WILLIAM JOSEPH SAGUES

George J. and Rhoda W. Kriz Distinguished Scholar | Associate Professor
Biological & Agricultural Engineering | North Carolina State University

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Curriculum Vitae — Updated October 2026

EDUCATION

1. PhD, Forest Biomaterials — North Carolina State University (January 2018 – August 2020)
2. MSc, Chemical Engineering — University of Florida (August 2015 – December 2017)
3. MSc, Agricultural & Biological Engineering — University of Florida (August 2015 – December 2017)
4. BSc, Agricultural & Biological Engineering — University of Florida (August 2009 – May 2012)

PROFESSIONAL APPOINTMENTS & LEADERSHIP

1. George J. and Rhoda W. Kriz Distinguished Scholar & Associate Professor, Biological & Agricultural Engineering, North Carolina State University; Principal Investigator, Biocarbon Utilization & Sequestration (BUS) Laboratory (2026 – present)
2. Assistant Professor, Biological & Agricultural Engineering, North Carolina State University; Principal Investigator, BUS Laboratory (2020 – 2026)
3. Vice Chair, Circular Bioeconomy Systems Institute (CBSI), American Society of Agricultural & Biological Engineers (ASABE) (2025 – present)
4. Founder & Chair, Bioprocess Startup Student Competition, American Society of Agricultural & Biological Engineers (ASABE) (2022 – present)
5. Co-Founder, Flip Biosystems, Inc. (2023 – 2024)
6. Graduate Student Research (SCGSR) Fellow, Office of Science, U.S. Department of Energy; Host Site: National Renewable Energy Laboratory (2020 – 2020)
7. Graduate Research Assistant, Department of Forest Biomaterials, North Carolina State University (2018 – 2020)
8. Summer Scholar, Green Chemistry Summer School, American Chemical Society (2019)
9. Technology-to-Market Scholar, Advanced Research Projects Agency–Energy (ARPA-E), U.S. Department of Energy (2018 – 2018)
10. Graduate Research Assistant, Departments of Agricultural & Biological Engineering and Chemical Engineering, University of Florida (2015 – 2017)
11. Senior Bioprocess Engineer, Stan Mayfield Biorefinery, Florida Center for Renewable Chemicals & Fuels, University of Florida, in partnership with Georgia-Pacific (2014 – 2015)
12. Bioprocess Engineer, Stan Mayfield Biorefinery, Florida Center for Renewable Chemicals & Fuels, University of Florida, in partnership with Georgia-Pacific (2012 – 2014)

GRANTS FUNDED — RESEARCH, DEVELOPMENT, & DEMONSTRATION

*January 2021 – present | Total funded portfolio: $30,524,991 | * indicates interinstitutional grant*

Lead Principal Investigator (Total: $4,085,678)

1. DRAGON: Domestic and Renewable Agricultural Graphite and Steel Production, U.S. Department of Agriculture (USDA) National Institute of Food and Agriculture (NIFA), Agriculture and Food Research Initiative (AFRI), 2026 – 2029, $1,000,000. PI: **W. J. Sagues**. Co-PIs: Sunkyu Park, Veronica Augustyn, Fanxing Li, and Afsaneh Rabiei. Award No. 2026-68016-46965.
2. BioRock: Durable Carbon Removal Through Engineered Biomass Storage with Infrastructure Co-Benefits, Milkywire and WRLD Foundation, 2026 – 2028, $141,024. PI: **W. J. Sagues**. Co-PIs: Alex Woodley, Richard Venditti, and Moe Pourghaz.

3. Production of Battery Anodes from Biographite Sourced from Waste Peanut Shell Material, USDA Agricultural Research Service (ARS), 2026 – 2027, $61,204. PI: **W. J. Sagues**.
4. Assessing Impacts of System Boundaries on Biomass Carbon Removal & Storage, Clean Air Task Force (CATF), 2026 – 2027, $125,000. PI: **W. J. Sagues**.
5. Securing Domestic Battery Materials from Biomass (SEDBIO), NC Department of Agricultural & Consumer Services, 2026 – 2027, $87,000. PI: **W. J. Sagues**, Co-PI: S. Park
6. Valorizing Cotton Waste Materials, Cotton Inc, 2026, $84,918. PI: **W. J. Sagues**. Co-PIs: R. Venditti and A. Woodley
7. Bioprocessing Research Support, Burnham, 2026-2028, $100,000. PI: **W. J. Sagues**
8. Innovating Synergistic Bioproducts from Leather Waste for Energy Storage & Energy Utilization, Tapestry (industry project), 2025 – 2027, $170,000. PI: **W. J. Sagues**, Co-PI: Sunkyu Park
9. Scaling Up Cotton Textile Waste Composting with CO2 Utilization, US Department of Agriculture (USDA) National Institute of Food and Agriculture (NIFA), 2025 – 2027, $300,000. PI: **W. J. Sagues**, Co-PIs: Richard Venditti & Alex Woodley
10. *A National Assessment of Carbon Removal via the US Cotton Industry, Cotton Inc., 2025, $125,000. PI: **W. J. Sagues** Co-PI: Matthew Langholtz, ORNL
11. A Feasibility Study of Atmospheric Carbon Removal via Burial of Cotton Waste Biomaterials, Cotton Inc., 2024 – 2025, $100,000. PI: **W. J. Sagues**, Co-PI: Richard Venditti
12. Anaerobic Digestion of Industrial Organic Residues, Burnham RNG, 2023-2025, $76,810. PI: **W. J. Sagues**
13. Bioprocessing Research Support, Burnham, 2024, $100,000. PI: **W. J. Sagues**
14. Conversion of Cotton Textile Waste to Biochar and Compost, Cotton Incorporated, 2023, $75,000. PI: **W. J. Sagues**
15. KIETS Climate Leaders Program, Kenan Institute of Engineering, Technology, & Science, 2023 and 2024, $10,000 PI: **W. J. Sagues**
16. Goodnight Early Career Innovator Funds. 2022 – 2025. $22,000 per year for research ($66,000 total). PI: **W. J. Sagues**
17. Carbon Mineralization via Rock Quarry Fines, Carolina SunRock, 2022, $25,004. PI: **W. J. Sagues**, Co-PI: A. Woodley
18. Electrifying Bioproducts via C1 Fermentation, USDA, 2022-2023, Hatch Multi-State Grant, $5,000. PI: **W. J. Sagues**
19. Electrifying Animal Feed: Leveraging Microbial Communities in Formicine Ants to Produce Single Cell Protein via Assimilation of CO2-Derived Formic Acid, Research Innovation Seed Funding, North Carolina State University, 2022-2023, $25,000. PI: **W. J. Sagues**, Co-PIs: Elsa Youngsteadt, Amy Grunden, Sung Woo Kim, Kelly Zering, & Doug Call
20. Electrifying Animal & Fish Feed: Leveraging Microbes in Food Waste Anaerobic Digesters to Produce Single Cell Protein via Assimilation of CO2-Derived Formic Acid, NC Biotechnology Center, 2022-2023, $12,477. PI: **W. J. Sagues**, Co-PIs: Jay Cheng & Sung Woo Kim
21. Bioprocess Development for Pulp Liquor Fermentation, Rayonier Advanced Materials, 2022-2024, $23,187. PI: **W. J. Sagues**, Co-PIs: Hasan Jameel & Praveen Kolar
22. Butanol & Nanocellulose from CRISPR-Edited Poplar, NC Department of Agricultural & Consumer Services, 2021 – 2023, $100,000. PI: **W. J. Sagues**, Co-PIs: Wayne Yuan, Jack Wang, & Nathalie Lavoine
23. *Integrating Carbon Capture, Utilization, & Sequestration into Chemical Pulp Mills, US Department of Energy's Advanced Manufacturing Office, Award Number: DE-EE0009413, 2021 – 2024, $1,273,054. PI: **W. J. Sagues**, Co-PIs: Fanxing Li, Rachel Cook, Sunkyu Park, & Hasan Jameel

Co-Principal Investigator (Total: $26,439,313; Sagues segment total: $1,864,556)

1. Resource Engineering Framework for Responsible, Augmented Modeling and Engagement (REFRAME), $6,000,000. Schmidt Sciences, 2026 – 2029. PI: Daniela Jones. Co-PIs: **W. J. Sagues**, C. Williams, D. Sihi., M. Sharara, J. Guest, D. Hartley
2. Anaerobic Digestion Innovation via High Throughput Biomethane Potentials, $99,998, Burnham RNG 2026 – 2028. PI: Jay Cheng. Co-PI: **W. J. Sagues**.
3. Designing a Capstone Practicum to Educate the Next Generation of Food Animal Agricultural Professionals, $50,000. NCSU, 2025 – 2027. PI: Joseph Donaldson. Co-PIs: **W. J. Sagues**, J. B. Ferreira, L. Joseph, S. Kelly, L. Li, J. Morgan, C. Nobles, C. Pickworth, S. Rahman, M. Castillo, J. Cheng, D. Duncan
4. Enhanced Weathering for Carbon Sequestration in High Disturbance Organic Systems: An Evaluation on Climate Change Potential, Soil Fertility, and Agronomic Implications. USDA, 2024 – 2029, $999,979. PI: Alex Woodley, Co-PIs: **W. J. Sagues**, Luciano Gatiboni, David Suchoff, and Binwanath Dari.
5. Sustainable Ethylene via Chemical Looping – Oxidative Dehydrogenation, US DOE, 2024 – 2026, $249,998. PI: F. Li. Co-PI: **W. J. Sagues**
6. Advanced Separation and Processing Technologies for Enhanced Product Recovery and Improved Water Utilization, Cost Reduction, and Environmental Impact of an Integrated Lithium-Ion Battery Recycling System , US DOE, 2023 – 2027. $606,156. PI: Ryan Melsert, American Battery Technology Company. Co-PIs: **W. J. Sagues**, Sunkyu Park.
7. *Sargassum and Wood Waste for Aviation Fuel and Graphite (SWAG), US DOE, 2022 – 2026, $2,250,000. PI: Sunkyu Park, Co-PIs: **W. J. Sagues**, Richard Venditti, Stephen Kelley, Margaret Blanchard.
8. *Biocatalyst Interactions with Gases (BIG) Collaboration, Novo Nordisk Foundation, 2022 – 2027, $7,000,000. PI: Sonja Salmon, Co-PIs: **W. J. Sagues**, Amy Grunden, Doug Call, Igor Bolotnov, Nathan Crook, Fanxing Li, Flora Meilleur, & Yaroslava Yingling
9. New Methods for Methane Pyrolysis, Eastman Chemical Company, 2022 – 2024, $556,536. PI: Fanxing Li, Co-PIs: **W. J. Sagues**, Jian Dou, & Wenpei Gao
10. A Feasibility Assessment of Waste Cotton to Bioenergy with Carbon Removal, Cotton Incorporated, 2022 – 2024, $52,000. PI: Richard Venditti. Co-PI: **W. J. Sagues**
11. Equipment Grant, NCSU College of Agriculture and Life Science, 2022, $80,000, PI: Jay Cheng. Co-PI: **W. J. Sagues**, Shuijin Hu, Francois Birgand, Lingjuan Wang-Li, Praveen Kolar, and Wenqiao Yuan
12. *Roads to Removal – Options for Negative Emissions in the United States, US Department of Energy, 2021 – 2024, $4,400,000. PI: Roger Aines (Lawrence Livermore National Laboratory), Co-PIs: **W. J. Sagues**, Jennifer Pett-Ridge, Sarah Baker, Eric Slessarev, Simon Peng, Corinne Scown, Hanna Brunig, Matt Langholtz, Dan Sanchez, Mark Ashton, Mark Ducey, Mark Bradford, Phil Robertson, Keith Paustian, Dermot Hayes, Jerome Dumortier, Mark Wright, Helen Pilorge, & Susan Hovorka
13. Enzyme Enhanced Anaerobic Digestion of Source Separated Organics and Municipal Solid Waste, Novozymes, 2021 – 2022, $94,708. PI: Jay Cheng, Co-PIs: **W. J. Sagues** & Praveen Kolar.
14. *Scaling Up Biocrude Derived Anode Material (BDAM), US Department of Energy's Bioenergy Technology Office, DE-FOA-0002203 SCUBA, Control Number: 2203-1679, 2021 – 2025, $3,999,938. PI: Sunkyu Park, Co-PIs: **W. J. Sagues**, Mark Nimlos (NREL), Steve Kelley, Hasan Jameel, Sang-Don Han (NREL), Yuan Yao (Yale)

