

CURRICULUM VITAE

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Education

Institution	Degree	Year	Major
U. of Southern MS.	B.S.	1982	Microbiology/Chemistry

ADVISOR: R.D. Ellender, Dean, University of Southern MS (Ret.)

Directed study in Biochemistry: Reassociation and Hybridization properties of DNA

Professional Experience

Director, Analytics	University of Louisiana at Lafayette	7/2013 - Present
Director, AIT	Mississippi State University Dave C. Swalm School of Chemical Engineering	7/2010 - 6/2013
Director, AIT	Mississippi State Chemical Laboratory	2/1998 - 6/2010
Application Chemist	Varian Instrument, Walnut Creek, CA	8/1985 - 1/1998
Research Assoc.	U. of Mississippi Medical Center, Dept. of Medicine, Jackson, MS	1/1983 - 6/1985

Synergistic Activities

For over 40 years Bill Holmes has been involved with instrumentation used for analytical chemistry separation and identification of organic chemicals. He is co-inventor of 6 Patents and has published over 100 scientific papers and given lectures at both national and international conferences. His research has focused on method development of various analyses from life science, petroleum, pharmaceutical, environmental, food science and basic chemical. Before returning to academics his experiences at a leading instrument company, Varian Associates in Walnut Creek, CA allowed him to gain expertise in instrumental hardware design and modifications to adapt to new or changing methodologies. His current research projects at UL include analysis and instrumentation development for biotechnology such as on-line systems for rapid monitoring of reaction processes. He is a member of the American Chemical Society, American Society of Mass Spectrometry, American Oil Chemists Society, and the Association of Official Analytical Chemist and recipient of the MS State University's 2012 Bagely College of Engineering Research Award. Holmes is also the recipient of the University of Louisiana 2015 Research Award, 2016-2017, Research Innovator Award, and chairs the UL Biosafety Committee.

Patents and Inventions

1. 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). ED Revellame, WE Holmes.
<https://patents.google.com/patent/WO2019046254A1/en>
2. 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). ED Revellame, WE Holmes.
<https://patents.google.com/patent/US20190060213A1/en>
3. Integrated Biorefinery system and Method. US20220403423A1(2022). Mark E. Zappi, Rafael Hernandez, Dhan Lord Fortela, Prashanth Buchireddy, Emmanuel Revellame, Wayne Sharp, John Guillory, Daniel Gang, William Holmes.
<https://patents.google.com/patent/US20220403423A1/en>
4. Amorphous Cobalt-Inherent Silicon Oxide Catalyst. Daniel Gang, Qiyu Lian, Mark Zappi, William Holmes. [US Patent App.17/390,254](#). Published 2/16/23.
5. Rack for Treatment of Respiratory Masks. US20210308312A1 (2021). Mark E. Zappi, William Holmes, Andrei Chistoserdov, Wayne Sharp, Alex Zappi, Rafael Hernandez, William Chirdon, Don Begneaud, Thomas Broussard.
<https://patents.google.com/patent/US20210308312A1/en>
6. Device and Method for Recycling of Respiratory Masks and Other Personal Protective Equipment. US20210316029A1 (2022). Mark E. Zappi, William Holmes, Andrei Chistoserdov, Wayne Sharp, Alex Zappi, Rafael Hernandez, William Chirdon.
<https://patents.google.com/patent/US20210316029A1/en>
7. Optimized bench-scale, research-grade microalgae culturing system. A novel design for a microalgae photobioreactor was developed and built. This system appears to offer much more flexibility and potential ability to provide more design-oriented data than the simpler systems used in many bench-scale research efforts. Mark E. Zappi, William Holmes, and Sarah Simoneaux.
8. Novel activation catalyst for peroxymonosulfide oxidation systems. The first-time synthesis of an activation catalyst was developed. Daniel Gang, Qiyu Lian, William Holmes, and Mark E. Zappi.
9. Dynamic bench-scale anaerobic digester test systems. A novel design that provides a high-degree of process control coupled with numerous process performance evaluation testing points was invented that should out-performance currently used bench testing systems. Mark E. Zappi, William Holmes, Wayne Sharp and Bimi Shrestha.
10. Microcosms for anaerobic digestion screening. An improved design for screening candidate anaerobic digester operations conditions was designed that offers greatly improved performance over tradition shake-flask microcosms. Mark E. Zappi, William Holmes, Wayne Sharp and Bimi Shrestha.

Technology & Techniques

1. CHEE 697- Analytical Techniques in Process Chemistry. Course developed and taught to graduate students, who need process chemistry sample and standards preparation, proper use of

Analytical Chemistry Instrumentation and to develop critical thinking applied to method development.

2. Gel Permeation Chromatography (GPC) method for determining the molecular weight of Algal proteins to monitor health of population.
3. Polymerase Chain Reaction (PCR) analysis of DNA of proteins, including DNA fingerprinting, detection of bacteria or viruses (particularly COVID), and diagnosis of genetic disorders.
4. LC-MS/MS is a **tool for determining the amino acid sequence of proteins**. By first breaking the protein down into smaller peptides, and then using MS/MS to fragment the peptides, the sequence can be determined, and the identification of protein can be generated.
5. Automated Solvent Extraction (ASE) method for extraction of lipids, producing a high yield of lipids and an expedited rate of analysis.
6. Fatty Acid Methyl Esters (FAMES) analysis of lipids for identification and quantitation using Gas Chromatography / Mass Spectrometry (GC/MS).
7. Method for Total Organic Carbon (TOC) using combustion analysis of wastewater to track reduction of organics in reactor systems.
8. Method for Solid Phase Extraction (SPE) of inlet and outflow wastewater organics in reactor systems to determine the identification of organic compounds making up the Total Organic Carbon (TOC) load.
9. Organic analysis of SPE extracts using Gas Chromatography / Mass Spectrometry (GC/MS) and Liquid Chromatography / Mass Spectrometry (LC/MS) for positive identification of organic substitutes.

