOK CHAPTER)

(*corresponding author)

1. ED Revellame*, R Aguda, A Chistoserdov, DL Fortela, RA Hernandez, ME Zappi, Microalgae Cultivation for Space Exploration: Assessing the Potential for a New Generation of Waste to Human Life-Support System for Long Duration Space Travel and Planetary Human Habitation, *Algal Research*, Accepted.
2. R Aguda, S Bonilla, JB Hmida*, ED Revellame*, Challenges and Opportunities in Developing Project Management Decision-Making Tools, *Journal of Engineering, Project, and Production Management*, 11(2) (2021) 127-138.
3. ED Revellame*, DL Fortela, W Sharp, R Hernandez, M Zappi, Adsorption Kinetic Modeling using Pseudo-First Order and Pseudo-Second Order Rate Laws: A Review, *Cleaner Engineering and Technology*, 1 (2020) 100032.
4. B Shrestha, R Hernandez, DLB Fortela, W Sharp, A Chistoserdov, D Gang, E Revellame, W Holmes, ME Zappi*, A Review of Pretreatment Methods to Enhance Solids Reduction during Anaerobic Digestion of Municipal Wastewater Sludges and the Resulting Digester Performance: Implications to Future Urban Biorefineries, *Applied Sciences* 10(24) (2020) 9141.
5. R Aguda, S LeBoeuf, C Stelly, S Bonilla, B LeBlanc, W Holmes, R Hernandez, ME Zappi, ED Revellame*, The Potential of Non-Ionic Surfactants for Extraction of Lactic Acid from Aqueous Solution, *Applied Sciences*, 10(15) (2020) 5315.
6. DL Fortela*, A DeLattre, S Kowalski, W Sharp, E Revellame, R Hernandez, D Gang, M Zappi, A Global Sensitivity Analysis Methodology for Anaerobic Digestion Models through Functional Principal Components Projection, *Authorea*, (2020), DOI: 10.22541/au.158221321.19687750
7. ME Zappi*, A Zappi, E Revellame, W Sharp, DL Fortela, R Hernandez, T Chambers, K Ritter, D Gang, An Assessment of the Potential to Produce Commercially Valuable Lipids on Highway Right-of-Way Land Areas Located Within the Southeastern United States, *Sustainability*, 12 (2020) 5225.
8. DLB Fortela*, W Sharp, E Revellame, A Chistoserdov, W Holmes, D Gang, R Hernandez, ME Zappi, Lipid accumulation capability of typical non-acclimated activated sludge microbial consortia using methane gas as secondary carbon source, *Engineering Reports*, (2020).
9. DLB Fortela*, M Crawford, A DeLattre, S Kowalski, M Lissard, A Fremin, W Sharp, E Revellame, R Hernandez, M Zappi, Using Self-Organizing Maps to Elucidate Patterns among Variables in Simulated Syngas Combustion, *Clean Technologies*, 2 (2020) 156-169.

10. D Blue, DL Fortela, W Holmes, D LaCour, S LeBoeuf, C Stelly, R Subramaniam, R Hernandez, ME Zappi, ED Revellame*, Valorization of Industrial Vegetable Waste using Dilute HCl Pretreatment, *Processes*, 7(11) (2019), 853.
11. R Bertrand, W Holmes, C Orgeron, C McIntyre, R Hernandez, ED Revellame*, Rapid Estimation of Parameters for Gelatinization of Waxy Corn Starch, *Foods*, 8(11) (2019) 556.
12. LC Go, DL Fortela, E Revellame, M Zappi, W Chirdon, W Holmes, R Hernandez*, Biobased chemicals and energy recovered from waste microbial matrices. *Current Opinion in Chemical Engineering*, 26 (2019) 65-71.
13. M Zappi*, R Bajpai, R Hernandez, A Mikolajczyk, DL Fortela, W Sharp, WM Chirdon, K Zappi, DD Gang, KDP Nigam, E Revellame, Microalgae Culturing to Produce Biobased Diesel Fuels: An Overview of the Basics, Challenges, and a Look toward a True Biorefinery Future. *Industrial & Engineering Chemistry Research*, 58(35) (2019) 15724-15746.
14. ME Zappi, DL Fortela, W Sharp, R Bajpai, D Gang, W Holmes, R Hernandez, ED Revellame*, Evaluation of the Methane Production Potential of Catfish Processing Wastewater using Various Anaerobic Digestion Strategies, *Processes*, 7(6) (2019), 368.
15. M Zappi*, E Revellame, DL Fortela, R Hernandez, DD Gang, WE Holmes, W Sharp, A Picou-Mikolajczyk, KDP Nigam, R Bajpai, Evaluation of the Potential to Produce Biogas and Other Energetic Coproducts Using Anaerobic Digestion of Wastewater Generated at Shrimp Processing Operations, *Industrial & Engineering Chemistry Research*, 58(35) (2019) 15930-15944.
16. Q Lian, MI Konggidinata, ZU Ahmad, DD Gang*, L Yao, R Subramaniam, E Revellame, WB Holmes, M Zappi, Combined Effects of Textural and Surface Properties of Modified Ordered Mesoporous Carbon (OMC) on BTEX Adsorption, *Journal of Hazardous Materials*, 377 (2019) 381-390.
17. DLB Fortela*, R Hernandez, E Revellame, W Holmes, W Sharp, M Zappi, Lipids from Wastewater-Activated Sludge Cultivated on Acetic Acid as Potential Alternatives to High-Value Oils and Fats, *Journal of the American Oil Chemists' Society*, (2019).
18. DLB Fortela*, K Farmer, A Zappi, WW Sharp, E Revellame, D Gang, M Zappi, A Methodology for Global Sensitivity Analysis of Activated Sludge Models: Case Study with Activated Sludge Model No. 3 (ASM3), *Water Environment Research*, (2019) 1-11.
19. DLB Fortela*, WW Sharp, ED Revellame, R Hernandez, D Gang, ME Zappi, Computational Evaluation for Effects of Feedstock Variations on the Sensitivities of Biochemical Mechanism Parameters in Anaerobic Digestion Kinetic Models, *Biochemical Engineering Journal*, 143 (2019) 212 – 223.
20. J Belgodere, ED Revellame*, R Hernandez, W Holmes, L Collazos, R Bajpai, ME Zappi, Liquid-Liquid Equilibria for (Volatile Fatty Acids + Water + Alcohol Ethoxylates): Experimental Measurement of Pseudo-Ternary Systems, *Journal of Chemical Thermodynamics*, 128 (2019) 207 – 14.
21. DLB Fortela*, AP Mikolajczyk, R Hernandez, E Revellame, W Holmes, M Zappi, Techno-economic Potential of Integrated Anaerobic Digestion and Aerobic Lipid Accumulation for Fuels and Materials Recovery from Wastewater Treatment Plants, *Journal of Fundamentals of Renewable Energy and Applications*, 8(4) (2018).
22. A Mondala*, R Hernandez, T French, E Revellame*, DL Fortela, M Amirsadeghi, Bioenergy from Activated Sludge and Wastewater, in: V.G. Gude (ed.), *Green Chemistry for Sustainable Biofuel Production*, Apple Academic Press Inc., Waretown, NJ, USA, (2018) pp. 357 – 434.
23. AR Kaveeshwar, PS Kumar, ED Revellame, DD Gang, ME Zappi, R Subramaniam*, Adsorption Properties and Mechanism of Barium (II) and Strontium (II) Removal from Fracking Wastewater using Pecan Shell Based Activated Carbon, *Journal of Cleaner Production*, 193 (2018) 1 – 13.