PEER-REVIEWED PUBLICATIONS

** Graduate student advised as chair/primary advisor; ** postdoctoral researcher advised; *** undergraduate researcher advised.*

Under Peer Review

1. E. Carrejo*, S. Reza**, J. Shen, J. Cunniffe*, S. Salmon, **W. J. Sagues**. 2026. "Techno-economic analysis of industrial-scale CO_2 capture via MDEA with free and immobilized carbonic anhydrase" Bioresource Technology
2. E. Carrejo*, R. Wu**, S. C. Dey, F. Li, S. Park, **W. J. Sagues**. 2026. "Decarbonizing lime kilns at pulp mills via oxy-fuel combustion" RSC Sustainability (IF: 9.2)
3. S. Reza**, A. Ferris, N. T. Garland**, S. Razavi, F. Li, R. Venditti, V. Augustyn, J. Daystar, & **W. J. Sagues**. 2026. "Upcycling Cotton-Polyester Textile Waste into High Quality Biochar and Activated Carbon for Energy Storage Applications." Energy Technology (IF: 3.6) *Accepted, in production*
4. Y. J. Qiu**, Z. Y. Zhou, S.S. Zuo, **W. J. Sagues**, X. Y. Gu, K. Mainali, C. E. Li, X. J. Li, S. L. Chen, and Y.Q. Yao. 2026. "Hyperthermophilic anaerobic digestion: A comprehensive review on theories, applications, challenges, and strategies" Chemical Engineering Journal (IF: 13.2)

Published

1. J. Cunniffe*, Y. Qiu**, C. Lum***, J. Cheng, **W. J. Sagues**. 2026. "Techno-Economic Assessment of Atmospheric Carbon Removal via Anaerobic Digestion of Biomass Waste" Fuel (IF: 7.5) https://www.sciencedirect.com/science/article/pii/S0016236126030498
2. M. N. Islam, S. C. Dey, M. Liu, J. S. Forrester, R. K. Bhardwaj, B. J. Tremolet de Villers, **W. J. Sagues**, & S. Park. 2026. "Exploring Iron-Catalyzed Biphasic Thermal Graphitization via High-Temperature In Situ XRD to Investigate Biographite Structural Evolution for Sustainable Battery Anodes" Energy & Fuels, 40(28), 15518–15530 https://doi.org/10.1021/acs.energyfuels.6c00907
3. E. Woods*, A. Trlica, P. Berlin***, S. Bloszies, A. Woodley, R. Cook, and **W. J. Sagues**. 2026. "Alkaline Mineral Residues from Pulp Mills as a Sustainable and Economical Alternative to Lime Fertilizers" RSC Sustainability (IF: 9.2) https://doi.org/10.1039/D5SU00814J
4. M. Langholtz, C. Levy, J. Field, D. L. Sanchez, P. Christensen, L. Murdoch, D.T. Ugarte, R. Jacobson, N. Zeng, E. A. Heaton, C. Forsberg, **W. J. Sagues**. 2026. "Biomass carbon removal can help sustainable aviation fuels achieve on-time arrival" iScience (IF: 4.1) https://doi.org/10.1016/j.isci.2026.115956
5. S. C. Dey, S. M. Cho, J. A. Gonzalez-Aguirre, M. N. Islam, R. K. Bhardwaj, B. J. Tremolet de Villers, B. J. Worfolk, **W. J. Sagues**, S. M. Rowland, M. R. Nimlos, & S. Park. 2026. "From Pyrolysis Oil to Advanced Biographite Anode: Unravelling Biocoke Structural Evolution and Delayed Coking Effects" Advanced Energy & Sustainability Research (IF: 5.7) https://doi.org/10.1002/aesr.70168
6. N. Clauser**, **W. J. Sagues**, M. C. Area, M. E. Vallejos. 2026. "Multiple feedstocks and decentralized biorefineries as a strategy for a sustainable development approach: A case study" Next Sustainability https://doi.org/10.1016/j.nxsust.2026.100293
7. J. Bayramova, S. Pires, P. Holden, **W. J. Sagues**, R. Venditti, and J. Daystar. 2026. "Environmental Impact of Open Burning of Polyester and Cotton Textile Waste: A Comparative Analysis" Environmental Science and Pollution Research (IF: 4.3) https://doi.org/10.1007/s11356-026-37563-9
8. E. Carrejo*, R. Ortega, K. Lan, D. L. Sanchez, S. Park, and **W. J. Sagues**. 2026. "Quantifying atmospheric carbon removal at pulp and paper mills: a life cycle assessment across system boundaries." Carbon Neutrality (IF: 12.5), 3, 5 https://doi.org/10.1007/s43979-025-00156-5
9. J Cunniffe*, N Lavoine, J Wang, VR Berrio*, **WJ Sagues**. 2026. "Co-Production of Crystalline Cellulose and Biofuel from Low-Lignin Biomass." Bioenergy Research (IF: 3.3), 19, 23 https://doi.org/10.1007/s12155-025-10947-4
10. E. Woods*, P. Berlin***, J. Daystar, & **W. J. Sagues**. 2025. "Gaseous carbon dioxide removal from composting of biomass and cotton textile waste". Waste Management (IF: 7.1), 207, 115108 https://doi.org/10.1016/j.wasman.2025.115108

11. J. Cunniffe*, V. R. Berrio*, C. R. Hunter, T. Nguyen, S. Salmon, N. Crook, A. Grunden, and **W. J. Sagues**. 2025. “Techno-Economic Analysis of Industrial-Scale Fermentation for Formate Dehydrogenase (FDH) Production” Bioresources and Bioprocessing (IF: 5.5), 12, 145 https://doi.org/10.1186/s40643-025-00985-3
12. J. Gonzalez-Aguirre, S. C. Dey, **W. J. Sagues**, Z. Combs, S. Rowland, A. Dutta, & S. Park. 2025. “Process Design and Techno-Economic Analysis for the Production of Bio-based Graphite and Liquid Hydrocarbons from Lignocellulosic Biomass” Bioresource Technology (IF: 9.0), 438, 133156 https://doi.org/10.1016/j.biortech.2025.133156
13. E. Woods*, N. Clauser**, J. Daystar, and **W. J. Sagues**. 2025. “Techno-economic assessment of atmospheric carbon removal via industrial composting of biomass waste with CO2 capture” ACS Omega (IF: 4.0), 10, 22, 22549–22561 https://doi.org/10.1021/acsomega.4c10158
14. J. Morizet-Davis, Y. Qiu**, J. Daystar, **W. J. Sagues**, R. A. Venditti. 2025. “Environmental Life Cycle Assessment and Techno-Economic Assessment of Textile Waste Valorization via Modular Bioenergy with Carbon Capture, Utilization, and Storage” Bioenergy Research (IF: 3.0) https://doi.org/10.1007/s12155-025-10909-w
15. N. Clauser**, C. Scown, J. Pett-Ridge, & **W. J. Sagues**. 2025. “A techno-economic assessment of carbon dioxide removal pathways via biochemical conversion of lignocellulose to biofuels and bioplastics” Renewable and Sustainable Energy Reviews (IF: 16.3), 216, 115714 https://doi.org/10.1016/j.rser.2025.115714
16. L. Lower*, S. Rowland, M. Regula, Z. A. Combs, S. Park, T. Vries, T. Vries, M. Nimlos, and **W. J. Sagues**. 2025. “Sustainable Graphite and Jet Fuel from Biorefinery Residue” ChemSusChem (IF: 7.5) https://doi.org/10.1002/cssc.202402509
17. Y. Qiu**, L. Lower*, V. R. Berrio*, J. Cunniffe*, P. Kolar, J.Cheng & **W. J. Sagues**. 2025. “The impacts of municipal and industrial organic waste components on the kinetics and potentials of biomethane production via anaerobic digestion” Waste and Biomass Valorization (IF: 2.6) https://doi.org/10.1007/s12649-025-02951-8
18. S. C. Dey, B Worfolk, **W. J. Sagues**, R. K. Bhardwaj, B. Tremolet de Villers, S. Rowland, M. R. Nimlos, S. Park. 2025 “Low Temperature Processing of Bio-oil for Sustainable Biographite Production” Energy & Fuels (IF: 5.2) https://doi.org/10.1021/acs.energyfuels.5c01132
19. L. Lower*, Y. Qui**, R. C. Sartor, **W. J. Sagues**, J. Cheng. 2025. “Kinetic Modeling of Thermophilic Anaerobic Digestion of Lemnaceae for Biogas Production” Bioenergy Research (IF: 3.1) https://doi.org/10.1007/s12155-025-10824-0
20. E. Carrejo*, H. Jameel, S. Park, & **W. J. Sagues**. 2025. “Biogenic Carbon Capture at Pulp Mills via Sodium Spiking” International Journal of Greenhouse Gas Control (IF: 4.6), 145, 104409 https://doi.org/10.1016/j.ijggc.2025.104409
21. S. C. Dey, L. Lower*, T. Vook*, M. N. Islam, **W. J. Sagues**, S. D. Han, M. Nimlos, S. S. Kelley, and S. Park. 2024. “Catalytic graphitization of pyrolysis oil for anode application in lithium-ion batteries”. Green Chemistry (IF: 9.2), 26, 15, 8840-8853 https://doi.org/10.1039/D4GC01647E
22. R. Wu**, E. Carrejo*, M. S. Reza**, E. Woods*, S. Razavi, S. Park, F. Li, **W. J. Sagues**. 2024. “Kinetic Assessment of Pulp Mill-Derived Lime Mud Calcination in High CO2 Atmosphere” Fuel (IF: 7.5), 373, 132372 https://doi.org/10.1016/j.fuel.2024.132372
23. N. Rafsan, S. B. Haque, S. Shah, **W. J. Sagues**, R. Ding, J. Ferraris, P. Kolar. 2024. “Poultry litter-derived biochar for supercapacitor applications” Next Energy, 5, 10017 https://doi.org/10.1016/j.nxener.2024.100171
24. S. T. Pires, A. Williams, J. Daystar, **W. J. Sagues**, K. Lan, and R. Venditti. 2024. “Evaluating cotton apparel with dynamic life cycle assessment: the climate benefits of temporary carbon storage”. Bioresources (IF: 1.75) | DOI: 10.15376/biores.19.3.5074-5095
25. S. C. Dey, B. Worfolk, L. Lower*, **W. J. Sagues**, M. Nimlos, S. S. Kelley, and S. Park. 2024. “Phenolic resin derived hard carbon anode for sodium-ion batteries: A review”. ACS Energy Letters (IF: 19.5), 9, 2590 – 2614 https://doi.org/10.1021/acsenergylett.4c00688