Publications

Samuel Antwi, William Holmes, Dongmei Cao, Dhan Fortela, Tolga Karsili, Emmanuel Revellame, August Gallo, Mark Zappi, Rafael Hernandez. Evaluating the Impact of Preparation Method on the Performance of Metal-Oxide Catalyst for Ethyl Mercaptan Removal from Natural Gas. *Preprint*. April 2026. DOI: [10.20944/preprints202604.0621.v1](https://doi.org/10.20944/preprints202604.0621.v1)

Emmanuel Revellame, Kristel Gatdula, Remil Aguda, Dhan Lord Fortela, William holmes, Rafael Hernandez, Mark Zappi. Handbook of Microalgae-Based Processes and Products (Second Edition) Chapter 60 - Microalgae for bioregenerative life support in space. *Science Direct*. March 2026, pages 1069-1106. <https://doi.org/10.1016/B978-0-443-34082-6.00044-1>

Umama Lamiya, David Shoemaker, Xiaobo Lei, Smia ALam, William Holmes, Jonathan Raush, Mark Zappi, Daniel Gang. Adsorption and Recovery of Tellurium from Aqueous Solutions Using Calcined Mg-Al Layered Double Hydroxide Adsorbent. *Industrial & Engineering Chemistry Research*. March 2026. 65, 6196-6208. <https://pubs.acs.org/doi/pdf/10.1021/acs.iecr.5c05167>

Samia Alam, David Shoemaker, Xiaobo Lei, Umama Lamiya, William Holmes, Mehdi Mokhtari, Mark Zappi, Daniel Gang. Preparation and Performance Evaluation of Granulated PVDF-Lithium Ion-Sieve: An Efficient Direct Lithium Extraction (DLE) System for Industrial

Applications. *Journal of Environmental Chemical Engineering*. January 2026. Vol. 14, 2.
<https://doi.org/10.1016/j.jece.2026.121474>

Samuel Antwi, Olatunji Olayiwola, William Holmes, Dhan Fortela, Tolga Karsili, Emmanuel Revellame, August Gallo, Mark Zappi, Rafael Hernandez. Experimental Study on the Influence of Metal Oxide Catalyst Performance in Sulfur Compounds Removal from Natural Gas. January 2026. Preprints. [doi: 10.20944/preprints202601.0752.v1](https://doi.org/10.20944/preprints202601.0752.v1)

Shoemaker, David, Lei, Xiaobo, Holmes, William, Mokhtari, Mehdi, Fortela, Dhan Lord, Mikolajczyk, Ashley, Revellame, Emmanuel, Hernandez, Rafael, Zappi, Mark, and, Gang, Daniel. An evaluation of hydrogen peroxide-mediated hydroxylation of titanium-based ion sieves for enhancing the performance of lithium capture from aqueous solutions. *Chemical Engineering Journal*. January 2026. V527, Paper No. 171896.
<https://doi.org/10.1016/j.cej.2025.171896>

Pooja Upadhyay, Ramalingam, William Holmes, Andrei Chistoserdov. Assessment of lignocellulose hydrolysate component consumption by co-culture of *Acinetobacter baylyi* ADP1 and *Lipomyces starkeyi* Y-1389. *Archives of Microbiology*. November 2025, 208 (1).
<https://doi.org/10.1007/s00203-025-04541-7>

Robert Bertrand, Lisa Stephanie Dizon, William Holmes, Dhan Fortela, Andrei Chistoserdov, Rafael Hernandez, Mark Zappi, Emmanuel Revellame. Design and evaluation of a novel two-phase partitioning bioreactor to enhance methane mass transfer. *Journal of Chemical Technology and Biotechnology*. September 2025, 100: 2455-2464. [DOI 10.1002/jctb.70063](https://doi.org/10.1002/jctb.70063)

Gatdula, Kristel, Gallo, August, Holmes, William, Chistoserdov, Andrei, Zappi, Mark, Hernandez, Rafael, and Revellame, Emmanuel. Enhancing Nonionic Surfactant-Mediated Butyric Acid Extraction through Fermentation Medium Salt Augmentation. *ACS Journal of Sustainable Chemistry and Engineering*. September 2025, Vol. 13/Issue 38.
doi.org/10.1021/acssuschemeng.5c07911

Anusha Imran, Xiaobo Lei, David Shoemaker, William Holmes, Hui Yan, Mark Zappi, Daniel Gang. Adsorption of PFCAs using polyethyleneimine modified Biochar: Role of chain length and effects of water matrices. *Chemosphere*. August 2025, 386:144650.
<https://dx.doi.org/10.1016/j.chemosphere.2025.144650>
Preprints. January 2025. [http://dx.doi.org/10.2139/ssrn.5202720](https://dx.doi.org/10.2139/ssrn.5202720)

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Sustainable Wood Adhesives. *Sustainability*. July 2025, 17(15), 6679.
<https://doi.org/10.3390/su17156679>

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<http://dx.doi.org/10.1016/j.jenvman.2025.126497>

Gerson Martinez-Zuniga, Samuel Antwi, Percival Soni-Castro, Olatunji Olayiwola, Maksym Chuprin, William Holmes, Prashanth Buchireddy, Daniel Gang, Emmanuel Revellame, Mark Zappi, Rafael Hernandez. Correction: Martinez-Zuniga et al. Methyl Mercaptan Removal from Methane Using Metal-Oxides and Aluminosilicate Materials. *Catalysts* 2024, 14, 907. *Catalysts*. June 2025, 15 (7):619. <https://doi.org/10.3390/catal15070619>

Kristel Gatdula, Lucile Fonseca, Peng Yin, William Holmes, Rafael Hernandez, Mark Zappi, Emmanuel Revellame. Utilizing *Chlorella vulgaris* and In Situ Resources for Biomineralization-Driven Fabrication of Mars Bricks. *ACS Earth and Space Chemistry*. February 2025, 9(4).
<http://dx.doi.org/10.1021/acsearthspacechem.4c00338>

Dhan Lord Fortela, Ashley Mikolajczyk, Rafael Hernandez, Emmanuel Revellame, Wayne Sharp, William Holmes, Daniel Gang, Mark Zappi. Dynamic Time Warping as Elementary Effects Metric for Morris-Based Global Sensitivity Analysis of High Dimension Dynamical Models. *Mathematical and Computational Applications (MCA)*. November 2024, 29(6):111.
<http://dx.doi.org/10.3390/mca29060111>

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<http://dx.doi.org/10.3390/catal14120907>

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Chelsea Trahan Zeringue, William Chirdon, Wayne Sharp, Daniel Gang, Ahmed Khattab, Rafael Hernandez, William Holmes, Mark Zappi. Physical and Chemical Characterization of Sustainable Green Adhesives Derived from Municipal Treatment Plant Sludges. *Sustainability*. October 2024, 16(21):9346. <http://dx.doi.org/10.3390/su16219346>

Bimi Shrestha, Blake Foret, Wayne Sharp, Daniel Gang, Rafael Hernandez, Emmanuel Revellame, Dahn Lord Fortela, William Holmes, Mark Zappi. An Overview of the Potential for Municipal Wastewater Treatment Plants to Be Integrated into Urban Biorefineries for the Production of Sustainable Bio-Based Fuels and Other Chemicals. *Current Pollution Reports*. July 2024, 10(3):1-17. <http://dx.doi.org/10.1007/s40726-024-00318-6>

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Ted Joanen, Ashley Mikolajczyk, Mark Staton, Josh Kaplan, William Holmes, Mark Zappi. Impacts of Diet on Reproductive Performance of Captive American Alligators (*Alligator mississippiensis*). *Animals*. December 2023, 13(24):3797. <https://doi.org/10.3390/ani13243797>

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Emmanuel Revellame, Remil Aguda, Kristel Gatdula, William Holmes, Dhan Lord Fortela, Wayne Sharp, Daniel Gang, Andrei Chistoserdov, Rafael Hernandez, Mark Zappi. Microalgae in bioregenerative life support systems for space applications. *Algal Research*. November 2023, 77 (Suppl. 1):103332. <https://doi.org/10.1016/j.algal.2023.103332>