24. AR Kaveeshwar, SK Ponnusamy, ED Revellame, DD Gang, ME Zappi, R Subramaniam*, Pecan Shell Based Activated Carbon for Removal of Iron(II) from Fracking Wastewater: Adsorption kinetics, isotherm and thermodynamic studies, *Process Safety and Environmental Protection*, 114 (2018) 107 – 122.
25. DL Fortela, R Hernandez*, A Chistoserdov, M Zappi, R Bajpai, D Gang, E Revellame, W Holmes, Biodiesel Profile Stabilization and Microbial Community Speciation of Activated Sludge Feeding on Acetic Acid as Carbon Source, *ACS Sustainable Chemistry & Engineering*, 4:12 (2016) 6427 – 6434.
26. DL Fortela, R Hernandez*, WT French, M Zappi, E Revellame, W Holmes, A Mondala, Extent of Inhibition and Utilization of Volatile Fatty Acids as Carbon Sources for Activated Sludge Microbial Consortia Dedicated for Biodiesel Production, *Renewable Energy*, 96 Part A (2016) 11 – 19.
27. DL Fortela, R Hernandez*, M Zappi, WT French, R Bajpai, A Chistoserdov, E Revellame, W Holmes, Microbial Lipid Accumulation Capability of Activated Sludge Feeding on Short Chain Fatty Acids as Carbon Sources through Fed-Batch Cultivation. *Journal of Bioprocessing & Biotechniques*, 6:4 (2016).
28. ED Revellame, WE Holmes, R Hernandez*, WT French, A Forks, T Ashe, LA Estévez*, Experimental Measurement and Prediction of (Liquid + Liquid + Liquid) equilibrium for the system (*n*-Hexadecane + Water + Triacetin), *Journal of Chemical Thermodynamics*, 95 (2016) 105 – 110.
29. SA Shields-Menard, B Sukhbaatar, E Revellame, R Hernandez, JR Donaldson, T French*, Lipid Accumulation by *Rhodococcus rhodochrous* grown on Glucose, *Journal of Industrial Microbiology & Biotechnology*, 42:5 (2015) 693 – 699.
30. J Donaldson*, S Shields-Menard, J Barnard, E Revellame, J Hall, A Lawrence, J Wilson, A Lipzen, J Martin, W Schackwitz, T Woyke, N Shapiro, K Biddle, W Holmes, R Hernandez, W French, Characterization of the Novel *Enterobacter cloacae* Strain JD6301 and a Genetically Modified Variant Capable of Producing Extracellular Lipids, *Agriculture, Food and Analytical Bacteriology*, 4:3 (2014) 212 – 223.
31. ED Revellame, R Hernandez*, W French, W Holmes, A Forks, R Callahan II, Lipid-Enhancement of Activated Sludges obtained from Conventional Activated Sludge and Oxidation Ditch Processes, *Bioresource Technology*, 148 (2013) 487 – 493.
32. ED Revellame, W Holmes, R Hernandez*, WT French, L Lerma, A Forks, T Ashe, LA Estévez*, Experimental Measurement and Modeling of the Type 3 Ternary System containing (Decane + Water + Triacetin), *Journal of Chemical Thermodynamics*, 67 (2013) 21 – 27.
33. PJ Pham, R Hernandez*, ED Revellame, WT French, Activated Sludge Oil: Identification and Characterization of Components, *Journal of Biobased Materials and Bioenergy*, 7:5 (2013) 626 – 638.
34. ED Revellame, WE Holmes, TJ Benson, AL Forks, WT French, R Hernandez*, Parametric Study on the Production of Renewable Fuels and Chemicals from Phospholipid-Containing Biomass, *Invited Publication in Topics in Catalysis*, 55:3-4 (2012) 185 – 195.
35. ED Revellame, R Hernandez*, W French, WE Holmes, TJ Benson, PJ Pham, A Forks, R Callahan II, Lipid storage compounds in raw activated sludge microorganisms for biofuels and oleochemicals production, *RSC Advances*, 2:5 (2012) 2015 – 2031.
36. ME Bambase Jr., RB Demafelis, RE Vibal, EC Escobar, ED Revellame, JA Capunitan, LHS Dizon, Biodiesel Production by Transesterification of *Jatropha curcas* L. Oil With Petroleum Ether as Dispersal Medium, *Philippine Journal of Crop Science*, 36:2 (2011) 48 – 55.

37. E Revellame, R Hernandez*, W French, W Holmes, E Alley, R Callahan II, Production of biodiesel from wet activated sludge, *Journal of Chemical Technology and Biotechnology*, 86:1 (2011) 61 – 68.
38. E Revellame, R Hernandez*, W French, W Holmes, E Alley, Biodiesel from activated sludge through in situ transesterification, *Journal of Chemical Technology and Biotechnology*, 85:5 (2010) 614 – 620.
39. RB Demafelis, BG Bataller, RRAL Cortado, BP Villacorte, LJ Pham, ED Revellame, VA Rodulfo Jr, MG Borines, Study of Some Parameters in the Biodiesel Production from Jatropha Oil Using Base Catalyzed Transesterification, *Philippine Journal of Agricultural and Biosystems Engineering*, 7 (2009) 51 – 58.
40. J Movillon, C Geron, S Valencia, A Parao, ED Revellame, K Millena, Kinetics Study on Enzymatic Saccharification of Corn Starch, *PIChE Journal*, 10:1 (2007) 5 – 13.
41. ED Revellame, RB Demafelis, M del Barrio, RD Dalawampu, Numerical Simulation and Performance Evaluation of a Direct-Contact Induced-Draft Cooling Tower under Varying Ambient Conditions, *PIChE Journal*, 10:1 (2007).
42. LJ Pham, ED Revellame, PM Rasco, The lipid molecular species and minor components of some Philippine seed and nut oils, in Advanced research on plant lipids: proceedings of the 15th international symposium on plant Lipids, ed by N Murata, M Yamada, I Nishida, H Okuyama, J Sekiya, W Hajime. Kluwer Academic Publishers, Dordrecht, Boston, (2003) pp. 23 – 26.

PATENTS and PATENT APPLICATIONS

1. ED Revellame, WE Holmes, Method of Manufacture for Hand-Sanitizing Lotion with Prolonged Effectiveness and Resulting Composition of Matter. International Appl. No.: PCT/US2018/048275, International Appl. No.: WO/2019/046254 (2019).
2. ED Revellame, WE Holmes, Method of Manufacture for Hand-Sanitizing Lotion with Prolonged Effectiveness and Resulting Composition of Matter. US Patent Appl. No.: 16/114,651, Publication No.: US 2019/0060213 A1 (2019)
3. ME Zappi, D Gang, E Revellame, A Chistoserdov, R Hernandez, R Bajpai, W Sharp, D Fortela, Biorefinery method and system for isolated environments. US Patent No.: US 10,479,716 B2, (2020).

INVITED PRESENTATIONS

1. E Revellame, R Hernandez, T French, W Holmes, M Zappi, Developing Co-Products from Tomorrow's Biorefinery: Municipal Wastewater Plants. *2017 Louisiana Energy Research and Development Forum*. University of Louisiana at Lafayette, Lafayette LA. October 24 – 26, 2017.
2. E Revellame, Application of Liquid-Liquid Equilibria in Bioprocessing. *Graduate Seminar*. Department of Chemical Engineering, University of Louisiana at Lafayette, Lafayette LA. October 31, 2016.
3. E Revellame, Experimental Measurement and Modeling of Type 3 Ternary Systems. *Graduate Seminar*. Department of Chemical Engineering, University of Louisiana at Lafayette, Lafayette LA. January 27, 2014.
4. E Revellame, W Holmes, R Hernandez, WT French, A Coker, Direct Conversion of Sewage Sludge into Fuel Components. *2012 MS Society of American Foresters*. Tupelo, MS. April 10 – 12, 2012.
5. E Revellame, R Hernandez, M White, W French, A Coker, A Iretskii, W Holmes, In-Situ Biodiesel Production from Microbial Lipids Using Supercritical Methanol. *2010 AIChE Annual Meeting*. Salt Lake City, UT. November 7 – 12, 2010.