26. E. Woods*, V. R. Berrio*, P. Berlin***, Y. Qiu**, N. Clauser**, and **W. J. Sagues**. 2024. “Biomass Composting with Gaseous Carbon Dioxide Capture” RSC Sustainability (IF: 4.9) https://doi.org/10.1039/d3su00411b
27. T. Vook*, S. C. Dey, J. Yang, M. Nimlos, S. Park, S. D. Han, and **W. J. Sagues**. 2023. “Sustainable Li-ion anode material from Fe-catalyzed graphitization of paper waste” Journal of Energy Storage (IF: 9.4), 73, 109242 https://doi.org/10.1016/j.est.2023.109242
28. L. Lower*, S. C. Dey, T. Vook*, M. Nimlos, S. Park, and **W. J. Sagues**. 2023. “Catalytic graphitization of biocarbon for Li-ion anodes: A mini-review” ChemSusChem (IF: 7.5), e202300729 https://doi.org/10.1002/cssc.202300729
29. J. P. Dees, **W. J. Sagues**, E. Woods*, H. M. Goldstein, A.J. Simon, & D. L. Sanchez. 2023. “Leveraging the Bioeconomy for Carbon Drawdown” Green Chemistry (IF: 9.2), 25, 2930-2957 https://doi.org/10.1039/D2GC02483G
30. W. Peng, H. Bao, Y. Wang, E. Cote, **W. J. Sagues**, H. H. Weaver, J. Gao, D. Xiao, and Z. Tong. 2023. “Selective Depolymerization of Lignin Towards Isolated Phenolic Acids Under Mild Conditions” ChemSusChem (IF: 7.5) https://doi.org/10.1002/cssc.202300750
31. E. R. Molina, T. Vook*, **W. J. Sagues**, K. Kim, N. Labbé, S. Park, S. S. Kelley. 2023. “Green Needle Coke Production from Pyrolysis Biocrude toward Bio-based Anode Material Manufacture: Biochar Fines Addition Effect as “Physical Template” on the Crystalline Order” ACS Sustainable Chemistry & Engineering (IF: 7.1), 11, 8, 6944-6955 https://doi.org/10.1021/acssuschemeng.2c06952
32. L. M. Lower*, J. Cunniffe*, J. J. Cheng, **W. J. Sagues**. 2022. "Coupling Circularity with Negativity in Food & Agriculture Systems" Journal of the ASABE | doi: 10.13031/ja.14908
33. **W. J. Sagues**, H. Jameel, D. L. Sanchez, and S. Park. 2020. “Prospects for Bioenergy with Carbon Capture & Storage (BECCS) in the United States Pulp and Paper Industry” Energy & Environmental Science (IF: 32.4), 13, 8, 2243-2261 https://doi.org/10.1039/D0EE01107J
34. **W. J. Sagues**, J. Yang, N. Monroe, S. D. Han, T. Vinzant, M. Yung, H. Jameel, M. Nimlos, & S. Park. 2020. “A Simple Method for Producing Bio-Based Anode Materials for Lithium-Ion Batteries” Green Chemistry (IF: 9.2), 22, 7093 – 7108 https://doi.org/10.1039/D0GC02286A
35. **W. J. Sagues**, C. A. Assis, P. Hah, D. L. Sanchez, Z. Johnson, M. Acharya, H. Jameel, and S. Park. 2020. “Decarbonizing Agriculture through the Conversion of Animal Manure to Dietary Protein and Ammonia Fertilizer” Bioresource Technology (IF: 5.8), 297 https://doi.org/10.1016/j.biortech.2019.122493
36. H. Bao, **W. J. Sagues**, Y. Wang, W. Peng, L. Zhang, S. Yang, D. Xiao, and Z. Tong. 2020. “Depolymerization of Lignin into Monophenolics by Ferrous/Persulfate Reagent Under Mild Conditions” ChemSusChem (IF: 7.5) https://doi.org/10.1002/cssc.202002240
37. **W. J. Sagues**, H. Jameel, S. Park, D. L. Sanchez. 2019. “Enhanced Carbon Dioxide Removal from Coupled Direct Air Capture-Bioenergy Systems” Sustainable Energy & Fuels (IF: 4.9), 3, 3135-3146 https://doi.org/10.1039/C9SE00384C
38. **W. J. Sagues**, A. Jain, D. Brown, S. Aggarwal, A. Suarez, M. Kollman, S. Park, D. S. Argyropoulos. 2019. “Are Lignin-Derived Carbon Fibers Graphitic Enough?” Green Chemistry (IF: 9.2), 21, 4253-4265 https://doi.org/10.1039/C9GC01806A
39. **W. J. Sagues**, H. Bao, J. Nemenyi, Z. Tong. 2018. “Lignin-First Approach to Biorefining: Utilizing Fenton’s Reagent and Supercritical Ethanol for the Production of Phenolics and Sugars” ACS Sustainable Chemistry & Engineering (IF: 7.1), 6, 4, 4958-4965 https://doi.org/10.1021/acssuschemeng.7b04500
40. E. Castro, I. U. Nieves, V. Rondon, **W. J. Sagues**, M. T. Fernandez-Sandoval, L. P. Yomano, S. W. York, J. E. Erickson, W. Vermerris. 2017. “Potential for ethanol production from different sorghum cultivars” Industrial Crops and Products (IF: 3.8), 109, 367-373 https://doi.org/10.1016/j.indcrop.2017.08.050
41. K. Gubicza, Z. Barta, I. U. Nieves, **W. J. Sagues**, K. T. Shanmugam, L. O. Ingram. 2016. “Techno-economic analysis of ethanol production from sugarcane bagasse using a Liquefaction plus

Simultaneous Saccharification and Co-Fermentation process" Bioresource Technology (IF: 5.8), 208, 42-48 http://dx.doi.org/10.1016/j.biortech.2016.01.093

42. E. Castro, I. U. Nieves, M. T. Mullinnix, **W. J. Sagues**, R. W. Hoffman, M.T. Fernandez-Sandoval, Z. Tian, B. Tamang, L. O. Ingram. 2014. "Optimization of dilute-phosphoric-acid steam pretreatment of Eucalyptus benthamii for biofuel production" Applied Energy (IF: 7.9), 125, 76-83 http://dx.doi.org/10.1016/j.apenergy.2014.03.047
43. C. C. Geddes, M. T. Mullinnix, I. U. Nieves, R. W. Hoffman, **W. J. Sagues**, S. W. York, K. T. Shanmugam, J. E. Erickson, W. Vermerris, L. O. Ingram. 2013. "Seed train development for the fermentation of bagasse from sweet sorghum and sugarcane using a simplified fermentation process" Bioresource Technology (IF: 5.8), 128, 716-724 https://doi.org/10.1016/j.biortech.2012.09.121

NATIONAL REPORTS

1. Steph Herbstritt, Rebecca Sanders-DeMott, Kathy Fallon, Tom L. Richard, PhD, Sarah Baker, Angelo Gurgel, Gal Hochman, Wei Peng, Joe Sagues, Lisa Schulte Moore, Jem Woods, Strengthening Biomass Carbon Removal and Storage (BiCRS) protocols, Clean Air Task Force, 2026. https://www.catf.us/resource/strengthening-bicrs-protocols/
2. Jennifer Pett-Ridge, Hamed Ziad Ammar, Alvina Aui, Mark Ashton, Sarah E. Baker, Bruno Basso, Mark Bradford, Alexander P. Bump, Ingrid Busch, Edna Rodriguez Calzado, Jackson W. Chirigotis, Nicolas Clauser, Sinéad Crotty, Nicholas Dahl, Tao Dai, Mark Ducey, Jerome Dumortier, Nathan C. Ellebracht, Ramon Gil Egui, Ames Fowler, Katerina Georgiou, Diamantoula Giannopoulos, Hannah Goldstein, Thomas Harris, Dermot Hayes, Chad Hellwinckel, Alina Ho, Mu Hong, Susan Hovorka, Elwin Hunter-Sellars, Whitney Kirkendall, Sara Kuebbing, Matthew Langholtz, Mark Layer, Ian Lee, Reid Lewis, Wenqin Li, Weier Liu, Jimena Terrazas Lozano, Abby Lunstrum, Allegra C. Mayer, Kimberley K. Mayfield, Wilson McNeil, Peter Nico, Anastasia O'Rourke, Simon H. Pang, Keith Paustian, George Peridas, Helene Pilorge, Maxwell Pisciotta, Lydia Price, Peter Psarras, G. Philip Robertson, **William Joe Sagues**, Daniel L. Sanchez, Corinne D. Scown, Briana Mordick Schmidt, Eric W. Slessarev, Noah Sokol, Alexander J. Stanley, Amy Swan, Crystal Toureene, Andrew A. Wong, Mark Mba Wright, Yuan Yao, Bingquan Zhang, Yao Zhang, and Roger D. Aines. Roads to Removal: Options for Carbon Dioxide Removal in the United States, December 2023, Lawrence Livermore National Laboratory, LLNL-TR-852901. https://roads2removal.org/ https://doi.org/10.2172/2301853

NON-PEER-REVIEWED PUBLICATIONS

1. Canter, N. **W. J. Sagues**, (2026), "Conversion of biomass into graphite and sustainable aviation fuel," TLT, 82 (10), pp. 12-13. Available at https://www.stle.org/files/TLTArchives/2026/10_October/Tech_Beat_I.aspx.aspx.
2. **W. J. Sagues**. 2026. "Advancing Circularity through Industrial Symbiosis" ASABE Resource. https://bt.e-ditionsbyfry.com/publication/?i=859185&p=18&view=issueViewer
3. **W. J. Sagues**, A. Woodley. 2022. "Building a Biotechnology Innovation Ecosystem to Mitigate Climate Change" –Report, University-Industry Demonstration Partnership (UIDP) https://uidp.org/custom-type/innovation-in-the-bioeconomy-mitigating-climate-change/

PATENTS

Pending

1. **William Joseph Sagues**, Tanvir Islam, Richard Venditti, Alex Woodley, and Moe Pourghaz. CEMENTITIOUS SHELL ENCAPSULATION OF BIOMASS FOR LONG-TERM CARBON PRESERVATION. U.S. 64/087,937. 06/11/2026
2. **William Joseph Sagues**, Sunkyu Park, Shaikat Chandra Dey, Brian Worfolk, and Mark Nimlos. LOW-TEMPERATURE PROCESSING OF BIO-OIL FOR COMMERCIAL GRAPHITE PRODUCTION. U.S. 63/627,169. 01/31/2024

3. **William Joseph Sagues** & Ethan Woods. METHODS, DEVICES, AND SYSTEMS FOR BIOMASS COMPOSTING AND CO2 CAPTURE. 2023. North Carolina State University. PCT/US23/31060. 08/24/2023.