Fortela, D.L.B.; Travis, A.; Mikolajczyk, A.P.; Sharp, W.; Revellame, E.; Holmes, W.; Hernandez, R.; Zappi, M. Quantitating Wastewater Characteristic Parameters Using Neural Network Regression Modeling on Spectral Reflectance. *Clean Technologies*. September 2023, 5(4):1186-1202. <https://doi.org/10.3390/cleantechnol5040059>

Chelsea Trahan Zeringue, William Chirdon, Wayne Sharp, Daniel Gang, Ahmed Khattab, Rafael Hernandez, Emmanuel Revellame, William Holmes, Mark Zappi. Production of Sustainable Green Adhesives from Proteinaceous Biomass with an Emphasis on Waste-Derived Protein Residuals: A Review. *Industrial & Engineering Chemistry Research*. August 2023, 62(33). <https://doi.org/10.1021/acs.iecr.3c00963>

Fortela, D.L.B.; Mikolajczyk, A.P.; Carnes, M.R.; Sharp, W.; Revellame, E.; Holmes, W.; Hernandez, R.; Zappi, M. Predicting Molecular Docking Affinity of Per-and Polyfluoroalkyl Substances (PFAs) Towards Human Blood Proteins Using Generative AI Algorithm DiffDock. *Preprints*. August 2023. <http://dx.doi.org/10.1101/2023.08.03.551898>

Fortela, D.L.B.; Travis, A.; Mikolajczyk, A.P.; Sharp, W.; Revellame, E.; Holmes, W.; Hernandez, R.; Zappi, M. Quantitating Wastewater Characteristic Parameters Using Neural Network Regression Modeling on Spectral Reflectance. *Preprints*. July 2023, 2023071405. <https://doi.org/10.20944/preprints202307.1405.v1>

Devin Peck, William Holmes, Mark Zappi, Rafael Hernandez, Daniel Gang, Prashanth Buchireddy. Novel nickel ceramic filter for hot gas cleanup of tars from syngas. *Fuel Processing Technology* Volume 244. June 2023. <https://doi.org/10.1016/j.fuproc.2023.107708>

Percival Soni Castro, Gerson Martinez, William Holmes, Prashanth Buchireddy, Daniel Gang, Emmanuel Revellame, Mark Zappi, Rafael Hernandez. Review of the adsorbents/catalysts for the removal of sulfur compounds from natural gas. *Gas Science and Engineering*. May 2023. <http://dx.doi.org/10.1016/j.jgsce.2023.205004>

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Xiaobo Lei, Qiyu Lian, Xu Zhang, Tolga Karsili, William Holmes, Yushun Chen, Mark Zappi, Daniel Gang. A review of PFAS adsorption from aqueous solutions: Current approaches, engineering applications, challenges, and opportunities. *Environmental Pollution*. March 2023. 321(5):121138. DOI: [10.1016/j.envpol.2023.121138](https://doi.org/10.1016/j.envpol.2023.121138)

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William Holmes*, Mark Zappi. Positioning of Wastewater Treatment Plants as Integrated Biorefineries for Production of Sustainable Chemicals. Oral presentation at the *Southern Section of AOAC International 39th Annual Conference*, Atlanta, Georgia. March 31- April 1, 2026.

William Holmes*. Hydrogen Economy From Pipe Dreams to Pipelines. Oral presentation at the *Southern Section of AOAC International 39th Annual Conference*, Atlanta, Georgia. March 31- April 1, 2026.

Ava Welch*, Mark Zappi, Andrei Chistoserdov, William Holmes. From Proteins to Performance: Protein Determinants of Binding and Polyamidation in Bio-Adhesive Systems. Poster presentation at the *Southern Section of AOAC International 39th Annual Conference*, Atlanta, Georgia. March 31- April 1, 2026.

Hayden Hulin*, Austin Walker, Rylan Guidry, Prashanth Buchireddy, David Shoemaker, William Holmes, Mark Zappi. Turning Waste into Growth: Pyrolysis of Chicken Litter for Natural Fertilizer Production. Poster presentation at the *Southern Section of AOAC International 39th Annual Conference*, Atlanta, Georgia. March 31- April 1, 2026.

Esau Obuong*, Dhan Fortela, William Holmes, Rafael Hernandez, Andrei Chistoserdov, Ashley Mikkolajczyk, Wayne Sharp, Mark Zappi. Production of Nonanoic Acid as Herbicide from Wastewater via In-situ Ozone Cracking of Microbial Oils. Oral presentation at the *Southern Section of AOAC International 39th Annual Conference*, Atlanta, Georgia. March 31- April 1, 2026.

Katherine Ashurst*, Elizabeth Boyd*, Daniel Gang, William Holmes, Mark Zappi. PFAS Removal from Water and Wastewater: Advanced Oxidation Assessed by Revident Q-TOF. Oral presentation at the *Southern Section of AOAC International 39th Annual Conference*, Atlanta, Georgia. March 31- April 1, 2026.

Serenity Broussard*, William Holmes, Daniel Gang, August Gallo, Prashanth Buchireddy, Rafael Hernandez, Mark Zappi. Identifying Key Operational Factors in Ozone-based AOP Treatment of 1,4-Dioxane. *Engineering and Technology Week 2026 Graduate Poster Competition*. University of Louisiana at Lafayette. Lafayette, Louisiana. March 23-27, 2026.

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Elizabeth Boyd*, Katherine Ashurst, Xiaobo Lei, William Holmes, Daniel Gang, Rafael Hernandez, Mark Zappi. Removal of Perfluorooctanoic Acid (PFOA) in Water Using Advanced Oxidation Processes. *Engineering and Technology Week 2024 Graduate Poster Competition*. University of Louisiana at Lafayette. Lafayette, Louisiana. March 18-22, 2024.

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Dizon LSH*, Bertrand RS, Holmes WE, Hernandez RA, Zappi ME, Fortela DLB, Revellame ED. Bacterial Conversion of Methane to Lipids: A Technical Assessment and Benefit-to-Cost Analysis as Methane Abatement Strategy. Poster at the *2022 AIChE Annual Meeting*. Phoenix, AR. November 13-18, 2022.

KM Gatdula*, ED Revellame, WE Holmes, Sustainable Recovery of Butyric Acid through Salt-induced Aqueous Two-Phase Extraction using Non-ionic Surfactants. Oral presentation at the *2022 AIChE Annual Meeting*. Phoenix, AZ. November 13 – 18, 2022.

Xiaobo Lei*, William Holmes, Mark Zappi, Daniel Gang (2022). Adsorption of perfluorooctanoic acid (PFOA) onto polyethyleneimine modified graphene oxide (GO-PEI). Presentation at *Fall 2022 American Chemical Society (ACS) National Meeting*, Chicago, IL. Aug 20 - 24, 2022.