CONFERENCE PROCEEDINGS AND PRESENTATIONS**(*presenting author) (°research mentor)**

1. R Aguda*, S Simoneaux, C Stelly, C Orgeron, B LeBlanc, R Nguyen, Y Ho, W Holmes, R Hernandez, M Zappi, E Revellame°, Algae Cultivation in a Space Station-Based Biorefinery. *Presented at the 2020 Virtual AIChE Annual Meeting*. November 16 – 20, 2020.
2. R Aguda*, H Hulin, C Orgeron, Y Ho, W Holmes, R Hernandez, M Zappi, E Revellame°, Algae Turf Filter Photobioreactor Designs, Operation and Testing for Algae Cultivation for Space Explorations. *Presented at the 2020 Virtual AIChE Annual Meeting*. November 16 – 20, 2020.
3. R Aguda*, C Stelly, B LeBlanc, C Orgeron, W Holmes, R Hernandez, Mark Zappi, E Revellame°, Maintenance of *Chlorella vulgaris* in high and low levels of carbon, nitrogen and phosphate in suspended growth photobioreactors. *Presented at the 2020 Engineering & Technology Week, University of Louisiana at Lafayette*. Lafayette, LA. [Poster]
4. C Stelly*, R Aguda, W Holmes, R Hernandez, Mark Zappi, E Revellame°, Comparison of 3 media formulations for optimal growth of *Chlorella vulgaris*. *Presented at the 2020 Engineering & Technology Week, University of Louisiana at Lafayette*. Lafayette, LA. [Poster] **[Won 1st place in the Undergraduate Student category]**
5. C Orgeron*, R Aguda, C Stelly, W Holmes, R Hernandez, M Zappi, E Revellame°, Design, Operation, and Testing of Attached Growth Photobioreactors for Cultivation of Algae. *Presented at the 2020 Engineering & Technology Week, University of Louisiana at Lafayette*. Lafayette, LA. [Poster]
6. K Zappi*, E Revellame°, Theoretical Analysis of the Viability of Water-Isopropanol-Cyclohexane Solvent System for Biomatter Lipid Extraction. *Presented at the 2020 Engineering & Technology Week, University of Louisiana at Lafayette*. Lafayette, LA. [Poster]
7. A Zappi*, S Simoneaux, R Aguda, E Revellame°, Carbon Dioxide Removal and Oxygen Replenishment While Producing Proteins within a Mars Human Space Camp. *Presented at the 2020 Engineering & Technology Week, University of Louisiana at Lafayette*. Lafayette, LA. [Poster]
8. J LeBlanc*, E Revellame°, G Massiha, DL Fortela, W Sharp, S Houston, Microbial Fuel Cell for Production of Biopower and Bioproducts. *Presented at the 2019 AIChE Annual Meeting*. Orlando, FL. November 10 – 15, 2019. [Oral]
9. R Aguda*, B LeBlanc, C Stelly, W Holmes, R Hernandez, M Zappi, E Revellame°, Algae Species on Turf Filter Reactor for Space Explorations. *Presented at the 2019 AIChE Annual Meeting*. Orlando, FL. November 10 – 15, 2019. [Poster]
10. R Aguda*, C Stelly, W Holmes, S LeBeouf, E Revellame°, Cloud Point Temperature Purification of Butyric Acid from Aqueous Solutions Using Non-Ionic Surfactant. *Presented at the 2019 AIChE Annual Meeting*. Orlando, FL. November 10 – 15, 2019. [Oral]
11. A Zappi*, S Simoneaux, R Aguda, E Revellame°, Carbon Dioxide Removal and Oxygen Replenishment While Producing Proteins within a Mars Human Space Camp. *Presented at the 2019 AIChE Annual Meeting*. Orlando, FL. November 10 – 15, 2019. [Poster]
12. R Aguda*, S Simoneaux, E Revellame°, DL Fortela, R Hernandez, M Zappi, Algae Species and Algae Reactors Design for Space Explorations. *Presented at the LaSPACE Fall 2019 Council Meeting*. Baton Rouge, LA. October 18 – 19, 2019. [Poster]
13. B Shrestha*, J Trahan, M Zappi°, DL Fortela, D Gang, R Hernandez, W Sharp, E Revellame, W Holmes, A Chistoserdov, Anaerobic Digestion of Wastewater for Producing Life Support Resources, within a Mars-based Space Camp. *Presented at the LaSPACE Fall 2019 Council Meeting*. Baton Rouge, LA. October 18 – 19, 2019. [Poster]

14. W Sharp*, M Zappi, R Hernandez, E Revellame, DL Fortela, W Holmes, A Chistoserdov, S Holmes, The Future of Wastes to Green Products from Urban Areas – Envisioning Biorefineries of the Future. *Presented at the 2019 IEEE Green Technologies Conference*. Lafayette, LA. April 3 – 6, 2019. [Oral]
15. E Revellame*, DL Fortela, R Hernandez, W Holmes, ME Zappi, Volatile Acid Platform Using a Combination of Anaerobic and Aerobic Bioprocessing for Microbial Lipids Production. *Presented at the 2019 IEEE Green Technologies Conference*. Lafayette, LA. April 3 – 6, 2019. [Oral]
16. DL Fortela*, ME Zappi, W Sharp, E Revellame, R Hernandez, Applications of Deep Learning Algorithms in Energy Bioprocess Models, *Presented at the 2019 IEEE Green Technologies Conference*. Lafayette, LA. April 3 – 6, 2019. [Oral]
17. ME Zappi*, E Revellame, DL Fortela, W Sharp, R Hernandez, W Holmes, D Gang, A Picou-Mikolajczyk, R Bajpai, Production of Energy Products from the Digestion of Shrimp Processing Wastewaters, *Presented at the 2019 IEEE Green Technologies Conference*. Lafayette, LA. April 3 – 6, 2019. [Oral]
18. S LeBoeuf*, C Stelly, B LeBlanc, R Aguda, E Revellame°, Surfactant-based Extraction of Lactic Acid from Aqueous Solutions: Phase Equilibrium Study, *Presented at the 2019 Engineering & Technology Week, University of Louisiana at Lafayette*. Lafayette, LA. [Poster] **[Won 3rd place in the Undergraduate Student category]**
19. C Stelly*, S LeBeouf, R Aguda, W Holmes, E Revellame°, Separation of Butyric Acid from a Non-ionic Surfactant Above its Cloud Point Temperature, *Presented at the 2019 Engineering & Technology Week, University of Louisiana at Lafayette*. Lafayette, LA. [Poster]
20. R Aguda*, B LeBlanc, C Stelly, R Hernandez, M Zappi, E Revellame°, Algae Species and Algae Reactor Design for Space Explorations, *Presented at the 2019 Engineering & Technology Week, University of Louisiana at Lafayette*. Lafayette, LA. [Poster]
21. J LeBlanc*, DL Fortela, W Sharp, S Bonilla, W Holmes, ED Revellame°, Microbial Fuel Cells for Production of BioPower and BioProducts, *Presented at the 2019 Engineering & Technology Week, University of Louisiana at Lafayette*. Lafayette, LA. [Poster]
22. B Shrestha*, ME Zappi°, R Hernandez, DLB Fortela, W Sharp, A Chistoserdov, D Gang, E Revellame, Biochemical Conversion System (BIOSYS) in Support of Human Life within Planetary Manned Stations Using Wastewater-Derived Products as the Feedstock. *Presented at the LaSPACE Fall 2018 Council Meeting*. Shreveport, LA. November 9 – 10, 2018. [Poster]
23. R Aguda*, M Zappi, E Revellame°, Algae Turf Filter Reactor for Space Explorations. *Presented at the LaSPACE Fall 2018 Council Meeting*. Shreveport, LA. November 9 – 10, 2018. [Poster]
24. DL Fortela, E Revellame*, W Sharp, M Zappi, Insights into the Anaerobic Digestion of Catfish and Shrimp Processing Wastewaters. *Presented at the 2018 AIChE Annual Meeting*. Pittsburgh, PA. October 28 – November 2, 2018. [Oral]
25. R Maglinao*, E Revellame, Synthesis of a Sustainable Multifunctional Biodiesel Additive from Lipid-Enhanced Sludges. *Presented at the 2018 AIChE Annual Meeting*. Pittsburgh, PA. October 28 – November 2, 2018. [Oral]
26. E Revellame°, R Aguda*, S Bonilla, S LeBoeuf, S Mondal, Separation of Volatile Organic Acids from Fermentation Using Non-Ionic Surfactants. *Presented at the 2018 AIChE Annual Meeting*. Pittsburgh, PA. October 28 – November 2, 2018. [Oral]
27. R Aguda*, S Bonilla, JB Hmda, E Revellame°, Developing Project Management Tools with Sustainability Criteria in Bioproducts Research and Development. *Presented at the Fourth Biannual Young Researcher Conference*. Xavier University of Louisiana, New Orleans, LA. March 17, 2018. [Oral]