PUBLISHED DATA

1. J.N. Welch, I.U. Nieves, E. Castro, V. Rondon Berrio, W. Vermerris, K.T. Shanmugam, L.O. Ingram, **W.J. Sagues**. 2021. SMDemoBioref: Data from the Stan Mayfield Demonstration Biorefinery. https://doi.org/10.5281/zenodo.5682712

ENTREPRENEURSHIP & INDUSTRY ENGAGEMENT

1. Science Advisor, Vaulted Deep, 2025 – 2026
2. Science Advisor, Burnham RNG, 2024 – 2026
3. Co-founder and board member, Flip Biosystems, Inc, 2023 – 2024
4. Participant, NSF I-Corps, NCSU regional program, 2023
5. Science Advisor, Mote Hydrogen, 2021 – 2023

MEDIA & PRESS RELEASES

1. **W. J. Sagues**, S. Kim. Quoted in "New tech could squeeze wildfire risk, carbon from forest debris" The Arizona Republic (May 2026) https://www.azcentral.com/story/news/local/arizona-environment/2026/05/15/graphyte-working-with-coconino-county-to-dispose-of-forest-debris/89936438007/
2. **W. J. Sagues**. Sunkyu Park. Steven Rowland. "Farm waste turned into battery-grade graphite could help US cut dependence on China". Interesting Engineering Magazine (March, 2026) https://interestingengineering.com/energy/us-farm-waste-battery-grade-graphite
3. W J. Sagues quoted in an article published by Trellis (formerly GreenBiz). 2025. "Why Microsoft is investing in a pulp and paper mill" https://trellis.net/article/microsoft-co280-carbon-removal-pulp-paper/
4. J. Pett-Ridge, **W. J. Sagues**, et al. cited in the 2025 Economic Report of the President, Chapter 5: Achieving a Net Zero Carbon Dioxide Emissions Economy in the United State https://www.govinfo.gov/content/pkg/ERP-2025/pdf/ERP-2025-chapter5.pdf
5. **W. J. Sagues**, A. Woodley, J. Hart. 2025. "Can basalt capture carbon on the farm and help soils?" Southeast Farm Press. https://www.farmprogress.com/soil-health/can-basalt-capture-carbon-on-the-farm-and-help-soils-
6. **W. J. Sagues**, J. Hart. 2024. "Explainer: How do carbon offsets and insets work?" Southeast Farm Press. https://www.farmprogress.com/conservation-and-sustainability/explainer-how-do-carbon-offsets-and-insets-work-
7. **W. J. Sagues**, T. Howell. 2023. "The Lead", interviewed on a podcast hosted by the American Society of Agricultural & Biological Engineers (ASABE)
8. **W. J. Sagues**. 2023. "The Quest for Net Zero" interviewed on the "Farm, Food, and You" podcast hosted by NCSU College of Agriculture and Life Sciences https://farmsfoodyou.buzzsprout.com/1095827/14021098-the-quest-for-net-zero
9. **W. J. Sagues**, J. Daystar. 2023. "Threaded Together – Sustainability and Cotton", interviewed on a podcast hosted by Ecotextile News https://www.ecotextile.com/2023102031319/materials-production-news/podcast-thread-together-sustainability-and-cotton.html
10. S. Jones, **W. J. Sagues**. 2023. "The Quest for Net Zero" article published the NCSU's College of Agriculture & Life Sciences (CALS) https://cals.ncsu.edu/news/joe-sagues-carbon-recycling/
11. **W. J. Sagues**, D. Thompson, & S. Lommel. 2023. Live segment on CBS My Carolina "Long-Term Carbon Sequestration" https://www.cbs17.com/my-carolina/my-carolina-videos/monday-february-20th-cheerwine-noda-brewing-partner-to-create-cheerwine-ale/

12. J. Hart., **W. J. Sagues**. 2023. "Carbon bathtub filling up too fast". Southeast Farm Press. https://www.farmprogress.com/conservation-and-sustainability/carbon-bathtub-filling-up-too-fast
13. S. Jones, **W. J. Sagues**. 2022. "$2.25M DOE Grant Awarded to Develop Sustainable Aviation Fuel and Graphite from Waste Streams", https://cals.ncsu.edu/news/2-25m-grant-awarded-to-develop-sustainable-energy-products-from-waste-streams/
14. **W. J. Sagues**. 2022. Interviewed by WRAL-TV (NBC) in Raleigh, NC on the sustainable practice of converting sunflower residues into biodiesel fuel: https://www.wral.com/dix-park-sunflowers-turned-into-biofuel-after-they-wilt/20376732/
15. E. Packard, "NC State Announces 2021-22 Goodnight Early Career Innovators", https://news.ncsu.edu/2022/04/nc-state-announces-2021-22-goodnight-early-career-innovators%EF%BF%BC/
16. K. A. Askey, J. Welch, B. Wilson, & **W. J. Sagues**. 2022 "Bioenergy – Data Boost", ORNL press release, https://www.ornl.gov/news/bioenergy-data-boost
17. **W. J. Sagues** & M. Grattiri. 2021 "Merging Industry, Academia and National Labs at the Electrosynthesis of Chemicals & Fuels Session", ACS Nexus, https://communities.acs.org/t5/GCI-Nexus-Blog/Merging-Industry-Academia-and-National-Labs-at-the/ba-p/85819
18. **W. J. Sagues**. 2021. "The Farming We Need", Indigo Ag Monthly Newsletter, personal quote included in newsletter sent to over 4,000 sustainability officers
19. D. Shore, **W. J. Sagues**. 2021 "New Faculty Focus: A Focus on Carbon" NCSU press release, https://www.bae.ncsu.edu/news/2021/new-faculty-focus-a-focus-on-carbon/
20. **W. J. Sagues**, 2019, "Forest Biomaterials Joe Sagues Awarded Prestigious US DOE Fellowship", https://cnr.ncsu.edu/fb/news/2019/09/forest-biomaterials-joe-sagues-awarded-prestigious-u-s-doe-fellowship/

TEACHING

North Carolina State University, 2021 – present

1. BAE 321: Bioprocess Engineering Fundamentals (3 credits, fall, lead instructor)

   Description: This course provides undergraduate students with a rigorous foundation in bioprocess engineering fundamentals, emphasizing applied mathematics, quantitative problem-solving, and the analysis of biological systems relevant to bioproduct and bioprocess design.

   Instructional development: Dr. Sagues redesigned the entire course around a more rigorous, applied mathematics framework for bioprocess engineering, adding hands-on laboratory modules that use Python coding to help students model, analyze, and solve quantitative bioprocess problems.

   Course evaluation: 4.74/5.00 (average of all responses across all semesters taught)

   Selected student comment: "This was my favorite class this semester as I really enjoyed the material as well as the way it was taught and presented. The two lab sessions we did were a lot of fun, and those are exactly the reason that confirm to me that I love doing what I am. I hope more opportunities like this will stay in this class in the future and become more commonplace in other classes. I thought that all of the material was taught really well and the tests were reasonable."

   Selected student comment: "Dr. Sagues is a very interesting professor to learn from. He works diligently to tailor his course and the material we learn in class to the industry and the interest of the students. I really enjoyed the pace of the course. I actually walked away from each class feeling like the learned something and comprehended it. We had a discussion class period that was very interesting and lead to great participation. It was also nice to feel that he actually cared about the student and their interests. He was very open to feedback and improved throughout the semester. Grades were alwasy returned in a timely manor and problems were explained."

   Selected student comment: "None, honestly my favorite professor at state."
2. BAE 495/590: Engineering Properties of Biological Materials (1 credit, every other spring, co-instructor)

Description: This hands-on, laboratory-based course gives students practical experience applying engineering principles through experiments, data analysis, instrumentation, and problem-solving in biological and agricultural engineering systems.

Instructional development: The course was created from scratch as a brand-new, highly hands-on laboratory course, with more than 10 lab-based activities that give students practical experience using state-of-the-art analytical equipment and real-world engineering measurement techniques. Co-developed with Dr. Praveen Kolar.

Course evaluation: 4.78 / 5.00 (average of all responses across all semesters taught)

Selected student comment: "This was my favorite course this semester, and one of my favorites ever! (It's hard to beat rock climbing, but probably my favorite after that :)). I liked that we got to cover so many things hands-on and really focused on the application of these skills - the assignments, discussion, and assessments really aligned with this goal much better than other courses."

Selected student comment: "Very great course in terms of material and instruction, experimenting with engineering concepts while under the aid of professors and grad students allowed the opportunity to gather in-depth knowledge of course concepts. Provided a more casual setting to talk to professors more and ask more creative questions."

3. BAE 495/590: Carbon Sequestration (2 credits, spring, lead instructor)

Description: This course provides a concise, engaging, and well-structured introduction to strategies for reducing emissions and sequestering carbon.

Instructional development: This first-of-its-kind course has proven highly popular, routinely enrolling 15 – 30 students from nine academic departments across three colleges, and combines interdisciplinary course content with engaging interviews from industry leaders.

Course evaluation: 4.75/5.00 (average of all responses across all semesters taught)

Selected student comment: "Very clear professor who put effort into everything he said. I felt there was a point to every slide and statement he said and our time wasn't wasted. He is a very passionate professor and designed the readings very well. Props."

Selected student comment: "I really enjoyed this course, not only was it short and sweet but it expanded my knowledge on climate positive strategies to reduce or sequester carbon emissions. I enjoyed the class material and lecture setup. The homework was very manageable with forums be short but they also challenged me to explore concepts while leaving responses concise. Overall, great class that uncovered topics crucial to this day and age!"

4. PSE 295/FB 595: Engineering Concepts for the Production of Bio-Based Materials, Chemicals, & Energy (3 credits, every other spring, co-instructor)

Description: This course introduces students to the science, chemistry, and engineering principles used to convert biomass into bio-based materials, chemicals, fuels, and energy, with emphasis on conversion technologies, biorefinery economics, and real-world process applications.

Instructional development: This new course is co-taught with the Paper Science and Engineering program, with development supported by a USDA grant focused on building the workforce needed for a circular bioeconomy.

Course evaluation: 4.70/5.00 (average of all responses across all semesters taught)

Selected student comment: "Dr. Sagues was very enthusiastic and well-informed on the material, something I really appreciated about his videos. He was very clear when going through examples, and always explained things in a way that made sense, and even when going through some of the simpler concepts, it never felt like he was talking down to the viewer."

Selected student comment: "The course material was fascinating, and had so many real-world applications! This is the first course I have had that has really focused on the practical applications of the material instead of spending a lot of time on the theoretical side and neglecting the practical aspect of the material, and that made it feel very important."

USDA-Sponsored Extension Foundation, 2020 – present

1. The Sustainable Bioeconomy – Free online course

   Description: The Sustainable Bioeconomy course introduces students and professionals to the opportunities, challenges, technologies, careers, and societal responsibilities associated with producing biofuels, paper and wood products, advanced biomaterials, and other bioproducts in an environmentally and socially responsible bioeconomy.

   Instructional development: The course was co-developed by Dr. Sagues and is freely available online through the USDA Extension Foundation, making its bioeconomy-focused content accessible to learners, educators, and professionals beyond NC State.

   Access: https://campus.extension.org/enrol/index.php?id=1641

2. Biomass Conversion for Bioproducts & Bioenergy – Free online course

   Description: This course introduces students to the fundamental principles, technologies, and applications of biomass conversion for producing bioproducts and bioenergy.

   Instructional development: The course was co-developed by Dr. Sagues and is freely available online through the USDA Extension Foundation, making its bioeconomy-focused content accessible to learners, educators, and professionals beyond NC State.