Dizon LSH*, Bertrand RS, Holmes WE, Hernandez RA, Zappi ME, Fortela DLB, Revellame ED. Assessing the Influence of Methanotrophic Growth Conditions on Methane Biocatalysis for Lipid Production: An Initiative towards Climate Change Mitigation. Oral presentation at *ACS Fall 2022 Meeting*. Chicago, IL. August 20-24, 2022.

Taskina Jui*, Sarah Simoneaux, William Holmes, Mark E. Zappi. Comparing growth of *Chlorella vulgaris* in NaHCO₃ and CaCO₃ solutions. REU undergraduate Taskina Jui (University of Florida) poster at the AIM-REU Research Symposium, University of Louisiana at Lafayette, July 29, 2022.

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Dizon LSH*, Bertrand RS, Holmes WE, Hernandez RA, Zappi ME, Fortela DLB, Revellame ED. Evaluation of the Effects of Methanotrophic Growth Conditions on Methane Biocatalysis for Lipid Production: An Initiative towards Climate Change Mitigation. *Engineering and Technology Week 2022 Graduate Presentation Competition*. University of Louisiana at Lafayette, Lafayette LA. April 4-8, 2022.

Aguda R*, Fonseca L, Ho Y, Holmes W, Hernandez R, Zappi M, Revellame E. Challenges and Potential Solutions in Microalgae Cultivation in a Space-based Biorefinery System. *2022 Engineering and Technology Week Graduate Poster Competition*. University of Louisiana at Lafayette, Lafayette, LA. April 4-8, 2022.

Bertrand RS*, Dizon LSH, McGovern C, Hernandez RA, Zappi ME, Revellame ED. Mass transfer in methanotrophic bioreactors: is there a diminishing-returns point for coefficient based on critical factors of operation? *Engineering and Technology Week 2022 Graduate Poster Competition*. University of Louisiana at Lafayette, Lafayette Louisiana, USA. April 4-8, 2022.

Dizon LSH*, Bertrand RS, Holmes WE, Hernandez RA, Zappi ME, Fortela DLB, Revellame ED. Evaluation of the Effects of Methanotrophic Growth Conditions on Methane Biocatalysis for Lipid Production: An Initiative towards Climate Change Mitigation. *Engineering and Technology Week 2022 Graduate Poster Competition*. University of Louisiana at Lafayette, Lafayette, LA. April 4-8, 2022.

Fonseca L*, Aguda R, Ho Y, Massiha S, Holmes W, Hernandez R, Zappi M, Revellame E. Photobioreactors in Series for Air Revitalization and Wastewater Treatment in a Space Station. *2022 Engineering and Technology Week Undergraduate Poster Competition*, April 4-8, 2022. University of Louisiana at Lafayette, Lafayette, LA. April 4-8, 2022. Awarded 1st place for the Engineering and Technology Week Undergraduate Research Poster Competition.

Lei X*, Holmes WE, Zappi ME, Daniel Gang (2022). Like a magnet - Adsorption of perfluorooctanoic acid (PFOA) onto polyethyleneimine modified graphene oxide (GO-PEI). *Graduate Appreciation Week 2022 Poster Competition*. University of Louisiana at Lafayette, Lafayette Louisiana, USA. March 30-31, 2022.

Dizon LSH*, Bertrand RS, Holmes WE, Hernandez RA, Zappi ME, Fortela DLB, Revellame ED. Assessing the Influence of Methanotrophic Growth Conditions on Methane Biocatalysis for Lipid Production: An Initiative towards Climate Change Mitigation. *Graduate Appreciation Week 2022 Poster Competition*. University of Louisiana at Lafayette, Lafayette, LA. March 30-31, 2022.

Lei X*, Holmes WE, Zappi ME, Daniel Gang. The role of amine and amide I functional groups in the adsorption of perfluorooctanoic acid (PFOA) onto polyethyleneimine modified graphene oxide. Presentation at the *7th Annual Regional Student Scholars Forum*. Louisiana State University Shreveport, Louisiana, USA. March 11, 2022.

Dizon LSH*, Bertrand RS, Holmes WE, Hernandez RA, Zappi ME, Fortela DLB, Revellame ED. Assessing the Influence of Methanotrophic Growth Conditions on Methane Biocatalysis for Lipid Production. Poster presentation at the *7th Annual Regional Student Scholars Forum*. Louisiana State University Shreveport, LA. March 11, 2022.

Andrew Schofield*, Alex Zappi, Sarah Simoneaux, William Holmes, Mark Zappi. *Chlorella vulgaris* growth from Sodium Bicarbonate produced via Carbon Dioxide adsorption using Sodium Hydroxide. Poster at the *AIM-REU Research Symposium*, University of Louisiana at Lafayette, LA, July 2021 and at the *2021 AIChE Annual Meeting*, Boston, MA. November 2021.

N Marcil*, M Zappi, DL Fortela, E Revellame, D Gang, W Sharp, W Holmes, R Hernandez. How Low Can It Go?: Survivability of Aerobic Activated Sludge Fed Dilute-Strength Wastes for Space Applications. Poster presentation at the *2021 AIChE Annual Meeting*. Boston, MA. November 7 – 11, 2021.

S Simoneaux*, D Schofield, W Holmes, E Revellame, R Hernandez, D Gang, ME Zappi. Cultivation of *Chlorella vulgaris* in a photobioreactor system for conversion of carbon dioxide into oxygen. Poster presentation at the *LaSPACE Fall 2021 Council Meeting*. Baton Rouge, LA. October 29 – 30, 2021.

A Chistoserdov, S Ahmed*, W Holmes, ED Revellame, M Zappi, R Hernandez. Utilization of human feces and urine with concomitant production of biogas in confined environments. Poster presentation at the *LaSPACE Fall 2021 Council Meeting*. Baton Rouge, LA. October 29 – 30, 2021.

R Aguda*, L Fonseca, S Massiha, Y Ho, S Simoneaux, W Holmes, A Chistoserdov, ED Revellame, R Hernandez, ME Zappi. Algae Cultivation in a Space-based Biorefinery System. Poster presentation at the *LaSPACE Fall 2021 Council Meeting*. Baton Rouge, LA. October 29 – 30, 2021.

S Massiha*, R Aguda, L Fonseca, W Holmes, ED Revellame, R Hernandez, ME Zappi. Lipid and Fatty Acid Analysis of Microalgal Biomass as a Potential Life Support Product for Space

Exploration. Poster presentation at the *LaSPACE Fall 2021 Council Meeting*. Baton Rouge, LA. October 29 – 30, 2021.

Xiaobo Lei*, Qiyu Lian, William Holmes, Daniel Gang, Mark E. Zappi. Enhanced adsorption of perfluorooctanoic acid (PFOA) onto low oxygen content ordered mesoporous carbon (OM): Adsorption behaviors and mechanisms. Poster presentation at the *LaSPACE Fall 2021 Council Meeting*. Baton Rouge, LA. October 29 – 30, 2021.