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28. R Aguda*, S Bonilla, JB Hmida, E Revellame^o, Developing Sustainability Criteria as Decision-Making Tools in Bioproducts Research & Development Projects, *Presented at the 2018 Engineering & Technology Week, University of Louisiana at Lafayette*. Lafayette, LA. [Poster]
 29. R Bertrand*, B Holmes, C Orgeron, E Revellame^o, Determination of the Excess Water Conditions for the Gelatinization of Waxy Corn Starch, *Presented at the 2018 Engineering & Technology Week, University of Louisiana at Lafayette*. Lafayette, LA. [Poster] **[Won 3rd place in the Graduate Student category]**
 30. SK Mondal*, E Revellame^o, R Subramaniam, S Dufreche, Process Simulation for Fermentative Volatile Organic Acid Production, *Presented at the 2018 Engineering & Technology Week, University of Louisiana at Lafayette*. Lafayette, LA. [Poster]
 31. S Bonilla*, R Aguda, E Revellame^o, A Life Cycle Assessment on the Production of Hydrogen from the Reformation of Biogas produced from Anaerobic Digestion, *Presented at the 2018 Engineering & Technology Week, University of Louisiana at Lafayette*. Lafayette, LA. [Poster]
 32. S LeBoeuf*, R Aguda, D. Blue, E Revellame^o, Strategies to Increase Biohydrogen Production from Lignocellulosic Biomass through Dark Fermentation, *Presented at the 2018 Engineering & Technology Week, University of Louisiana at Lafayette*. Lafayette, LA. [Poster]
 33. T Kisel*, AR Kaveeshwar, E Revellame, D Gang, M Zappi, R Subramaniam^o, Adsorption and Mechanism of Iron (II) Removal from Fracking Wastewater using Pecan Shell Based Activated Carbon, *Presented at the 2018 Engineering & Technology Week, University of Louisiana at Lafayette*. Lafayette, LA. [Poster]
 34. C Gros*, AR Kaveeshwar, DD Gang, E Revellame, M Zappi, R Subramaniam^o, Adsorption of Barium from Fracking Wastewater using Pecan Shell Based Activated Carbon, *Presented at the 2018 Engineering & Technology Week, University of Louisiana at Lafayette*. Lafayette, LA. [Poster]
 35. E Revellame^o, W Holmes, DL Fortela, D Blue*, Pretreatment of Solid Wastes from Vegetable Processing for Biofuel Production, *Presented at the 2017 AIChE Annual Meeting*. Minneapolis, MN. October 29 – November 3, 2017. [Poster]
 36. B Boone*, M Crawford, M Gauthreaux, W Holmes^o, A Mondala, E Revellame^o, Renewable Fuels from Plastic Medical Wastes, *Presented at the 31st Annual Meeting of the Southern Section of AOAC International*. Atlanta, GA. April 17 – 20, 2017. [Oral]
 37. DF LaCour*, ME Zappi, W Holmes, ED Revellame^o, Microbial Digestion of Waste Materials for Biogas Production, *Presented at the 31st Annual Meeting of the Southern Section of AOAC International*. Atlanta, GA. April 17 – 20, 2017. [Poster]
 38. K Zappi*, W Holmes, D Fortela, K Leleux, E Revellame^o, Development of a Microbial Fuel Cell for Waste to Electricity Conversion, *Presented at the 31st Annual Meeting of the Southern Section of AOAC International*. Atlanta, GA. April 17 – 20, 2017. [Poster] **[Won 1st place]**
 39. H Hymel*, R Bertrand, W Holmes^o, D Lowry, E Revellame^o, Novel Process to Enhance Essential Oils, as Natural Chemical Insect Repellents, *Presented at the 31st Annual Meeting of the Southern Section of AOAC International*. Atlanta, GA. April 17 – 20, 2017. [Poster]
 40. D Blue*, D LaCour, S LeBoeuf, W Holmes, E Revellame^o, Acid Pretreatment of Solid Wastes from Vegetable Processing: Effect of Temperature and Acid Concentration, *Presented at the 2017 Engineering & Technology Week, University of Louisiana at Lafayette*. Lafayette, LA. [Poster] **[Won 2nd place in the Graduate Student category]**
 41. K Leleux*, K Zappi, D Fortela, M Zappi, W Holmes, ED Revellame^o, Development and Testing of a Microbial Fuel Cell Prototype, *Presented at the 2017 Engineering & Technology Week, University of Louisiana at Lafayette*. Lafayette, LA. [Poster] **[Won 1st place in the Undergraduate Student category]**

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42. K Zappi*, DF LaCour, ME Zappi, W Holmes, ED Revellame°, Ozonation of Solid Wastes from Vegetable Processing Plants for Biohydrogen and Volatile fatty acid production, *Presented at The Honors Program and Undergraduate Research Council Undergraduate Research Conference*, University of Louisiana at Lafayette. Lafayette, LA. November 18 – 19, 2016. [Poster]
 43. DF LaCour*, ME Zappi, W Holmes, ED Revellame°, Microbial Digestion of Waste Materials for Biogas Production, *Presented at The Honors Program and Undergraduate Research Council Undergraduate Research Conference*, University of Louisiana at Lafayette. Lafayette, LA. November 18 – 19, 2016. [Poster]
 44. DL Fortela, R Hernandez, M Zappi, WT French, E Revellame, A Mondala, W Holmes*, The Case of Making Fuel Oil from Sanitary Sewage, *Presented at the 2016 AIChE Annual Meeting*. San Francisco, CA. November 13 – 18, 2016. [Oral]
 45. DL Fortela, R Hernandez, M Zappi, A Chistoserdov, R Bajpai, E Revellame*, W Holmes, The Dynamics of Biodiesel Profile and Fungal Diversity of Activated Sludge during Lipid Accumulation on Acetic Acid, *Presented at the 2016 AIChE Annual Meeting*. San Francisco, CA. November 13 – 18, 2016. [Oral]
 46. DL Fortela, W Holmes*, E. Revellame, A Chistoserdov, R Bajpai, D Gang, M Zappi, R Hernandez, What if We Make Fuel Oil from Sanitary Sewage? *Presented at the 2016 AIChE Annual Meeting*. San Francisco, CA. November 13 – 18, 2016. [Poster]
 47. E Revellame*, M Zappi, D LaCour, Ozonation of Solid Wastes from Vegetable Processing Plants for Biogas Production, *Presented at the 2016 AIChE Annual Meeting*. San Francisco, CA. November 13 – 18, 2016. [Poster]
 48. E Revellame*, W Holmes, M Zappi, R Hernandez, R Bajpai, J Belgodere, Surfactant-Aided Extraction of Volatile Organic Acids from Aqueous Solution, *Presented at the 2016 AIChE Annual Meeting*. San Francisco, CA. November 13 – 18, 2016. [Poster]
 49. J Belgodere*, L Collazos, ED Revellame°, M Zappi, W Holmes, R Hernandez, Liquid-Liquid Extraction of Volatile Organic Acids using Specialty Surfactants: Phase Equilibrium Studies, *Presented at the 2016 Engineering & Technology Week, University of Louisiana at Lafayette*. Lafayette, LA. [Poster]
 50. L Collazos*, J Belgodere, ED Revellame°, R Hernandez, Analysis of Nonionic Surfactant Degradation in Acidic Solution, *Presented at the 2016 Engineering & Technology Week, University of Louisiana at Lafayette*. Lafayette, LA. [Poster]
 51. M. Crawford*, J Belgodere, ED Revellame°, W Holmes, R Hernandez, Determination of Cloud Point Temperature of Nonionic Surfactant, *Presented at the 2016 Engineering & Technology Week, University of Louisiana at Lafayette*. Lafayette, LA. [Poster]
 52. J Belgodere*, R Hernandez, W Holmes, M Zappi, R Bajpai, E Revellame°, Liquid-liquid Extraction of Volatile Fatty Acids (VFAs) using Surfactants, *Presented at the 2015 AIChE Annual Meeting*. Salt Lake City, UT. November 8 – 13, 2015. [Oral]
 53. J Belgodere*, L Collazos, ED Revellame°, M Zappi, W Holmes, R Hernandez, Experimental Measurement and Modeling of Ternary Systems Containing Surfactant-Water-VFAs, *Presented at the 2015 Engineering & Technology Week, University of Louisiana at Lafayette*. Lafayette, LA. [Poster] **[Won 3rd place in the Graduate Student category]**
 54. DL Fortela*, R Hernandez, M Zappi, W Holmes, E Revellame, S Dufreche, R Subramaniam, WT French, Refining the Concept of Integrating Anaerobic-Aerobic Microbial Systems to Produce Chemicals and Lipids for Fuels, *Presented at the 2014 AIChE Annual Meeting*. Atlanta, GA. November 16 – 21, 2014. [Oral]
 55. DL Fortela*, R Hernandez, M Zappi, W Holmes, E Revellame, S Dufreche, R Subramaniam, WT French, Discrete-Continuous Simulations for Performance Evaluation of Sequential Batch Reactor System for Lipid Accumulation from Volatile Fatty Acids by Activated Sludge Microorganisms