   Access: https://campus.extension.org/enrol/index.php?id=1642

MENTORING

Postdoctoral Advising

1. Shrabani De, PhD, 2026 – present
2. Jingjing Wang, PhD, 2026 – present
3. Julia Cunniffe, PhD, 2026 – present
4. Edgar Carrejo, PhD, 2026
5. Ethan Woods, PhD, 2025
6. Sumon Reza, PhD, 2023 – 2025
7. Shammya Afroze, PhD, 2024 – 2025
8. Yaojing Qi, PhD, 2022 – 2025
9. Nate Garland, PhD, 2024
10. Nicolas Clauser, PhD, 2022 – 2023
11. Ruochen Wu, PhD, 2021 - 2022

PhDs in Progress as Chair / Co-Chair

1. Ramesh Kalagnanam, BAE, NCSU, 2026 – 2029, System-boundary differences in Biomass Carbon Removal and Storage (BiCRS) projects and protocols and their impacts on credited carbon removal
2. Carly Sussman, BAE, NCSU, 2026 – 2030, Stakeholder-driven assessment of opportunities to advance the circular bioeconomy
3. Nora Sauers (Co-Chair), BAE, NCSU, 2025 – 2029, Carbon Removal via Enhanced Rock Weathering in Organic Farming
4. Tanvir Islam, BAE, NCSU, 2025 – 2029, Atmospheric Carbon Removal via Burial of Cotton Waste Materials
5. Lillian Lower, BAE, NCSU, 2023 – 2027, Catalytic Graphitization of Sargassum Waste into Li-ion Graphite Anode Material

PhD Graduates as Chair / Co-Chair

1. Edgar Carrejo (co-chair), Forest Biomaterials, NCSU, 2021 – 2025, Techno-Economic and Life Cycle Assessment of Emerging Methods to Decarbonize Industrial Biomass Pulping
2. Julia Cunniffe (straight to PhD from BS), BAE, NCSU, 2021 – 2025, Data-Driven Techno-Economic Assessment of Industrial Bioprocessing With and Without Carbon Capture

3. Vanessa Rondon Berrio, BAE, NCSU, 2021 – 2025, Advancing the Formate Bioeconomy via Microbe Discovery, Metagenomics, Genetic Engineering, and Techno-Economic Analysis
4. Ethan Woods (straight to PhD from BS), BAE, NCSU, 2021 – 2025, Composting and Enhanced Rock Weathering: The Environmental Impact and Economic Feasibility of Two Emerging Carbon Removal Pathways

MS in Progress as Chair

1. Pablo Ortiz, BAE, NCSU, 2025 – 2027, Scaling Up Industrial Composting with Gaseous CO2 Capture
2. Lauren Daeke, BAE, NCSU, 2026 – 2028, BioRock: Forest Thinnings for Carbon Removal and Infrastructure

MS Graduates as Chair / Co-Chair

1. June Khongpatimakorn, BAE, 2022 – 2024, A Feasibility Assessment of Waste Cotton to Carbon-Negative Bioproducts
2. Lillian Lower (Co-Chair), BAE, NCSU, 2021 – 2023, Thermophilic Anaerobic Digestion of Lemnaceae Biomass for Biogas Production
3. Trevor Vook, BAE, NCSU, 2020 – 2022, Catalytic Graphitization of Biocarbon for Green Battery Anodes

PhDs in Progress as Committee Member

1. Alan Ferris, Materials Science and Engineering, 2024 – 2028, CO2 capture via electrochemical capacitance
2. Rashid Imoro, Crop & Soil Science, NCSU, 2024 – 2028, Biochar and Basalt as a Soil Health and Carbon Sequestration Strategy for N.C. Agriculture
3. Gavin Gaynor, Forest Biomaterials, NCSU, 2023 – 2026, Development of a butanol/water-based biorefinery for the valorization of miscanthus: Process optimization, solvent recovery, and modeling
4. Maria Higuita, Forestry & Environmental Resources, NCSU, 2023 – 2027, Building a synthetic ectomycorrhizal community based on the ectomycorrhizal species associated with Loblolly pine
5. Jonathan Morizet-Davis, Forest Biomaterials, 2023 – 2027, Techno-economic and environmental life cycle assessment of textile waste valorization strategies
6. Steven Pires, Forest Biomaterials, NCSU, 2022 – 2026, Evaluating cotton apparel with dynamic life cycle assessment: the climate benefits of temporary carbon storage
7. Nazrul Islam, Forest Biomaterials, NCSU, 2024 – 2028, Mechanistic Assessment of Biographite Synthesis for Green Energy Storage
8. Jose Gonzalez-Aguirre, Forest Biomaterials, NCSU, 2024 – 2028, Process Design and Techno-Economic Analysis for the Production of Bio-based Graphite and Liquid Hydrocarbons from Lignocellulosic Biomass

PhD Graduates as Committee Member

1. Jingjing Wang, BAE, NCSU, 2022 – 2025, Redox-enhanced bio-succinic acid fermentation
2. Shaikat Chandra Dey, Forest Biomaterials, NCSU, 2020 – 2024, Catalytic Graphitization of Biocrude for Green Lithium-Ion Batteries
3. Ishita Kamboj, Materials Science & Engineering, NCSU, 2020-2024, Design of Lithium-ion Battery Cathode Materials and Architectures
4. Hyeonji Park, Forest Biomaterials, NCSU, 2020 – 2023, Valorization of Sludge-derived Hydrolysate into Furan Chemicals
5. Rodrigo Tello Buitrago, Forest Biomaterials, NCSU, 2018 – 2022, Life-Cycle Environmental and Economic Assessment of Diverse Pulp Grades – Targeting Energy Efficiency and GHG Reductions based on Process Simulation
6. Eliezer Reyes Molina, Forest Biomaterials, NCSU, 2018 – 2022, Graphite Nucleation Induced by Biochar Particles in Bio-Oil

MS Graduates as Committee Member

1. Nur-Al-Sarah Rafsan, Biological & Agricultural Engineering, NCSU, 2021 – 2023, S-doped Biochar for Supercapacitors
2. Matthew Byington, Forest Biomaterials, NCSU, 2020 – 2022, Optimization of the Graphite Exfoliation & Compression Process

Undergraduate Research Assistant Advising

1. Luke Ryan, CBE, NCSU, 2026 – present
2. Grant Johnson, BAE, NCSU, 2025 – present
3. Rishita Tubati, BAE, NCSU, 2025 – present
4. Sai Gosala, BAE, NCSU, 2025 – present
5. Gray Hudson, BAE, NCSU, 2025 – present
6. Abby Studneck, BAE, NCSU, 2025 - present
7. Harrison King, BAE, NCSU, 2024 - present
8. Caleb Carter, CBE, NCSU, 2024
9. Perry Berlin, BAE, NCSU, 2022 – 2025
10. Chloe Lum, BAE, NCSU, 2022 – 2025
11. June Khongpatimakorn, BAE, NCSU, 2022
12. Julianne Mahley, CBE, NCSU, 2022 – 2023
13. Shomari Presswood, BAE, NCSU, 2022
14. Paige Seibert, BAE, NCSU, 2021 – 2022
15. Delani McKee, BAE, NCSU, 2021 – 2022
16. Luke Szoch, BAE, NCSU, 2021 – 2022
17. Nicholas Monroe, Forest Biomaterials, NCSU, 2019 – 2020
18. Thomas Cluen, Forest Biomaterials, NCSU, 2018 – 2019
19. John Nemenyi, ABE, UF, 2015 – 2017
20. Zhonglin Lai, ABE, UF 2015 - 2016

Undergraduate Senior Design Mentorship

1. Mentor, Senior Design Group in Dept. of Biological & Agricultural Engineering, NCSU, 2023-2024, 2024-2025, 2025-2026, and 2026-2027

Awards Received by Graduate & Undergraduate Research Assistants

1. Lillian Lower (PhD Student): Outstanding Poster Award, Annual International Meeting, ASABE, 2025
2. Nora Sauers (PhD Student): William Walton & Emily Inscoe Stevens Fellowship (CALS), NCSU, 2026
3. Lillian Lower (PhD Student): Graduate Outstanding Leadership Award, College of Agriculture and Life Sciences (CALS), NCSU, 2025
4. Lillian Lower (PhD Student): Selected to attend the Next Generation Electrochemistry (NGenE) Workshop, Argonne Collaborative Center for Energy Storage Science (ACCESS), Energy Storage Research Alliance (ESRA), and University of Illinois Chicago (UIC) – through the George Crabtree Institute for Discovery and Sustainability, 2025
5. Vanessa Rondon Berrio (PhD Student): First place, Student Research Poster Competition, Society for Industrial Microbiology (SIMB) Symposium on Bio-materials, fuels, and chemicals (SBFC), 2024
6. Vanessa Rondon Berrio (PhD Student): Third place, Student Research Oral Competition, Society for Industrial Microbiology (SIMB) Symposium on Bio-materials, fuels, and chemicals (SBFC), 2024
7. Perry Berlin (Undergraduate Student): REEP Scholar, BAE, NCSU, 2024 – 2025
8. Ethan Woods (PhD Student), William Walton and Emily Inscoe Stevens Fellowship for Plant, Soil, and Environmental Stewardship, NCSU, 2024

9. Julia Cunniffe (PhD Student), Graduate Student Sustainability Award, College of Agriculture and Life Sciences (CALS), NCSU, 2024
10. Julia Cunniffe (PhD Student), Presentation Excellence Award, Annual International Meeting, American Society of Agricultural & Biological Engineers, 2023
11. Lillian Lower (PhD Student), Presentation Excellence Award, Annual International Meeting, American Society of Agricultural & Biological Engineers, 2023
12. Vanessa Rondon Berrio (PhD Student), Presentation Excellence Award, Annual International Meeting, American Society of Agricultural & Biological Engineers, 2023
13. Lillian Lower (PhD Student): KIETS Climate Leaders Student Fellow, Kenan Institute of Engineering, Technology, & Science, 2023 – 2024
14. Lillian Lower (PhD Student): Center for Environmental Farming Systems (CEFS) Graduate Fellow, NCSU, 2023 – 2024
15. Ethan Woods (PhD Student): Accepted into NCSU's competitive "Long View Project" https://provost.ncsu.edu/university-interdisciplinary-programs/longview/
16. Lillian Lower (PhD Student): First place, Student Research Poster Competition, Society for Industrial Microbiology (SIMB) Symposium on Bio-materials, fuels, and chemicals (SBFC), 2023
17. Paige Seibert (Undergraduate): Science Undergraduate Laboratory Internship (SULI) at the National Renewable Energy Laboratory (NREL), 2023
18. Julia Cunniffe (PhD Student): Summer fellowship with the Bipartisan Policy Center, 2023
19. Julia Cunniffe (PhD Student): KIETS Climate Leaders Student Fellow, Kenan Institute of Engineering, Technology, & Science, 2022 – 2023
20. Julia Cunniffe (PhD Student): College of Engineering Dean's Doctoral Fellowship, 2022-2023
21. Ethan Woods (PhD Student): Technology-to-Market Scholar for the Department of Energy's Advanced Research Projects Agency (ARPA-E), 2022
22. Ethan Woods (PhD Student): Consulting Intern, Aemetis Bioenergy, 2022
23. Julia Cunniffe (MS Student): Consulting Intern, Aemetis Bioenergy, 2022
24. Ethan Woods (PhD Student): Student Delegate, Consortium for Advanced Bioeconomy Leadership Education (CABLE), USDA, 2021 - 2022
25. Julia Cunniffe (MS Student): Student Delegate, Consortium for Advanced Bioeconomy Leadership Education (CABLE), USDA, 2021 – 2022
26. Trevor Vook (MS Student): 2nd place, Research Competition, NC Agricultural & Life Sciences, NCSU, 2021
27. Trevor Vook (MS Student): Outstanding Student Presentation, Annual International Meeting, American Society of Agricultural & Biological Engineers, 2021
28. Vanessa Rondon Berrio (PhD Student), Robert O. Evans Fellowship, BAE, NCSU, 2021
29. Luke Szoch (Undergraduate Student): REEP Scholar, BAE, NCSU, 2021 – 2022
30. Paige Seibert (Undergraduate Student): Summer Research Fellow, Office of Undergraduate Research, NCSU, 2021
31. John Nemenyi & Zhonglin Lai (Undergraduate Students): 1st place, Research Competition, ABE, UF, 2016