R Aguda*, W Holmes, R Hernandez, M Zappi, D Gang, A Chistoserdov, ED Revellame. Effect of Macronutrients Levels on the Growth of *Chlorella vulgaris*: Implications on Microalgal Cultivation for Long Duration Spaceflights and Planetary Colonization. Oral presentation at the *4th Space Travel: Adaptive Research and Technologies from Biological and Chemical Engineering (STAR Tech)*. Virtual. October 25 – 26, 2021.

Michael Gee*, Xiaobo Lei, William Holmes, Pubali Sarker, Mark Zappi, Daniel Gang. Enhanced Adsorption of Perfluorooctanoic Acid (PFOA) from Aqueous Solution by Oak Sawdust Derived Activated Carbon (OSAC). Poster presentation at the *Gulf Coast Undergraduate Research Symposium*. Rice University, TX. October 2021.

Michael Gee*, Xiaobo Lei, William Holmes, Pubali Sarker, Mark Zappi, Daniel Gang. Enhanced Adsorption of Perfluorooctanoic Acid (PFOA) from Aqueous Solution by Oak Sawdust Derived Activated Carbon (OSAC). Poster presentation at the *Australian Conference of Undergraduate Research*. Australia, Australian National University. September 2021.

Andrei Chistoserdov, Saleh Ahmed*, William Holmes, Emmanuel Revellame, Mark Zappi, Rafael Hernandez. Utilization of human feces and urine with concomitant production of biogas in confined environments. Poster presentation at the *Society for Industrial Microbiology and Biotechnology Meeting*. Austin, TX. August 2021.

Andrew Schofield, Alex Zappi, Sarah Simoneaux, William Holmes, Mark Zappi. *Chlorella vulgaris* growth from Sodium Bicarbonate produced via Carbon Dioxide adsorption using Sodium Hydroxide. REU Undergraduate Drew Schofield (University of Kentucky) poster presentation at the *AIM-REU Research Symposium*. University of Louisiana at Lafayette, Lafayette, LA. July 2021.

Michael Gee, Xiaobo Lei, William Holmes, Pubali Sarker, Mark Zappi, Daniel Gang. Enhanced Adsorption of Perfluorooctanoic Acid (PFOA) from Aqueous Solution by Oak Sawdust Derived Activated Carbon (OSAC). REU Undergraduate Michael Gee (University of California, Berkeley) poster presentation at the *AIM-REU Research Symposium*. University of Louisiana at Lafayette, Lafayette, LA. July 2021.

Eugenia Ndieze*, Bimi Shrestha, Mark E. Zappi, Rafael Hernandez, William Holmes, Dhan Lord B. Fortela, Wayne Sharp, Andrei Chistoserdov, Daniel Gang, Emmanuel Revellame. Anaerobic Digestion of Synthetic Wastewater Dedicated for a Biochemical Waste Conversion System for Outer Space Exploration. *Engineering and Technology Week 2021 Undergraduate Poster Competition*. University of Louisiana at Lafayette, Lafayette, LA. April 5-9, 2021.

S LeBoeuf*, R Aguda, W Holmes, R Hernandez, M Zappi, E Revellame. Cryopreservation of the microalgae *Chlorella vulgaris*, for space explorations. *Engineering and Technology Week 2021 Undergraduate Poster Competition*. University of Louisiana at Lafayette, Lafayette, LA. April 5-9, 2021.

R Boudreaux*, W Holmes, E Revellame. Reactive In-situ Fractionation of Lignocellulosic Biomass. *Engineering and Technology Week 2021 Undergraduate Poster Competition*. University of Louisiana at Lafayette, Lafayette, LA. April 5-9, 2021.

L Fonseca*, R Aguda, W Holmes, R Hernandez, M Zappi, E Revellame. Effect of Light Intensity on the Growth of *Chlorella vulgaris*. *Engineering and Technology Week 2021 Undergraduate Poster Competition*. University of Louisiana at Lafayette, Lafayette, LA. April 5-9, 2021.

Hayden Hulin, William Holmes. Applications in 3D Printing in Laboratory Research. *Engineering and Technology Week 2021 Undergraduate Poster Competition*. University of Louisiana at Lafayette, Lafayette, LA. April 5-9, 2021.

Drew LeBoeuf, Xiaobo Lei, William Holmes, Mark Zappi, Qiyu Lian, Xu Zhang, Daniel Gang. Enhanced adsorption of perfluorooctanoate (PFOA) on low oxygen content ordered mesoporous carbon (OMC): adsorption behaviors and mechanisms. *Engineering and Technology Week 2021 Undergraduate Poster Competition*. University of Louisiana at Lafayette, Lafayette, LA. April 5-9, 2021.

Eugenia Ndieze*, Bimi Shrestha, Mark E. Zappi, Rafael Hernandez, William Holmes, Dhan Lord B. Fortela, Wayne Sharp, Andrei Chistoserdov, Daniel Gang, Emmanuel Revellame. Anaerobic digestion of synthetic wastewater for a biochemical waste conversion system. Oral presentation at the *Association of Official Analytical Collaboration (AOAC) International Mid-Year Conference*. March 2021.

Remil Aguda*, Lucile Fonseca, Shahrzad Massiha, Y Ho, Sarah Simoneaux, William Holmes, Andrei Chistoserdov, Emmanuel Revellame, Rafael Hernandez, Mark E. Zappi. Algae Cultivation in a Space-based Biorefinery System. Oral presentation at the *2020 Virtual AIChE Annual Meeting* held virtually November 16-20, 2020.

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.

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. *2020 Engineering & Technology Week Graduate Poster Competition*, University of Louisiana at Lafayette. Lafayette, LA. March 16-20, 2020.

Nicholas Marcil*, Brandon Plaisance, Rafael Hernandez, Dhan Lord Fortela, William Holmes, Mark Zappi. Effect of Operating Condition on the Extent of Contaminant Removal with an Activated Sludge System. *2020 Engineering & Technology Week Graduate Poster Competition*, University of Louisiana at Lafayette. Lafayette, LA. March 16-20, 2020.

C Stelly*, R Aguda, W Holmes, R Hernandez, Mark Zappi, E Revellame. Comparison of 3 media formulations for optimal growth of *Chlorella vulgaris*. *2020 Engineering & Technology Week Undergraduate Poster Competition*, University of Louisiana at Lafayette. Lafayette, LA. March 16-20, 2020. [**Won 1st place in the Undergraduate Student category**]

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. *2020 Engineering & Technology Week Undergraduate Poster Competition*. University of Louisiana at Lafayette. Lafayette, LA. March 16-20, 2020.

R Aguda*, B LeBlanc, C Stelly, W Holmes, R Hernandez, M Zappi, E Revellame. Algae Species on Turf Filter Reactor for Space Explorations. Poster presentation at the *2019 AIChE Annual Meeting*. Orlando, FL. November 10 – 15, 2019.