- Following Seasonal Stochastic Variations, *Presented at the 2014 AIChE Annual Meeting*. Atlanta, GA. November 16 – 21, 2014. [Poster]
56. E Revellame*, DL Fortela, W Holmes, R Hernandez, M Zappi, Fuels and Chemicals from Wastes through Anaerobic Digestion, *Presented at the 2014 AIChE Annual Meeting*. Atlanta, GA. November 16 – 21, 2014. [Poster]
57. A Bienvenu*, W Holmes°, E Revellame°, A Mondala, R Hernandez, M Zappi, A Rapid Analytical Method for Quantification of Volatile Organic Acids in Fermentation Broth, *Presented at the 2014 AIChE Annual Meeting*. Atlanta, GA. November 16 – 21, 2014. [Poster]
58. ED Revellame*, WE Holmes, R. Hernandez, WT French, LA Estévez, Experimental Measurement and Modeling of Type 3 Ternary System Containing *n*-Decane + Water + Triacetin. *Presented at the 2013 AIChE Annual Meeting*. San Francisco, CA. November 3 – 8, 2013. [Oral]
59. DL Fortela*, R Hernandez, WT French, A Mondala, W Holmes, E Revellame, E Egede, Integration of Anaerobic Digestion of Cellulose into Lipid Accumulation by a Mixed Microbial Consortium. *Presented at the 2013 AIChE Annual Meeting*. San Francisco, CA. November 3 – 8, 2013. [Oral]
60. AT Coker*, R Hernandez, ED Revellame, WE Holmes, WT French, Update to Biodiesel Production from Activated Sludge and Economic Analysis. *Presented at the 2013 AIChE Annual Meeting*. San Francisco, CA. November 3 – 8, 2013. [Oral]
61. ED Revellame, WE Holmes*, R Hernandez, WT French, Fluid-Bed Catalysis of Lipid-Enhanced Activated Sludge and Its Integration with Wastewater Treatment Facilities. *Presented at the 2013 AIChE Annual Meeting*. San Francisco, CA. November 3 – 8, 2013. [Poster]
62. WE Holmes*, ED Revellame, R Hernandez, P Buchireddy, Recovery of Phenolic Compounds from Pyrolysis Wastewater by Adsorption to Kenaf: Comparison of Different Kenaf Pre-Treatments. *Presented at the 2013 AIChE Annual Meeting*. San Francisco, CA. November 3 – 8, 2013. [Poster]
63. R Hernandez*, T French, A Mondala, DL Fortela, E Revellame, W Holmes, Integrating Biofuel Production to Wastewater Generation and Treatment. *Presented at the 2013 Inaugural Southeastern Conference Symposium*. Atlanta, GA. February 10 – 12, 2013. [Oral]
64. E Revellame*, W Holmes, R Hernandez, WT French, Production of Renewable Fuel from Enhanced Activated Sludge through a Fluidized-Bed Catalytic Cracking (FCC) Process. *Presented at the 2012 AIChE Annual meeting*. Pittsburgh, PA. October 28 – November 2, 2012. [Oral]
65. E Revellame*, W Holmes, R Hernandez, LA Estévez, WT French, Application of High Voltage for the Destabilization of Water-in-Oil Emulsion for the Extraction of Lipids from Microorganisms without Removal of Water. *Presented at the 2012 AIChE Annual meeting*. Pittsburgh, PA. October 28 – November 2, 2012. [Oral]
66. A Coker*, R Hernandez, E Revellame, W French, A Iretskii, W Holmes, M White, Comparison of 1- and 2- Step Biodiesel Production from Activated Sludge Using Supercritical Methanol and Economic Analysis. *Presented at the 2012 AIChE Annual meeting*. Pittsburgh, PA. October 28 – November 2, 2012. [Oral]
67. R Hernandez*, T French, A Mondala, P Pham, E Revellame, W Holmes, Alternative processes for the bioconversion of waste into fuels and chemicals. *Presented at the 244th ACS National Meeting & Exposition*. Philadelphia, PA. August 19 – 23, 2012. [Oral]
68. T Ashe*, E Revellame, W Holmes, R Hernandez, WT French, LA Estévez, Liquid-Liquid-Liquid Equilibria for the Ternary System Triacetin + Water + Decane. *Presented at the 2012 Southeast Biofuels and Renewable Energy Conference*. Jackson, MS. August 8 – 9, 2012. [Poster]
69. E Revellame*, W Holmes, L Lerma, R Hernandez, LA Estévez, WT French, High Voltage Electrostatic Destabilization of Water-oil Emulsion for the Extraction of Lipids in Wastewater