Student Organization Advising

1. Mentor, Grand Challenges Scholar Program, NCSU, 2022 – present
2. Mentor, Graduate Student Association, Dept. of Biological & Agricultural Engineering, NCSU, 2021 – present
3. Mentor, CHE 497/498 Chemical Engineering Projects I & II, NCSU, 2024
4. Mentor, Senior Design Group in MBA 585: Current Topics in Biosciences Management, NCSU, 2022

5. Mentor, Undergraduate Senior Design, Dept. of Chemical Engineering, University of British Columbia, 2020 – 2021

HONORS & AWARDS

1. Presidential Citation, American Society of Agricultural & Biological Engineers (ASABE), 2026
2. Gale A. Holloway Professional Development Award ("Major Award"), American Society of Agricultural & Biological Engineering (ASABE), 2026
3. KIETS Climate Leaders Faculty Fellow, Kenan Institute of Engineering, Technology, & Science, 2025 – 2026
4. Invited Author, Sustainability Talents Special Collection, ChemSusChem, 2025
5. Invited Author, Emerging Leaders Collection, BioEnergy Research, 2025
6. Outstanding Young Faculty Member, Biological & Agricultural Engineering, NC State University, 2023
7. KIETS Climate Leaders Faculty Fellow, Kenan Institute of Engineering, Technology, & Science, 2023 – 2024
8. 'Top Viewed Article' award in recognition of being within top 10% of most-viewed papers, ChemSusChem (IF: 7.5), 2023
9. Superior Paper Award "Coupling Circularity With Carbon Negativity in Food and Agriculture Systems", 2023, American Society of Agricultural & Biological Engineers
10. Finalist, NCSU Graduate School Outstanding Graduate Faculty Mentor Award, 2023
11. Outstanding Researcher, Biological & Agricultural Engineering, NC State University, 2022
12. KIETS Climate Leaders Faculty Fellow, Kenan Institute of Engineering, Technology, & Science, 2022 – 2023
13. Goodnight Early Career Innovator, NCSU, 2022
14. Honorary Advisor, Consortium for Advanced Bioeconomy Leadership Education (CABLE), USDA, 2021
15. Graduate Student Research (SCGSR) Fellowship, Office of Science, U.S. Department of Energy, 2020
16. Research article selected as one of the journal's 'Hot Articles of 2020,' a distinction awarded to the top 10% of published papers, Energy and Environmental Science (IF: 32.4)
17. CIBA Research Award, American Chemical Society - Green Chemistry Institute, 2018
18. 1st Place – Boyd Scott Graduate Research Award, Annual International Meeting, American Society of Agricultural and Biological Engineers, 2017
19. 1st Place – 5-Minute Rapid Fire Presentation + Poster Competition, International Bioproducts Conference, Technical Association of the Pulp & Paper Industry, 2016
20. 1st Place – Outstanding Student Presentation in Applied Research 38th Symposium on Biotechnology for Fuels & Chemicals, Society for Industrial Microbiology and Biotechnology, 2016
21. Awards Finalist – New Faces of Engineering, New Faces of Engineering – Professional Edition, DiscoverE, National Society of Professional Engineers, 2016
22. Finalist, Andrews Launch Accelerator Startup Competition, Entrepreneurship Clinic, North Carolina State University, 2020
23. Graduate School Fellowship, College of Natural Resources, North Carolina State University, 2018
24. 1st Place – Research Poster Symposium, University of Florida's Chemical Engineering Department, 2017
25. 2nd Place – Research Poster Symposium, University of Florida's Agricultural and Biological Engineering Department, 2017
26. Service Award, Florida Section of the American Society of Agricultural & Biological Engineers, 2016
27. Graduate Student Travel Grant, Graduate Student Council, University of Florida, 2016
28. Graduate Research Fellowship, Informatics Institute, University of Florida, 2016
29. Graduate School Fellowship, College of Engineering, University of Florida, 2015

PROFESSIONAL SERVICE

Grant Program Workshop Participation

1. Clean Air Task Force (CATF), Biomass Carbon Removal and Storage (BiCRS) Protocol Assessment Workshop, 2025
2. US DOE, Developing Biomass Carbon Removal & Storage (BiCRS) Life Cycle Assessment (LCA) Best Practices, 2024
3. US DOE ARPA-E Program on Carbon Harvesting (2024)
4. US NSF FEWSUS: Food-Energy-Water Bioeconomies for Net-Zero Transition (2024)
5. US DOE FECM Program on Biomass Carbon Removal & Storage (2023)
6. US DOE ARPA-E Program on Carbon Farming (2022)
7. US DOE ARPA-E Program on Carbon Sequestering Building Materials (2021)
8. US DOE ARPA-E Program on Decarbonizing the Steel Industry (2021)
9. US DOE BETO Program on Utilizing Biorefinery Data (2020)

Grant Proposal Reviewer

1. DOE Office of Science Distinguished Mentors for Workforce Development Award (2025)
2. USDA NIFA Commodity Grant Program (2025)
3. USDA SBIR/STTR Biofuels and Biobased Products (2024)
4. NSF EPSCoR Advancing climate change research and resilience capacity to expand opportunities for disproportionately affected communities (2023)
5. USDA SBIR/STTR 8.1 Forests and Related Products (2022)
6. US DOE ARPA-E Program on Entrepreneurship in Clean Energy (2021)
7. North Dakota Industrial Commission Program on CO2 Capture & Utilization (2021)
8. North Dakota Industrial Commission Program on CO2 Capture & Utilization (2020)
9. US DOE ARPA-E Program on Direct Air Capture and Ocean Capture (2020)

Manuscript Reviewer

1. International Journal of Greenhouse Gas Control (2026)
2. Journal of Power Sources (2026)
3. iScience (2022, 2026)
4. Biofpr: biofuels, bioproducts, and biorefining (2020, 2021, 2022, 2025, 2026)
5. ACS Environmental Science & Technology (ES&T) (2025)
6. Journal of Environmental Chemical Engineering (2025)
7. Nature Reviews Earth & Environment (2024)
8. Discover Applied Sciences (2024)
9. ACS Sustainable Chemistry & Engineering (2023)
10. ACS Applied Energy Materials (2023)
11. Frontiers in Climate (2021)

Institutional Leadership & Membership

1. Member, Search Committee: Department Head of Biological & Agricultural Engineering, NCSU, 2025
2. Member, Public Relations & Recruitment Committee, Biological and Agricultural Engineering, 2023 – present
3. Mentor on Industrial Symbiosis Project, Campus as a Classroom Internship Program, Climate and Sustainability Academy, NCSU, 2025 - present
4. Vice Chair, Circular Bioeconomy Systems Institute (CBSI), American Society of Agricultural & Biological Engineers (ASABE), 2025 - present

5. Mentor, Research and Educational Enhancement Projects (REEP) Scholars Program, NCSU, 2021-2022 & 2024 - 2025
6. Founder & Chair, Bioprocess Startup Competition, American Society of Agricultural & Biological Engineers (ASABE), 2021 - present
7. Board Member, NCSU's Sustainability Fund, 2023 – 2025
8. Elected Member, American Society of Agricultural and Biological Engineers (ASABE) Nominating Committee, 2024 – 2026
9. Member, Student Competition Committee P-120, American Society of Agricultural & Biological Engineers (ASABE), 2021 - present
10. Member, ASE-16, Engineering for Sustainability, American Society of Agricultural & Biological Engineers (ASABE), 2021 - present
11. Scientific Committee Member, International Symposium on Wood, Fiber and Pulping Chemistry (ISWFPC), 2025
12. NSF I-Corps, NCSU regional program, 2023
13. Chair, Working Group 1, Circular Bioeconomy Systems Task Force, American Society of Agricultural & Biological Engineers (ASABE), 2021 - 2023
14. Invited Technical Advisor & Writer, Leveraging Biotechnologies to Mitigate Climate Change – Workshop & Report, University-Industry Demonstration Partnership (UIDP), 2021 - 2022
15. Secretary, Florida Section of the American Society of Agricultural & Biological Engineers, 2015 – 2017

Conference Leadership

1. Chair and Convener, Session "System Optimization & Integration for Bioconversion", Society for Industrial Microbiology (SIMB) Symposium on Bio-materials, fuels, and chemicals (SBFC), 2026
2. Scientific Committee Member, International Symposium on Wood, Fiber and Pulping Chemistry (ISWFPC), 2025
3. Planning Committee Member, Bioderived Materials and Chemicals in Circular Bioeconomy Systems Conference, Interinstitutional Conference led by NCSU, UTennessee, VTech, HudsonAlpha, and AgInnovation South, 2025
4. Moderator, Bioprocess Startup Competition, The American Society of Agricultural & Biological Engineers' 2022, 2023, 2024, & 2025 Annual International Meetings
5. Chair, Graduate Student Oral Presentations & Rapid Fire Poster Presentations, 2024, Society for Industrial Microbiology (SIMB) Symposium on Bio-materials, fuels, and chemicals (SBFC)
6. Co-Chair, Session on Biodegradable Polymers from Renewable & Waste Resources and Biocomposites, American Institute of Chemical Engineers (AIChE) 2023 & 2024 Annual Conference
7. Chair, Emerging Research Showcase: Long-Term Carbon Sequestration, 2023, NCSU College of Agriculture & Life Sciences https://www.eventbrite.com/e/emerging-research-showcase-long-term-carbon-sequestration-tickets-467644085047
8. Organizer and Moderator, Workshop on Circular Bioeconomy Systems, The American Society of Agricultural & Biological Engineers' 2022 Annual International Meeting
9. Symposia Director, The American Chemical Society Green Chemistry Institute's 2021 Annual Green Chemistry & Engineering Conference -- Symposia: Electrosynthesis of Chemicals & Fuels (co-sponsored by iScience)
10. Convener and Moderator, Session on Electrosynthesis of Chemicals & Fuels, The American Chemical Society Green Chemistry Institute's 2021 Annual Green Chemistry & Engineering Conference

Seminar Leadership

1. Coordinator, research seminar by visiting professor Dr. Daniel Sanchez from UC Berkeley. 2023. "Markets for Biomass Carbon Removal"

2. Coordinated meeting to present advancements in carbon capture in the pulp and paper sector. 2023. Attendance: 25. Attendees from UC Berkeley, US Department of Energy, Indigo Ag, Cotton Incorporated, Andrtiz, and Westrock.
3. Coordinator, webinar series on carbon dioxide removal, NCSU, 2021

Student Engagement

1. Guest lecturer, Introduction to Sustainable Materials Technology (SMT 200), Lecture Dr. Perry Peralta, NCSU, 2020, 2021, 2022, 2023
2. Guest lecturer, Introduction to Engineering and Problem Solving (E101), NCSU, 2022, 2023
3. Invited judge, Research Poster Competition, 2023, Society for Industrial Microbiology (SIMB) Symposium on Bio-materials, fuels, and chemicals (SBFC)
4. Invited Judge, Poster Competition, American Institute of Chemical Engineers – Bioenergy Conference, 2020
5. Professional Development Group Leader, Forest Biomaterials Graduate Student Association, North Carolina State University, 2019
6. Founder & President, Technical Association of the Pulp and Paper Industry Student Chapter, University of Florida, 2016 – 2017
7. President, Biological Engineering Graduate Student Organization, University of Florida, 2016 – 2017
8. Treasurer, Chemical Engineering Graduate Student Organization, University of Florida, 2016 – 2017
9. Pen-Pal, Letters to a Pre-Scientist, 2015 – 2017
10. Invited Judge, State Science & Engineering Fair, Florida Foundation for Future Scientists, 2016
11. Invited Judge, Future City Competition, DiscoverE's National Science Fair, 2016