R Aguda*, C Stelly, W Holmes, S LeBeouf, E Revellame. Cloud Point Temperature Purification of Butyric Acid from Aqueous Solutions Using Non-Ionic Surfactant. Oral presentation at the *2019 AIChE Annual Meeting*. Orlando, FL. November 10 – 15, 2019.

Elizabeth Boyd*, William Holmes, Mark Zappi. Comparison of Different Methodologies for Rapid Analysis of Volatile Organic Acids in Fermentation Broth using GC/MS. Poster presentation at the *2019 AIChE Annual Meeting*. Orlando, FL. November 10 – 15, 2019.

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. Poster presentation at the *LaSPACE Fall 2019 Council Meeting*. Baton Rouge, LA. October 18 – 19, 2019.

Brandon Plaisance*, Nicholas Marcil, Rafael Hernandez, Dhan Lord B. Fortela, William Holmes, Mark E. Zappi. Effect of Operating Conditions on the Extent of Contaminant Removal and Biomass Lipid Enhancement with an Activated Sludge System. Poster presentation at the *LaSPACE Fall 2019 Council Meeting*. Baton Rouge, LA. October 18 – 19, 2019.

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. Oral presentation at the *2019 IEEE Green Technologies Conference*. Lafayette, LA. April 3 – 6, 2019.

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. Oral presentation at the *2019 IEEE Green Technologies Conference*. Lafayette, LA. April 3 – 6, 2019.

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. Oral presentation at the *2019 IEEE Green Technologies Conference*. Lafayette, LA. April 3 – 6, 2019.

C Stelly*, S LeBeouf, R Aguda, W Holmes, E Revellame. Separation of Butyric Acid from a Non-ionic Surfactant Above its Cloud Point Temperature. *2019 Engineering & Technology Week Undergraduate Poster Competition*, University of Louisiana at Lafayette. Lafayette, LA. March 25-29, 2019.

J LeBlanc*, DL Fortela, W Sharp, S Bonilla, W Holmes, ED Revellame. Microbial Fuel Cells for Production of BioPower and BioProducts. *2019 Engineering & Technology Week Graduate Poster Competition*, University of Louisiana at Lafayette. Lafayette, LA. March 25-29, 2019.

Remil Aguda, Cody Stelly, Brandon LeBlanc, Emmanuel Revellame, William Holmes, Rafael Hernandez, Mark Zappi. Algae Species and Algae Reactors Design for Space Explorations. *2019 Engineering & Technology Week Graduate Poster Competition*, University of Louisiana at Lafayette. Lafayette, LA. March 25-29, 2019.

R Bertrand*, B Holmes, C Orgeron, E Revellame. Determination of the Excess Water Conditions for the Gelatinization of Waxy Corn Starch, *2018 Engineering & Technology Week Graduate Poster Competition*. University of Louisiana at Lafayette. Lafayette, LA. March 2018. **[Won 3rd place in the Graduate Student category]**

E Revellame*, R Hernandez, T French, W Holmes, M Zappi. Developing Co-Products from Tomorrow's Biorefinery: Municipal Wastewater Plants. Presentation at the *2017 Louisiana Energy Research and Development Forum*. University of Louisiana at Lafayette, Lafayette LA. October 24 – 26, 2017.

Emmanuel Revellame, William Holmes, Dhan Lord Fortela, Donald Blue*. Pretreatment of Solid Wastes from Vegetable Processing. Poster presentation at the *2017 AIChE Annual Meeting*, Minneapolis, MN. October 29-November 3, 2017.

William Gardner*, William Holmes. Development of a High-Resolution GC Separation for Identification and BTU Heating Value Calculations for Torrefaction VOC Emissions. Oral presentation at the *31st Annual Meeting of the Southern Section of AOAC International*. Atlanta, GA. April 17-20, 2017

Ben Boone*, Matthew Crawford, Maci Gauthreaux, William Holmes, Emmanuel Revellame, Andro Mondala. Renewable Fuels from Plastic Medical Wastes. Oral presentation at the *31st Annual Meeting of the Southern Section of AOAC International*. Atlanta, GA. April 17-20, 2017

Maci Gauthreaux*, William Holmes, Rafael Hernandez, Mark Zappi, Jay Turner, Tre Bertrand, Danny Cormier. Extraction of Amines in Petroleum Drilling Fluids by Rapid GC/MS Method. Poster presentation at the *31st Annual Meeting of the Southern Section of AOAC International*. Atlanta, GA. April 17-20, 2017

Hannah Hymel*, Robert Bertrand, William Holmes, Emmanuel Revellame. Novel Process to Enhance Essential Oils, as Natural Chemical Insect Repellents. Poster presentation at the *31st Annual Meeting of the Southern Section of AOAC International*. Atlanta, GA. April 17-20, 2017

Kyle Zappi*, Kyle Leleux, William Holmes, Dhan Lord Fortela, Emmanuel Revellame. Development of a Microbial Fuel Cell for Waste to Electricity Conversion. Poster presentation at the *31st Annual Meeting of the Southern Section of AOAC International*. Atlanta, GA. April 17-20, 2017 [**Won 1st place**]

David LaCour Jr.*, Emmanuel Revellame, Mark Zappi, William Holmes. Microbial Digestion of Waste Materials for Biogas Production. Poster presentation at the *31st Annual Meeting of the Southern Section of AOAC International*. Atlanta, GA. April 17-20, 2017

D Blue*, D LaCour, S LeBoeuf, W Holmes, E Revellame. Acid Pretreatment of Solid Wastes from Vegetable Processing: Effect of Temperature and Acid Concentration. *2017 Engineering & Technology Week Graduate Poster Competition*. University of Louisiana at Lafayette. Lafayette, LA. March 2017. [**Won 2nd place in the Graduate Student category**]

K Leleux*, K Zappi, D Fortela, M Zappi, W Holmes, ED Revellame. Development and Testing of a Microbial Fuel Cell Prototype. *2017 Engineering & Technology Week Graduate Poster Competition*. University of Louisiana at Lafayette. Lafayette, LA. March 2017. [**Won 1st place in the Undergraduate Student category**]

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. Poster presentation at the *Honors Program and Undergraduate Research Council Undergraduate Research Conference*, University of Louisiana at Lafayette. Lafayette, LA. November 18 – 19, 2016.

DF LaCour*, ME Zappi, W Holmes, ED Revellame. Microbial Digestion of Waste Materials for Biogas Production. Poster presentation at the *Honors Program and Undergraduate Research Council Undergraduate Research Conference*, University of Louisiana at Lafayette. Lafayette, LA. November 18 – 19, 2016.

Dhan Lord Fortela*, William Holmes. The Dynamics of Biodiesel Profile and Fungal Diversity of Activated Sludge during Lipid Accumulation on Acetic Acid. Oral presentation at the *2016 AIChE Annual Meeting, San Francisco, CA*. November 13-18, 2016.