- Bacteria for Biofuel Production. *Presented at the 2012 AOCS Annual meeting*. Long Beach, CA. April 29 – May 2, 2012. [Oral]
70. W Holmes*, E Revellame, L Lerma, LA Estévez, R Hernandez, WT French, Development of a Laboratory Scale Electrostatic Coalescer Unit for Separation of Water-oil Emulsions for Biofuel Production. *Presented at the 2012 AOCS Annual meeting*. Long Beach, CA. April 29 – May 2, 2012. [Poster]
71. E Revellame*, W Holmes, R Hernandez, WT French, R Callahan II, Production of Renewable Fuel from Activated Sludge through a Fluidized-Bed Catalytic Cracking (FCC) Process. *Presented at the 2012 AOCS Annual meeting*. Long Beach, CA. April 29 – May 2, 2012. [Poster]
72. A Coker*, R Hernandez, T French, A Iretskii, E Revellame, G Zhang, M White, Optimization of Biodiesel Production by Direct Transesterification of Activated Sludge Using Supercritical Methanol. *Presented at the 38th NSBE Annual National Convention*. Pittsburgh, PA. March 28 – April 1, 2012. [Oral]
73. E Revellame*, W Holmes, R Hernandez, W French, Renewable Fuel from Activated Sludge using Fluidized-bed Catalytic Cracking (FCC) Process. *Presented at the 2011 AIChE Annual meeting*. Minneapolis, MN. October 16 – 21, 2011. [Oral]
74. W Holmes*, E Revellame, R Hernandez, W French, Development of a Fluidized-Bed Catalytic Cracking (FCC) System with On-Line Product Analyses for Conversion of Activated Sludge to Green Fuels. *Presented at the 2011 AIChE Annual meeting*. Minneapolis, MN. October 16 – 21, 2011. [Poster]
75. A Coker*, R Hernandez, WT French, E Revellame, W Holmes, G Zhang, A Iretskii, M White, Production of Biodiesel by Direct Transesterification of Activated Sludge Using Supercritical Methanol. *Presented at the 2011 AIChE Annual meeting*. Minneapolis, MN. October 16 – 21, 2011. [Oral]
76. E Revellame*, W Holmes, R Hernandez, W French, Elucidation of Reaction Pathway for the Heterogeneous Cracking of a Saturated Fatty Alcohol over H⁺ZSM5. *Presented at the 2011 Biofuels Conference*. Mississippi State, MS. October 5 – 7, 2011. [Poster]
77. R Callahan II*, E Revellame, W Holmes, R Hernandez, W French, Development of a Fluidized-bed Catalytic Cracking (FCC) System with On-line Product Analyses for Conversion of Activated Sludge to Green Fuels. *Presented at the 2011 Biofuels Conference*. Mississippi State, MS. October 5 – 7, 2011. [Poster]
78. PJ Pham*, R Hernandez, ED Revellame, AH Mondala, JD Cain, and T French, Characterization of activated sludge oil, *Abstracts of Papers, 241st ACS National Meeting & Exposition, Anaheim, CA, United States, March 27 – 31, 2011:FUEL-73* (2011).
79. A Coker*, L Lerma*, E Revellame*, M Marufuzzaman*, S Radhakrishnan*, Development of a Mix of Renewable Energy Sources to Meet 25 Percent of Total Energy Demand in the United States by 2025. *Presented at the A&WMA's 104th Annual Conference and Exhibition*. Orlando, FL. June 21 – 24, 2011 (**4th Placer on the 2011 Environmental Challenge International student team competition**). [Oral and Poster]
80. JR Donaldson*, JM Barnard, E Revellame, JI Hall, KS Biddle, WE Holmes, R Hernandez, WT French, A Genetically Modified Oleaginous Microorganism Capable of Accumulating Extracellular Lipids. *Presented at the 2011 ASM Annual meeting*. New Orleans, LA. May 21 – 24, 2011. [Poster]
81. A Coker*, R Hernandez, M White, W French, A Iretskii, E Revellame, W Holmes, G Zhang, Production of Biodiesel by Direct Transesterification of Activated Sludge using Supercritical Methanol. *Presented at the 10th Annual Southern Bio-Products and Renewable Energy*. Biloxi, MS. May 10 – 11, 2011. [Poster]

82. A Coker*, R Hernandez, WT French, A Iretskii, M White, E Revellame, W Holmes, Biodiesel Production by Direct Transesterification of Activated Sludge using Supercritical Methanol. *Presented at the 2011 AOCS Annual meeting*. Cincinnati, OH. May 1 – 4, 2011. [Oral]
83. P Pham*, R Hernandez, E Revellame, WT French, AH Mondala, R Callahan, JD Cain, Characterization of Activated Sludge Oil Lipidic Components. *Presented at the 2011 AOCS Annual meeting*. Cincinnati, OH. May 1 – 4, 2011. [Oral]
84. E Revellame*, R Hernandez, WT French, W Holmes, P Pham, Lipid Storage Compounds in Raw and Enhanced Activated Sludges. *Presented at the 2011 AOCS Annual meeting*. Cincinnati, OH. May 1 – 4, 2011. [Oral]
85. E Revellame*, A Coker, P Pham, A Mondala, R Hernandez, WT French, W Holmes, Activated Sludge: A Novel Biofuel Feedstock. *Presented at the 2011 AOCS Annual meeting*. Cincinnati, OH. May 1 – 4, 2011. [Oral Impromptu]
86. W Holmes*, E Revellame, R Hernandez, WT French, Renewable Fuel from Activated Sludge using Fluidized-bed Catalytic Cracking Process. *Presented at the 2011 AOCS Annual meeting*. Cincinnati, OH. May 1 – 4, 2011. [Oral Impromptu]
87. T French*, A Mondala, E Revellame, R. Hernandez, A new feedstock for renewable diesel: advantages, processing, and future strategies, in *Abstracts, Joint 66th Southwest and 62nd Southeast Regional Meeting of the American Chemical Society*, New Orleans, LA, United States of America, 2010, pp. SESW-159.
88. E Revellame*, R Hernandez, W French, E Alley, W Holmes, The Conversion of Lipids Derived From Activated Sludge Into Biofuels. *Presented at the 2010 AIChE Annual Meeting*. Salt Lake City, UT. November 7 – 12, 2010. [Oral]
89. P Pham*, R Hernandez, E Revellame, W French, Activated Sludge Oil: Identification and Characterization of Components. *Presented at the 2010 AIChE Annual Meeting*. Salt Lake City, UT. November 7 – 12, 2010. [Oral]
90. E Revellame*, R Hernandez, W French, W Holmes, E Alley, R Callahan II, Biodiesel from Wet Activated Sludge. *Presented at the 2010 Biofuels Conference*. Jackson, MS. August 12 – 13, 2010. [Poster]
91. R Callahan II*, E Revellame, P Pham, R Hernandez, W French, W Holmes, Analysis of Polyhydroxyalkanoates from Raw Activated Sludge. *Presented at the 2010 Biofuels Conference*. Jackson, MS. August 12 – 13, 2010. [Poster]
92. E Revellame*, R Hernandez, W French, W Holmes, E Alley, Green Diesel from Lipidic Materials obtained from Activated Sludge. *Presented at the 101st AOCS Annual Meeting & Expo*. Phoenix, AZ. May 16 – 19, 2010. [Oral]
93. E Revellame*, R Hernandez, W French, T Benson, E Alley, W Holmes, D Sparks, Activated Sludge: A potential feedstock for green diesel. *Presented at the 2009 AIChE Annual meeting*. Nashville, TN. November 8 – 13, 2009. [Poster]
94. E Revellame*, R Hernandez, W French, W Holmes, E Alley, Biodiesel from Activated Sludge via in situ Transesterification. *Presented at the 100th AOCS Annual Meeting & Expo*. Orlando, FL. May 3 – 6, 2009. [Poster]

STUDENT MENTORING

- **University of Louisiana at Lafayette, LA, USA**

Graduate Advisees

Lisa Dizon, Optimization of Methane to Lipids Bioconversion (PhD Student, In progress)

Robert Bertrand, Reactor Design for Methane to Lipids Bioconversion (PhD Student, In progress)

Remil Aguda, Algae Reactors for Space Explorations (PhD Student, In progress)

Jacob LeBlanc, Production of BioPower and BioProducts from Waste Streams using Microbial Fuel Cell (MS Systems Technology, Graduated: Spring 2019)

Sukanta Mondal, Simulation of Fermentative Volatile Organic Acid Production (MS Chemical Engineering, Graduated: Summer 2018)

Robert Bertrand, A Study on the Determination of Gelatinization Parameters, Ghost Structure Presence, and Emulsion Stabilizing Capacity of Waxy Corn Starch (MS Chemical Engineering, Graduated: Fall 2018)

Donald Blue, Chemical Pretreatment of Lignocellulosic Biomass for Utilization as Feedstock for Fuel and Chemical Production through Biochemical Processes (MS Chemical Engineering, Graduated: Summer 2018).

Myriam Dorcena, Aspen Plus Simulation of Shrimp Wastewater Anaerobic Digestion, Biogas Combustion and Combined Heat and Power Generation (MS System Technology, Graduated: Spring 2018).

Jorge Belgodere (as co-Major Advisor), Liquid-Liquid Extraction of Volatile Organic Acids using Specialty Surfactants (MS Chemical Engineering, Graduated: Summer 2016).