Professional Society Membership

1. American Society of Agricultural & Biological Engineers, 2015 – present
2. American Institute of Chemical Engineering, 2015 – present
3. Society for Industrial Microbiology & Biotechnology, 2015 – present
4. Institute of Biological Engineers, 2015 – 2022
5. American Chemical Society, 2017 – 2021
6. Technical Association of the Pulp and Paper Industry, 2015 – 2020

PRESENTATIONS

Invited Oral Presentations

1. M. Langholtz, **W. J. Sagues**. 2026. "Biomass Carbon Removal Can Help Sustainable Aviation Fuels Achieve On-Time Arrival." Invited presentation, Andrew Chase Award Session in Honor of Dr. Sunkyu Park, American Institute of Chemical Engineers (AIChE) Annual Meeting, Minneapolis, MN.
2. **W. J. Sagues.** 2026. "Techno-economic analysis of carbonic anhydrase + MDEA for CO_2." Department of Chemical, Materials and Industrial Production Engineering, University of Naples Federico II, Naples, Italy.
3. **W. J. Sagues**, M. Langholtz. 2026. "Can Biomass Carbon Removal Help Sustainable Aviation Fuel Achieve On-Time Arrival?" Society for Industrial Microbiology & Biotechnology (SIMB) Symposium on Biomaterials, Fuels, & Chemicals (SBFC).
4. **W. J. Sagues**, E. Woods, M. Langholtz, and I. Busch. 2026. "A National Assessment of Carbon Removal via the US Cotton Industry" Cotton Beltwide Conference
5. **W. J. Sagues**. 2026. "Securing Domestic Battery Materials from Biomass" NCSU Battery Symposium
6. **W. J. Sagues**. 2025. "Leveraging the Bioeconomy for Carbon Drawdown" Mid-Atlantic Sustainable Bioproducts & Bioenergy Consortium (MASBio) Annual Meeting – Biomass for Value-Added Products: Legacy and Future Pathways

7. **W. J. Sagues**. 2025. “Decarbonized Lime Kilns via Oxy-Fuel Calcination” International Symposium on Wood, Fiber, and Puling Chemistry
8. **W. J. Sagues**. 2025. “Quantifying Atmospheric Carbon Removal at Pulp and Paper Mills: A Life Cycle Assessment Across System Boundaries” Bioderived Materials and Chemicals in Circular Bioeconomy Systems Conference
9. **W. J. Sagues**. 2025. “Upcycling Cotton Textile Waste into High Quality Biochar and Activated Carbon for Energy Storage Applications” Cotton Beltwide Conference
10. **W. J. Sagues**. 2025. “Kinetic Assessment of Pulp Mill-Derived Lime Mud Calcination in High CO2 Atmosphere” International Symposium on Wood Fiber and Pulping Chemistry
11. **W. J. Sagues**. 2025. “Techno-Economic Screening to Assess the Feasibility of Bio-Electrochemical Reduction of CO2 to Formic Acid” Biocatalyst Interactions with Gases (BIG) Research Symposium
12. **W. J. Sagues**. 2024. “Roads to Removal: Opportunities for Carbon Removal in North Carolina”. Invited panelist at the UNC Clean Tech Summit
13. **W. J. Sagues**. 2024. “Circular Battery Anodes via Catalytic Graphitization of Biomass” US NSF workshop on FEWSUS: Food-Energy-Water Bioeconomies for Net-Zero Transition
14. **W. J. Sagues**. 2024. “Emerging Biomass Carbon Removal & Storage Technologies” Invited seminar for the Clean Air Task Force (CATF)
15. **W. J. Sagues**. 2024. “My Journey to Teaching & Innovation in Carbon-Negative Bioprocessing”. Thomas Jefferson Scholars, NCSU
16. **W. J. Sagues**. 2024. “Carbon Removal: The Gold Standard for Carbon Credits”. Invited panelist at the Renewable Energy Finance Forum (REFF) – Wall Steet.
17. **W. J. Sagues**. 2024. “Advancing the Bioeconomy via Applied Innovations in Circular and Carbon-Negative Bioprocessing” Invited seminar at New Mexico State University
18. **W. J. Sagues**. 2024. “Advancing the Bioeconomy via Applied Innovations in Circular and Carbon-Negative Bioprocessing” Invited seminar at the University of Arkansas
19. **W. J. Sagues**. 2024. “Leveraging the Bioeconomy for Circularity and Carbon Removal ” Invited presentation at the USDA Frontiers in Biorefining Conference
20. **W. J. Sagues**. 2024. “Biocarbon Flow Capacitors” Invited presentation at the US Department of Energy (DOE) Advanced Research Projects Agency – Energy (ARPA-E)’s Carbon Harvesting Workshop
21. **W. J. Sagues**. 2023. “The Potential for Biomass Carbon Removal & Storage in the US Bioeconomy” Invited Key Note presentation. Kenan Institute for Engineering, Technology & Science (KIETS) Research Symposium.
22. **W. J. Sagues**. 2023. “The Shifting Role of Bioproducts in Circular Systems and the Importance of Interdisciplinarity” Invited Key Note presentation. American Society of Agricultural & Biological Engineers Circular Bioeconomy Systems Day as part of the Annual International Meeting
23. **W. J. Sagues**. 2023. “Valorizing atmospheric CO2 via Flipped Composting”. NC Chapter of the Solid Waste Association of North America
24. **W. J. Sagues** 2022. “Circular Bioeconomy Systems & Carbon Dioxide Removal”. Keynote speaker at ASABE’s tri-state section meeting between SC, NC, and VA.
25. **W. J. Sagues**. 2022. “The Biocarbon Utilization & Sequestration Lab”. Oral presentation at NCSU Bioenergy symposium hosting the Idaho National Laboratory
26. **W. J. Sagues**, A. Woodley. 2022. “Highlights of the UIDP Workshop: Leveraging Biotechnologies to Mitigate Climate Change” UIDP webinar series
27. **W. J. Sagues**. 2022. “Bioeconomy Supply Chains & Conversion Processes for Carbon Removal”. Oral presentation at US Department of Energy’s Advanced Research Projects Agency’s Workshop on Carbon Farming
28. **W. J. Sagues**. 2022. “Opportunities for Industrial Carbon Mineralization”. Oral presentation to the company Nouryon.

29. **W. J. Sagues**. 2022. “Findable, Accessible, Interoperable, and Reusable (FAIR) Data from the Stan Mayfield Demonstration Cellulosic Biorefinery”. Oral presentation at the US Department of Energy’s Bioenergy Technology Systems Development and Integration Office
30. **W. J. Sagues**. 2022. “A Carbon-Negative Bioeconomy”. Oral presentation at NCSU Student Energy Club’s monthly meeting
31. **W. J. Sagues**. 2022. “Carbon Dioxide Removal via Engineered & Natural Biosystems”. Oral presentation at the University of Florida’s Biocomplexity Research Group’s monthly seminar series
32. **W. J. Sagues**. 2022. “Opportunities for CO2 Removal in the Pulping Industry” Oral presentation at the International Symposium on Wood, Fiber, and Pulping Chemistry (cancelled due to COVID reasons)
33. **W. J. Sagues**, J. Cunniffe*, L. Lower*, & J. Cheng. 2021 “Coupling Circularity with Negativity in Food & Agriculture Systems” Oral presentation at the American Society of Agricultural & Biological Engineers Member Hour
34. **W. J. Sagues** 2021 “Introduction to Biocarbon Utilization & Sequestration” Oral presentation for the Sustainable Materials & Technology program at NCSU
35. **W. J. Sagues**, T. Vook*, V. Rondon*, E. Woods*, J. Cunniffe*, & L. Lower*. 2021. “Going Carbon Negative – An Opportunity for Agricultural & Biological Engineers” Oral presentation at the American Society of Agricultural & Biological Engineers Annual North Carolina State Section Meeting
36. **W. J. Sagues** 2021 “The Grand Challenge of Carbon Sequestration” Oral presentation to the NCSU course E102: Engineering in the 21st Century
37. **W. J. Sagues** 2021 “Introduction to the Bioeconomy and Carbon Sequestration” Oral presentation to the Environmental Science program at North Carolina Central University
38. **W. J. Sagues** 2021 “Carbon Sequestering Building Materials” Oral presentation at the workshop on Carbon Accounting in Land Development, hosted by Dr. Bill Hunt at NCSU
39. **W. J. Sagues** 2021 “Emerging Opportunities for Biological Carbon Sequestration” Oral presentation at the Consortium for Advanced Bioeconomy Leadership Education (CABLE) Annual Conference
40. **W. J. Sagues** 2020. “Biocarbon Utilization & Sequestration” Oral presentation at Cotton Incorporated
41. **W. J. Sagues** 2020. “Integrating Carbon Capture, Utilization, & Sequestration into Pulp & Paper Mills” Oral presentation as Horizon Lecture Series Speaker at Kimberly-Clark
42. **W. J. Sagues** 2020. “Integrating Carbon Capture, Utilization, & Sequestration into Pulp & Paper Mills” Oral presentation at UC Berkeley & Carbon 180’s Conference on Bioenergy with Carbon Capture & Storage
43. **W. J. Sagues** 2020. “Scale-Up Data: A Hidden Asset” Oral presentation at the DOE Bioenergy Technology Office Data Workshop

Other Oral Presentations

** indicates a graduate or undergraduate student under Dr. Sagues’s advising*

1. E. Carrejo, **W. J. Sagues**. 2026. “Process Synthesis and Techno-Economic Analysis of Biomass-Derived CO_2 Valorization to Formic Acid via AI-Assisted BioSTEAM.” American Institute of Chemical Engineers (AIChE) Annual Meeting, Minneapolis, MN.
2. L. Lower, **W. J. Sagues**. 2026. “Biomass-Derived Graphite for Critical Mineral Supply Resilience”. American Society of Agricultural & Biological Engineers Annual International Meeting.
3. L. Lower, **W. J. Sagues**. 2026. “From Hide to Graphitic Carbon: Catalytic Graphitization of Leather Waste” American Society of Agricultural & Biological Engineers Annual International Meeting.
4. **W. J. Sagues**. 2025. “Bio-Based Battery Materials for Circular Energy Storage Systems” American Society of Agricultural & Biological Engineers Annual International Meeting.
5. L. Lower, **W. J. Sagues**. 2025. “Bio-Based Battery Materials for Circular Energy Storage Systems” Bioderived Materials and Chemicals in Circular Bioeconomy Systems Conference