Obakore Agbroko*, Keyvan Mollaeian, William E. Holmes, Tracy J Benson. In Situ Raman Analysis for the Production of Biofuel Using a Heterogeneous Layered Double Hydroxide Catalyst. *2016 AIChE Annual Meeting, San Francisco, CA*. November 13-18, 2016.

Dhan Lord Fortela*, William Holmes, Rafael Hernandez, Mark Zappi. The Case of Making Fuel Oil from Sanitary Sewage. Oral presentation at the *2016 AIChE Annual Meeting, San Francisco, CA*. November 13-18, 2016.

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? Poster presentation at the *2016 AIChE Annual Meeting*. San Francisco, CA. November 13 – 18, 2016.

Danial Gang, William Holmes*. BTEX Removal from Synthetic Wastewater Using Ordered Mesoporous Carbons (OMCs). *2016 AIChE Annual Meeting, San Francisco, CA*. November 13-18, 2016.

Danial Gang, William Holmes*. Removal of Metals Form Industrial Wastewater Using Pecan Shell Based Activated Carbon. *2016 AIChE Annual Meeting, San Francisco, CA*. November 13-18, 2016.

William Holmes, Dhan Lord Fortela, Emmanuel Revellame*. Surfactant-Aided Extraction of Volatile Organic Acids from Aqueous Solution. Poster presentation at the *2016 AIChE Annual Meeting, San Francisco, CA*. November 13-18, 2016.

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. *2016 Engineering & Technology Week Graduate Poster Competition*. University of Louisiana at Lafayette. Lafayette, LA. March 2016.

M. Crawford*, J Belgodere, ED Revellame, W Holmes, R Hernandez. Determination of Cloud Point Temperature of Nonionic Surfactant. *2016 Engineering & Technology Week Undergraduate Poster Competition*. University of Louisiana at Lafayette. Lafayette, LA. March 2016.

J Belgodere*, R Hernandez, W Holmes, M Zappi, R Bajpai, E Revellame. Liquid-liquid Extraction of Volatile Fatty Acids (VFAs) using Surfactants. Oral presentation at the *2015 AIChE Annual Meeting*. Salt Lake City, UT. November 8 – 13, 2015.

Ashley Mikolajczyk*, William Holmes. Evaluation of the Effect of Commercially Manufactured Feeds with Different Fat Compositions on Fatty Acid Composition of Captive Breeding Alligator Eggs. Poster presentation at the *29th Annual Meeting of the Southern Section of AOAC International*. Atlanta, GA. April 2015.

Alyssa Bienvenu* and William Holmes. A Proposed Rapid Analytical Method for Quantification of Volatile Organic Acids in Fermentation Broth. Poster presentation at the *29th Annual Meeting of the Southern Section of AOAC International*. Atlanta, GA. April 2015.

William Holmes*. Converting Waste to Value-Added Products. Oral presentation at the *29th Annual Meeting of the Southern Section of AOAC International*. Atlanta, GA. April 2015.

Troy Manuel*, Claire Maraist, Timothy Boudreaux, William Holmes, Prashanth Buchireddy. Char It! Black is the New Green, Using Mass Spectrometry to Analyze Compositions and BTU

Content of Off-Gas from Torrefaction Process. Poster presentation at the 29th Annual Meeting of the Southern Section of AOAC International. Atlanta, GA. April 2015.

Maci Gauthreaux*, Whitney Melancon, William Holmes, Troy Primeaux, Mark Zappi. Ask Me About My Pepper, Y'all! Analytical Determination of Scoville Heat Units Using High Pressure Liquid Chromatography. Poster presentation at the 29th Annual Meeting of the Southern Section of AOAC International. Atlanta, GA. April 2015.

J Belgodere*, L Collazos, ED Revellame, M Zappi, W Holmes, R Hernandez. Experimental Measurement and Modeling of Ternary Systems Containing Surfactant-Water-VFAs. 2015 Engineering & Technology Week Graduate Poster Competition. University of Louisiana at Lafayette. Lafayette, LA. March 2015. [**Won 3rd place in the Graduate Student category**]

Stanislav Barskov*, Stephen Dufreche, William Holmes, Rafael Hernandez, Rakesh Bajpai, Mark Zappi, Ramalingam Subramaniam. 388012 Biological Isolation of Protein from Shrimp Waste. 2014 AIChE Annual Meeting, Atlanta, GA. November 16-21, 2014.

Dhan Ford Fortela*, Rafael Hernandez, Mark Zappi, William Holmes, Emmanuel Revellame, Stephen Dufreche, Ramalingam Subramaniam, Todd French. Refining the Concept of Integrating Anaerobic-Aerobic Microbial Systems to Produce Chemicals and Lipids for Fuels. Oral presentation at the 2014 AIChE Annual Meeting, Atlanta, GA. November 16-21, 2014.

Christopher Giogio*, Stephen Dufreche, William Holmes, Rafael Hernandez, Mark Zappi, Rakesh Bajpai, Ramalingam Subramaniam. Effect of C/N Ratio on Microbial Lipid Production with the Oleaginous Yeast *Lipomyces Starkeyi*. 2014 AIChE Annual Meeting, Atlanta, GA. November 16-21, 2014.

Emmanuel Revellame*, Dhan Lord Fortela, William Holmes, Rafael Hernandez. Fuels and Chemicals from Wastes through Anaerobic Digestion. Poster presentation at the 2014 AIChE Annual Meeting, Atlanta, GA. November 16-21, 2014.

Ashley Mikolajczyk*, Hannah Hymel, William Holmes, Ted Joanen, Errol Falgout, Mark Staton, Mark Zappi. Engineering Alligator Diets to Increase Reproductive Performance of Alligator Eggs from a Captive Population. 2014 AIChE Annual Meeting, Atlanta, GA. November 16-21, 2014.

Dhan Ford Fortela*, Rafael Hernandez, Mark Zappi, William Holmes, Emmanuel Revellame, Stephen Dufreche, Ramalingam Subramaniam, Todd 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. Poster presentation at the 2014 AIChE Annual Meeting, Atlanta, GA. November 16-21, 2014.

M. Rahman*, Stephen Dufreche, William Holmes, Rakesh Bajpai, Rafael Hernandez. Cost Effective Lipid Production By *Lipomyces Starkeyi* Using Different Carbon Sources. 2014 AIChE Annual Meeting, Atlanta, GA. November 16-21, 2014.

Alyssa Bienvenu*, William Holmes, Emmanuel Revellame, Dhan Ford Fortela, Andro Mondala, Rafael Hernandez, Mark Zappi. A Rapid Analytical Method for Quantification of Volatile Organic Acids in Fermentation Broth. Poster presentation at the *2014 AIChE Annual Meeting, Atlanta, GA*. November 16-21, 2014.

Ashley Mikolajczyk*, Mark Zappi, William Holmes, Rafael Hernandez. An Evaluation of Processes for the Capture of Lipids for Later Use As Feedstocks for Fuels and Other Chemicals Production. *2014 AIChE Annual Meeting, Atlanta, GA*. November 16-21, 2014.