Graduate Student Mentoring

Dhan Lord Fortela (Graduated Summer 2016): Supercritical Fluid Processes, Analytical Procedures, Kinetic Modeling, Design of Experiments

Ashley Mikolajczyk (Ph.D. Student): Lipid Analysis, Design of Experiments

Undergraduate Student Research/Mentoring

Current Members:

Michael LaCour: CH₄ to lipids conversion

Shahrzad Massiha: Algal lipid analysis for nutritional quantitation

Lucile Fonseca: Algae studies

Y M Ho: Algae studies

Christian McGovern: Adsorption modeling, CH₄ to lipids conversion

Past Members:

Cody Stelly: Biomass Pretreatment, Phase Equilibria, Algae studies

Cory Orgeron: Phase Equilibria, Starch Processing, DSC analysis, Algae studies

Shayla Leboeuf: Biomass Pretreatment, Scientific Writing, Biohydrogen

David LaCour: Anaerobic Digestion, Gas Chromatography, Biomass Pretreatment

Alex Zappi: Organic acids to lipids conversion

Christopher Hoob: Used cooking oil clean-up, Adsorption modeling, CH₄ to lipids conversion

Riley Nguyen: Algae studies

Brandon LeBlanc: Phase Equilibria

Samantha Bonilla: Scientific Writing, Anaerobic Digestion, Life Cycle Assessment

Gabriela Jaimes: Used cooking oil clean-up

Lance Collazos: Phase Equilibria, Liquid Chromatography, Aspen Properties

Kyle Zappi: Microbial Fuel Cell, Anaerobic Digestion, Ozonation, Peroxidation

Kyle Leleux: Microbial Fuel Cell, Ozonation, Peroxidation

Joseph Sonnier: Microemulsion

Cassidy Cohen: Extraction, Anaerobic Digestion, Gas Chromatography

Alyssa Bienvenu: Analytical Techniques (Gas Chromatography, Wastewater Analyses), Anaerobic Digestion

Claire Maraist: Analytical Techniques (Gas Chromatography, Wastewater Analyses, Cracking Catalyst Preparation)

- **Dave C. Swalm School of Chemical Engineering, Mississippi State University, MS, USA**

Undergraduate Student Mentoring

Taylor Ashe: Fluidized Bed Catalytic Cracking, Electrostatic Coalescence, Phase Equilibria and Gas Chromatography

Allison Forks: Catalysis, Analytical Techniques (Solid-Phase Extraction, Thin Layer Chromatography and Phase Equilibria)

Robert Callahan II: In situ Biodiesel production, Fluidized Bed Catalytic Cracking and Microbial Lipid Extraction

Graduate Student Mentoring

Sara Shields-Menard (PhD Candidate – Graduated Spring 2016): Lipid Analysis

Marta Amirsadeghi (Ph.D. Candidate – Graduated Fall 2016): Microbial Kinetic Modeling and Analytical Lipid Analysis

Kamal Lamichhane (MS Student – Graduated Fall 2014): Analytical Lipid Analysis

Adebola Coker (PhD Candidate – Graduated Fall 2013): Catalysis, Supercritical Methanol (In situ) Biodiesel production, Extraction, Analytical Techniques and Kinetic Modeling

Hien Nguyen (MS Student): Microbial Kinetic Modeling and Analytical Lipid Analysis

- **Department of Chemical Engineering, University of the Philippines Los Baños, Laguna, Philippines**

Undergraduate Thesis Advisees

Karen Cabiltes, Evaluation of the effect of exopolysaccharide (EPS) in the removal of copper in simulated wastewater after alkali precipitation (Thesis Completed: November 2005).

Ralph Donald Dalawampu, Numerical simulation and performance evaluation of a direct-contact induced-draft cooling tower under varying ambient conditions (Thesis Completed: April 2006).

Juan Feliciano Cuevas, Solvent extraction of *Jatropha curcas* L. oil using diethyl ether as solvent (Thesis Completed: November 2007).

As Member of Undergraduate Thesis Committee:

Wastewater Treatment: Joanna B. Morden (Completed: April 2006)
Maria Katrina A. Pulutan (Completed: April 2006)
Denise Ester O. Santiago (Completed: April 2006)
Andrew R. Matanguihan (Completed: April 2006)
Karren April M. Pasco (Completed: April 2006)
Renan Orson A. Mallari (Completed: April 2006)
Winston P. Elliot (Completed: April 2006)
Maria Leah N. Panting (Completed: April 2006)
Shiella May D. Quitain (Completed: April 2006)
Ma. Ana May A. Pascual (Completed: April 2006)
Analisa M. Lumbres (Completed: November 2006)
Czarmagne G. Rafols (Completed: November 2006)
Adrian P. Sabanal (Completed: November 2006)

Equipment Design and Fabrication:

Denver B. Domingo (Completed: November 2005)
Maria Cristina V. Mahilum (Completed: April 2007)
France Noelle B. Villaruel (Completed: April 2007)

Lipid Extraction and Biodiesel Production:

Butch G. Bataller (Completed: November 2006)

Rafael Ray Adrian L. Cortado (Completed: April 2007)
Benjie P. Villacorte (Completed: April 2007)
Elliotte Jay M. Lagado (Completed: May 2007)
Lorebel G. Guantes (Completed: April 2007)
Donna Wren B. Libunao (Completed: November 2007)

OTHER SYNERGISTIC ACTIVITIES

- Journal Reviewer: *Environmental Science & Technology*; *RSC Advances*; *Green Chemistry*; *Journal of Chemical Technology and Biotechnology*; *Water Science and Technology*; *Arabian Journal of Chemistry*; *Chemical Engineering and Processing: Process Intensification*; *Sustainability*; *Energies*; *Processes*; *International Journal of Environmental Research and Public Health*; *Journal of Food Process Engineering*; *Industrial & Engineering Chemistry Research*; *Journal of Chemical & Engineering Data*; *Water Research*; *ACS Sustainable Chemistry & Engineering*; *Fluid Phase Equilibria*; *Springer Nature Applied Sciences*; *Fermentation*, *Journal of Environmental Science and Management (JESAM)*, *Water*, *Fuel*
- Proposal (Technical) Reviewer: Maryland Industrial Partnerships Program (MIPS) (<http://www.mips.umd.edu>) (2019); Lamar University: Center for Midstream Management and Science (<https://www.lamar.edu/engineering/midstreamcenter/index.html>) (2020)
- Special Topic Editor: *Energies and Applied Sciences*
- Guest Academic Editor: *Bioenergy Conversion Technologies* (https://www.mdpi.com/journal/energies/special_issues/bioenergy_conversion_technol)
- Session Chair/Co-Chair at AIChE Annual Meetings (2011 – present), AOCS Annual Meetings (2011 – 2014), and 2019 IEEE Green Technologies Conference.
- Conducted a Seminar on “Reference Management using Endnote” for Chemical Engineering Graduate Seminar (Fall 2018).
- Taught undergraduate chemical engineering courses (i.e., thermodynamics, mass and energy balances, separation processes, unit operations, industrial microbiology).
- Assisted in organizing the Mississippi State University Biofuels Conference (2009 – 2012).
- Assisted in organizing the 2017 Louisiana Energy Research and Development Forum.
- Professional Memberships: American Institute of Chemical Engineers, Philippine Institute of Chemical Engineers and American Oil Chemists’ Society.

PROPOSALS SUBMITTED

Title: Aqueous Surfactant Two-Phase Extraction of Soluble Metabolites coupled with Hydrogen Production from Anaerobic Digestion of Wastes

- Role: Principal Investigator
- Sponsor: BoRSF-ITRS
- Duration: July 1, 2015 – June 30, 2018
- Amount for Project Duration: \$256,150

Title: Integration of waste activated sludge and food processing wastes to produce novel materials and green chemicals

- Role: Co – Principal Investigator
- Sponsor: WERF/NSF
- Duration: June 1, 2016 – May 30, 2019
- Amount for Project Duration: \$329,668

Title: Surfactant-aided extraction of biomolecules from microbes

- Role: Principal Investigator
- Sponsor: UGRC – UL Lafayette
- Duration: January 2016 – April 2016
- Amount for Project Duration: \$2,000

Title: RII Track-2 FEC: Fractionation of Microorganisms for Specialty Chemical Production

- Role: Co – Principal Investigator
- Institutions Involve: University of Louisiana at Lafayette, Mississippi State University, Clemson University, and Jackson State University
- Sponsor: NSF-EPSCoR
- Duration: July 2016 – June 2020
- Amount for Project Duration: \$6M (\$1.6M for UL Lafayette)

Title: Development of an Udder Dip with Extended Period of Effectiveness for Prevention of Bovine Mastitis

- Role: Principal Investigator
- Sponsor: BoRSF/ITRS
- Duration: June 1, 2017 – June 30, 2020
- Amount for Project Duration: \$170,635

Title: Surfactant-based Extraction of Volatile Organic Acids from Anaerobic Digestion of Wastes

- Role: Principal Investigator
- Sponsor: BoRSF/RCS
- Duration: June 1, 2017 – June 30, 2020
- Amount for Project Duration: \$182,655

Title: Biphasic Extractive Butyric Acid Fermentation using Nonionic Surfactant: Effect of Nutrients and Agitation on Phase Equilibria

- Role: Principal Investigator
- Sponsor: ORAU
- Duration: June 1, 2017 – May 31, 2018
- Amount for Project Duration: \$10,000

Title: Sustainable Fisheries in Gulf of Mexico – A Holistic Analysis of Market Potential and Supply Chain Alignment

- Role: Key Personnel
- Sponsor: FFAR
- Duration: January 1, 2018 – December 31, 2020
- Amount for Project Duration: \$999,997

Title: Up-Valuing Methane-Based Gases, Such as Natural Gas and Biogas, into Commercially Valuable Lipids

- Role: Co – Principal Investigator
- Sponsor: BoRSF/ITRS
- Duration: June 1, 2018 – June 30, 2021
- Amount for Project Duration: \$257,500

Title: Extractive Fermentation for Valorization of Waste Streams

- Role: Principal Investigator
- Sponsor: BoRSF/RCS
- Duration: June 1, 2018 – June 30, 2021
- Amount for Project Duration: \$186,219

Title: Bioelectrochemical Conversion of Wastewaters into Biopower and Bioproducts

- Role: Principal Investigator
- Sponsor: LaSPACE
- Duration: September 1, 2018 – August 31, 2019
- Amount for Project Duration: \$69,520

Title: Production of Biofuels and Bioproducts from Urban Wastes

- Role: Principal Investigator
- Sponsor: DOE/EERE
- Duration: October 1, 2018 – September 30, 2021
- Amount for Project Duration: \$2.38M

Title: Generation of Drilling Fluids and Corrosion Inhibitors from Enhanced Activated Sludge

- Role: Co – Principal Investigator
- Sponsor: DOE/EERE
- Duration: October 1, 2018 – September 30, 2021
- Amount for Project Duration: \$2M

Title: Production of Commercial Grade Adhesives from Wastewater Treatment Plant Sludges

- Role: Co – Principal Investigator
- Sponsor: DOE/EERE
- Duration: October 1, 2018 – September 30, 2021
- Amount for Project Duration: \$1.6M

Title: Conversion of Wastewaters into Biopower and Bioproducts through Microbial Fuel Cell

- Role: Principal Investigator
- Sponsor: BoRSF/RCS
- Duration: June 1, 2019 – June 30, 2020
- Amount for Project Duration: \$19,875

Title: Acquisition of Dynamic Mechanical Analysis [DMA] System for Advanced Materials Characterization

- Role: Co – Principal Investigator
- Sponsor: BoRSF/Targeted Enhancement
- Duration: June 1, 2019 – June 30, 2020
- Amount for Project Duration: \$59,236

Title: Prediction of Increased Risk Based on Available Safety, Quality and Maintenance Data

- Role: Co – Principal Investigator
- Sponsor: NASA Stennis Center
- Duration: April 1, 2019 – September 30, 2019
- Amount for Project Duration: \$50,000

Title: Analysis of lipids and fatty acid component of microalgae

- Role: Principal Investigator
- Sponsor: LaSPACE
- Duration: August 1, 2019 – May 31, 2020
- Amount for Project Duration: \$6,000

Title: Biorefinery System for Urban/Suburban Waste Conversion into Energy and Value-Added Co-Products: An Alliance of US Universities Interfacing with Canadian and Mexican Universities to Develop Cost-Effective Design Options While Providing an Educational Pipeline for Future Green Energy Professionals

- Role: Co – Principal Investigator
- Sponsor: DOE-EERE
- Duration: October 1, 2019 – September 30, 2024
- Amount for Project Duration: \$10M

Title: Evaluation of a Non-ionic Surfactant as Solvent for Extractive Butyric Acid Fermentation

- Role: Principal Investigator
- Sponsor: BoRSF/RCS
- Duration: June 1, 2020 – June 30, 2021
- Amount for Project Duration: \$20,000

Title: Bioelectrochemical Conversion of Wastewaters into Biopower and Bioproducts

- Role: Principal Investigator
- Sponsor: LaSPACE/REA
- Duration: September 1, 2020 – August 31, 2021
- Amount for Project Duration: \$34,724

Title: Advanced Carbon Composites from Hard to Recycle Polymer Wastes

- Role: Co-Principal Investigator
- Sponsor: DOE/EERE
- Duration: January 01, 2021 – December 31, 2025
- Amount for Project Duration: \$1.85M

Title: Production of Commercial Grade Adhesives from Wastewater Treatment Plant Sludges

- Role: Co-Principal Investigator
- Sponsor: DOE/EERE
- Duration: January 01, 2021 – December 31, 2023
- Amount for Project Duration: \$1.25M

PROPOSALS FUNDED

Title: Anaerobic Digestion of Waste Products into Power and Value-Added Products

- Role: Co – Principal Investigator
- Sponsor: Cleco Power
- Duration: January 1, 2014 – December 31, 2019
- Amount for Project Duration: \$1.35M

Title: Evaluation of Formulation and Production of Non-Alcoholic Hand Sanitizing Lotion

- Role: Principal Investigator
- Sponsor: ABI
- Duration: August 2016 – July 2017
- Amount for Project Duration: \$59,500

Title: Renewable fuels from plastic medical wastes

- Role: Principal Investigator (In collaboration with Western Michigan University)
- Sponsor: Hospital Network Ventures, LLC
- Duration: August 1, 2017 – April 31, 2018
- Amount for Project Duration: \$8,800

Title: Production of Fuels and Other Life Support Products Using Wastewaters as a Feed into a Space-Based Biochemical Conversion System (BIOSYS)

- Role: Co – Investigator
- Sponsor: NASA – EPSCoR

- Duration: July 1, 2018 – June 30, 2021
- Amount for Project Duration: \$2.13M

Title: Formulation and Initial Testing of Emulsified Surface Spray Sanitizer

- Role: Principal Investigator
- Sponsor: ABI
- Duration: May 15, 2018 – May 14, 2019
- Amount for Project Duration: \$105,000

Title: Right-of-Way Utilization for Renewable Energy Production: An Applications Potential Assessment within Louisiana

- Role: Principal Investigator
- Sponsor: LTRC
- Duration: July 1, 2018 – June 30, 2019
- Amount for Project Duration: \$30,000

Title: Production of BioPower and BioProducts from Waste Streams using Microbial Fuel Cell

- Role: Principal Investigator
- Sponsor: LaSPACE/GSRA
- Duration: September 1, 2018 – August 31, 2019
- Amount for Project Duration: \$16,000

Title: Microbial Conversion of Methane-Based Gases, Such as Natural Gas and Biogas, into Commercially Valuable Lipids

- Role: Principal Investigator
- Sponsor: BoRSF/ITRS
- Duration: June 1, 2019 – June 30, 2022
- Amount for Project Duration: \$331,220

Title: Lipids and fatty acid analysis of microalgal biomass as life-support product for space exploration

- Role: Principal Investigator
- Sponsor: LaSPACE/LURA
- Duration: August 15, 2020 – August 14, 2021
- Amount for Project Duration: \$6,000