William Holmes*, Mark Zappi, Rafael Hernandez, Prashanth Buchireddy, Terry Chambers, and Emmanuel Revellame. An introduction to energy research at The University of Louisiana's Cleco Alternative Energy Center. Oral presentation at the *AOAC Annual Meeting, Atlanta, GA* April 2014.

ED Revellame*, WE Holmes, R. Hernandez, WT French, LA Estévez. Experimental Measurement and Modeling of Type 3 Ternary System Containing *n*-Decane + Water + Triaceti. Oral presentation at the *2013 AIChE Annual Meeting*. San Francisco, CA. November 3 – 8, 2013.

Marta Amir Sadeghi*, Todd French, Rafael Hernandez, William Holmes. Evaluation of the Effect of Different Carbon Sources On Lipid Production By *Rhodotorula glutinis* From Pulp and Paper Wastewater As Fermentation Media. Poster presentation at the *2013 AIChE Annual Meeting*. San Francisco, CA. November 3 – 8, 2013.

Dhan Lord Fortela*, Rafael Hernandez, Todd French, Andro Mondala, William Holmes, Emmanuel Revellame, Efreem Egede. Integration of Anaerobic Digestion of Cellulose Into Lipid Accumulation By a Mixed Microbial Consortium. Oral presentation at the *2013 AIChE Annual Meeting*. San Francisco, CA. November 3 – 8, 2013.

Adebola Coker*, Rafael Hernandez, Emmanuel Revellame, William Holmes, Todd French. Update to Biodiesel Production From Activated Sludge and Economic Analysis. Oral presentation at the *2013 AIChE Annual Meeting*. San Francisco, CA. November 3 – 8, 2013.

Emmanuel Revellame, William Holmes*, Rafael Hernandez, Todd French. Fluid-Bed Catalysis of Lipid-Enhanced Activated Sludge and Its Integration With Wastewater Treatment Facilities. Poster presentation at the *2013 AIChE Annual Meeting*. San Francisco, CA. November 3 – 8, 2013.

William Holmes*, Emmanuel Revellame, Rafael Hernandez, Prashanth Buchireddy. Recovery of Phenolic Compounds From Pyrolysis Wastewater By Adsorption to Kenaf: Comparison of Different Kenaf Pre-Treatments. Poster presentation at the *2013 AIChE Annual Meeting*. San Francisco, CA. November 3 – 8, 2013.

R Hernandez*, T French, A Mondala, DL Fortela, E Revellame, W Holmes. Integrating Biofuel Production to Wastewater Generation and Treatment. Oral presentation at the *2013 Inaugural Southeastern Conference Symposium*. Atlanta, GA. February 10 – 12, 2013.

Mark White, A. T. Coker*, Rafael Hernandez, Emmanuel Revellame, Todd French, Alexei Iretskii, William Holmes. Comparison of 1- and 2- Step Biodiesel Production From Activated Sludge Using Supercritical Methanol and Economic Analysis. Oral presentation at the *2012 AIChE Annual Meeting*. Pittsburgh, PA. October 28 - November 2, 2012.

Andro Mondala*, Rafael Hernandez, Todd French, William Holmes, Magan Green, Linda McFarland, Larry Pearson, Jesse Simmons, Robert Glenn, Brady Biggers. Evaluation of a Pilot-Scale Facility for Biocrude Production by Activated Sludge Cultures Via Lignocelullose Sugar Fermentation and Downstream Recovery Processes. Oral presentation at the *2012 AIChE Annual Meeting*. Pittsburgh, PA. October 28 - November 2, 2012.

Emmanuel Revellame*, William Holmes, Rafael Hernandez, L. Antonio Estevez, Todd French. Application of High Voltage for the Destabilization of Water-in-Oil Emulsion for the Extraction of Lipids From Microorganisms without Removal of Water. Oral presentation at the *2012 AIChE Annual Meeting*. Pittsburgh, PA. October 28 - November 2, 2012.

Emmanuel Revellame*, William Holmes, Rafael Hernandez, Todd French. Production of Renewable Fuel From Enhanced Activated Sludge Through a Fluidized-Bed Catalytic Cracking (FCC) Process. Oral presentation at the *2012 AIChE Annual Meeting*. Pittsburgh, PA. October 28 - November 2, 2012.

Mondala, A.*, Hernandez, R., French, W., Green, M., McFarland, L., Holmes, W., Ramakrishnan, G. Volatile Fatty Acids As a Sole Carbon Source for Biocrude Production by Enhanced Activated Sludge Cultures Oral presentation at the *2012 AIChE Annual Meeting*. Pittsburgh, PA. October 28 - November 2, 2012.

R Hernandez*, T French, A Mondala, P Pham, E Revellame, W Holmes. Alternative processes for the bioconversion of waste into fuels and chemicals. Oral presentation at the *244th ACS National Meeting & Exposition*. Philadelphia, PA. August 19 – 23, 2012.

T Ashe*, E Revellame, W Holmes, R Hernandez, WT French, LA Estévez. Liquid-Liquid-Liquid Equilibria for the Ternary System Triacetin + Water + Decane. Poster presentation at the *2012 Southeast Biofuels and Renewable Energy Conference*. Jackson, MS. August 8 – 9, 2012.

Zhang, G.*, French, W.T., Hernandez, R., Holmes, W. Batch and Continuous Production of Microbial Oils as Biodiesel Feedstock from Hydrolyzate of Switchgrass. Oral presentation at the *2012 AOCS Annual meeting*. Long Beach, CA. April 19 – May 2, 2012.

Revellame*, E., Holmes, W., Lerma, L., Hernandez, R., Estevez, L. A., French, W.T. High Voltage Electrostatic Destabilization of Water-oil Emulsion for the Extraction of Lipids in Wastewater Bacteria for Biofuel Production. Oral presentation at the *2012 AOCS Annual meeting*. Long Beach, CA. April 19 – May 2, 2012.

Mondala, A.*, Hernandez, R., French, W.T., Holmes, W. Effect of Aerobic and Anoxic Conditions on Biocrude Production by Activated Sludge via Sugar Fermentation. Oral presentation at the *2012 AOCS Annual meeting. Long Beach, CA.* April 19 – May 2, 2012.

Holmes, W.*, Revellame, E., Lerma, L., Estevez, L. A., Hernandez, R., French, W.T. Development of a Laboratory Scale Electrostatic Coalescer Unit for Separation of Water-oil Emulsions for Biofuel Production. Poster presentation at the *2012 AOCS Annual meeting. Long Beach, CA.* April 19 – May 2, 2012.

Diamond, C.*, O'Neal, B., Simmons, J., Hartley, L., Holmes, W. E., Hernandez, R., French, W. T., Mondala, A. H., Holmes, A. E. Downstream: Pilot Scale Biocrude Optimization Study. Oral presentation at the *2012 AOCS Annual meeting. Long Beach, CA.* April 19 – May 2, 2012.

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