6. **W. J. Sagues**. 2025. “Techno-Economic Screening to Assess the Feasibility of Bio-Electrochemical Reduction of CO2 to Formate” American Society of Agricultural & Biological Engineers Annual International Meeting.
7. L. Lower*, **W. J. Sagues**. 2025. “Sustainable Bio-Derived Graphite Anodes for Greener Lithium-Ion Batteries with Integrated Catalyst Recycling.” Electrochemical Society’s Annual Conference
8. V. R. Berrio*, A. Grunden, N. Crook. S. Salom, **W. J. Sagues**. 2025. “Homologous expression of formate dehydrogenase from Methylobacterium extorquens for carbon utilization technologies.” American Society of Agricultural & Biological Engineers Annual International Meeting
9. T. Islam*, J. Daystar, R. Venditti, **W. J. Sagues**. 2025. “Atmospheric Carbon Removal via Burial of Cotton Waste Biomaterials” American Society of Agricultural & Biological Engineers Annual International Meeting
10. L. Lower*, S. Park, **W. J. Sagues**. 2025. “Watt a Waste: Utilizing Hurricane Debris with Catalyst Recycling for Lithium-ion Battery Anodes” American Society of Agricultural & Biological Engineers Annual International Meeting
11. J. Cunniffe*, J. Cheng, **W. J. Sagues**. 2025. “Techno-Economic Assessment of Atmospheric Carbon Removal via Anaerobic Digestion of Biomass Waste.” American Society of Agricultural & Biological Engineers Annual International Meeting
12. E. Woods*, R. Cook, A. Woodley, **W. J. Sagues**. 2025. Alkaline Mineral Residues from Pulp Mills as a Sustainable and Economical Alternative to Lime Fertilizers. American Society of Agricultural & Biological Engineers Annual International Meeting
13. Jose Gonzalez-Aguirre, Shaikat Chandra Dey, **William Joe Sagues**, Zachary Combs, Steven Rowland, Abhijit Dutta, & Sunkyu Park. 2025. “Process Integration and Techno-Economic Analysis of Bio-Graphite and Hydrogen Production from Pyrolysis Bio-Oil with Iron Ore Reduction in the Steelmaking Industry.” American Institute of Chemical Engineers (AIChE) Annual Meeting
14. S. C. Dey, **W. J. Sagues**, S. Park. 2025. “Scalable Transformation of Pyrolysis Oil into Biographite Anode for Lithium-Ion Batteries”. American Institute of Chemical Engineers (AIChE) Annual Meeting
15. **W. J. Sagues**. 2024. “Bio-based battery material for circular energy storage systems”. American Institute of Chemical Engineers (AIChE) Annual Meeting
16. **W. J. Sagues**. 2024. “Flipped Composting of Cotton Textile Waste Materials” Cotton Beltwide Conference
17. M. R. Nimlos, S. M. Rowland, K. Iisa, A. Dutta, S. C. Dey, L. Lower*, **W. J. Sagues**, B. J. Tremolet de Villers, R. K. Bhardwaj, S. S. Kelley, B. Freel, G. Hopkins, T. Vries, T. Vries, M. Regula, Z. A. Combs, S. Park, C. Fagerholm. 2024. “Pyrolysis oil coking: producing high value carbon and renewable fuel” Oral presentation at the TC Biomass: International Conference on Thermochemical Conversion Science: Biomass & Municipal Solid Waste to RNG, Biofuels, & Chemicals.
18. E. Carrejo*, R. Wu, H. Jameel, F. Li, S. Park, W. J Sagues. 2024. “Decarbonizing Lime Kilns at Pulp Mills via Electrification.” Oral presentation at the American Chemical Society spring meeting
19. S. C. Dey, L. Lower*, **W. J. Sagues**, B. Tremolet, S. D. Han, M. R. Nimlos, S. S. Kelley, S. Park. 2024. “Low Temperature Processing of Bio-Oil for Graphite Production” Oral presentation at the American Institute of Chemical Engineers (AIChE) Annual Conference
20. **W. J. Sagues**. 2024. “Roads to Removal: A National Assessment of Biomass Carbon Removal & Storage (BiCRS)” Oral presentation at the American Society of Agricultural & Biological Engineers Annual International Meeting
21. L. Lower*, S. Rowland, M. Regula, Z. Combs, S. Park, T. Vries, T. Vries, M. Nimlos, and **W. J. Sagues**. 2024. “Valorizing Polycyclic Aromatic Hydrocarbons from BTX Production: a Pathway for Lithium-Ion Anode Materials and Sustainable Aviation Fuel” Oral and poster presentations at the American Society of Agricultural & Biological Engineers Annual International Meeting
22. V. R. Berrio*, E. Youngsteadt, M. Kirchner, D. Call, N. Crook, S. Salmon, A. Grunden, and **W. J. Sagues**. 2024. “Microbial assimilation of formic acid and C1 casebon metabolism via an ant-derived

community" Oral and poster presentations at the American Society of Agricultural & Biological Engineers Annual International Meeting

23. J. Cunniffe*, V. R. Berrio, S. Salmon, A. Grunden, N. Crook, and **W. J. Sagues**. 2024. "Techno-Economic Analysis of Industrial Enzyme Production and Purification" Oral and poster presentations at the American Society of Agricultural & Biological Engineers Annual International Meeting
24. S. M. Rowland, M. R. Nimlos, S. Chandra Dey, L. Lower*, **W. J. Sagues**, B. J. Tremolet de Villers, R. K. Bhardwaj, S. S. Kelley, B. Freel, G. Hopkins, T. Vries, T. Vries, M. Regula, Z. A. Combs, S. Park. 2024. Production of Battery-Grade Graphite from Fast- and Catalytic Fast Pyrolysis Oils. Production of Battery-Grade Graphite from Renewable Carbon Sources. Oral presentation at the Clearwater Clean Energy Conference
25. V. R. Berrio*, E. Youngsteadt, M. Kirchner, D. Call, N. Crook, S. Salmon, A. Grunden, and **W. J. Sagues**. 2024. "A Microbial Community from Formicine Ants with Potential for Formatotrophy" Oral and poster presentation at the Society for Industrial Microbiology (SIMB) Symposium on Biomaterials, Fuels, and Chemicals (SBFC)
26. E. Woods*, **W. J. Sagues**. 2024. "Biomass and Textile Waste Composting Coupled with CO2 Capture." Oral and poster presentation at the Society for Industrial Microbiology (SIMB) Symposium on Biomaterials, Fuels, and Chemicals (SBFC)
27. J. Cunniffe*, N. Lavoine, J. Wang, and **W. J. Sagues**. 2024. "Co-Production of a Crystalline Cellulose Material and Biofuels from CRISPR-Edited Biomass." Oral and poster presentation at the Society for Industrial Microbiology (SIMB) Symposium on Biomaterials, Fuels, and Chemicals (SBFC)
28. L. M. Lower*, **W. J. Sagues**, R. C. Sartor, J. J. Cheng. 2024. "Thermophilic Anaerobic Co-Digestion of Lemnaceae Biomass and Swine Wastewater for Biogas Production" Oral presentation at the International Water Association's World Conference on Anaerobic Digestion
29. **W. J. Sagues**, J. Cunniffe*, J. Wang, and N. Lavoine. 2023. "Co-production of crystalline cellulose and biofuels from poplar" Oral presentation at NC Department of Agriculture and Consumer Services Research Symposium.
30. E. Carrejo*, H. Jameel, F. Li, R. Wu, S. Park, **W. J. Sagues**. 2023. "Decarbonizing Lime Kilns at Pulp Mills Via Oxy-Fuel Combustion/Electrification" Oral presentation at American Institute of Chemical Engineers (AIChE) 2023 Annual Conference
31. S. C. Dey, L. Lower*, **W. J. Sagues**, B. Tremolet, S. D. Han, M. R. Nimlos, S. S. Kelley, S. Park. 2023. Oral presentation at "Pyrolysis Oil: A Promising Anode Precursor for Lithium-ion Batteries". American Institute of Chemical Engineers (AIChE) 2023 Annual Conference
32. **W. J. Sagues**, E. Woods*, V. R. Berrio, and Y. Qiu. 2023. "Carbon-negative biomaterials via engineered composting with carbon capture" Oral presentation at American Institute of Chemical Engineers (AIChE) 2023 Annual Conference
33. S. C. Dey, T. Vook*, **W. J. Sagues**, S.D. Han, M. Nimlos, S. S. Kelley, S. Park. 2022. "Catalytic Conversion of Bio-oil into Rechargeable Battery Anode" Oral & poster presentation at the 2022 Frontiers in Biorefining conference
34. S. C. Dey, **W. J. Sagues**, S. Park. 2022. "Iron-Catalyzed Conversion of Bio-Oil into Lithium-Ion Battery Anode." Oral presentation at the 28th North American Catalysis Society
35. T. Vook*, S. D. Han, S. Park, M. Nimlos, & **W. J. Sagues**. 2022. "Catalytic Graphitization of Biomass for Green Battery Anodes" TC Biomass Conference
36. T. Vook*, S. D. Han, S. Park, M. Nimlos, & **W. J. Sagues**. 2021 "Statistical Optimization of Catalytic Graphitization of Paper Towel Waste" American Society of Agricultural & Biological Engineers Annual International Meeting
37. **W. J. Sagues**, M. Yung, H. Jameel, M. Davis, B. Donohoe, M. Nimlos, and S. Park. 2021. "Catalytic Graphitization of Biomass for Green Battery Anodes" Oral presentation at the Institute of Biological Engineering's Annual Conference

38. **W. J. Sagues**, H. Jameel, S. Park, D. L. Sanchez. 2021. "Integrating CO2 Capture, Utilization, and Storage at Pulp & Paper Mills in the United States" Oral presentation at the Institute of Biological Engineering's Annual Conference
39. **W. J. Sagues**, S. D. Han, S. Park, & M. Nimlos. 2020. "Catalytic Graphitization of Biomass for Green Battery Anodes" 2020 AIChE Bioenergy Conference
40. **W. J. Sagues**, M. Yung, H. Jameel, M. Davis, B. Donohoe, M. Nimlos, and S. Park. 2020. "Catalytic Graphitization of Lignin for Green Battery Anodes" Oral presentation at the Society for Industrial Microbiology and Biotechnology's Symposium on Biomaterials, Fuels, and Chemicals (Cancelled due to COVID-19)
41. **W. J. Sagues**, M. Yung, H. Jameel, M. Davis, B. Donohoe, M. Nimlos, and S. Park. 2020. "Catalytic Graphitization of Biomass for Green Battery Anodes" Oral presentation at the Institute of Biological Engineering's Annual Conference (Cancelled due to COVID-19)
42. **W. J. Sagues**, H. Jameel, S. Park, D. L. Sanchez. 2020. "Integrating CO2 Capture, Utilization, and Storage at Pulp & Paper Mills in the United States" Oral presentation at the Institute of Biological Engineering's Annual Conference (Cancelled due to COVID-19)
43. **W. J. Sagues**, H. Jameel, S. Park, D. L. Sanchez. 2019. "Enhanced Carbon Dioxide Removal from Coupled Direct Air Capture-Bioenergy Systems" Oral presentation at the Applied Energy Symposium at MIT
44. **W. J. Sagues**, H. Jameel, S. Park. 2019. "Catalytic Graphitization of Lignocellulosic Biomass" Oral presentation at the ACS Annual Green Chemistry & Engineering Conference
45. **W. J. Sagues**, K. McCance, S. L. McAlexander, M. Blanchard, R. Venditti. 2019. "An Interdisciplinary Educational Program to Promote Interest in the Circular Bioeconomy" Oral presentation at the ACS Annual Green Chemistry & Engineering Conference
46. **W. J. Sagues**, Z. Tong. 2017. "Production of Phenolic Monomers and Free Sugars from Sweet Sorghum Bagasse via Fenton Modification & Supercritical Ethanol" Oral presentation at the American Society of Agricultural & Biological Engineers' Annual International Meeting
47. **W. J. Sagues**, Z. Tong. 2017. "A Ferric Catalyzed Process for the Conversion of Agro-Industrial Residues to Phenolic Monomers and Free Sugars" Oral presentation at the Florida Section of American Society of Agricultural & Biological Engineers' Annual Meeting
48. **W. J. Sagues**, Z. Tong. 2016. "Ironing out the kinks: A ferric catalyzed process for selective monomerization of lignin from whole biomass while leaving the cellulosic fraction in high purity" Oral presentation at the Technical Association of the Pulp and Paper Industry's International Bioenergy and Bioproducts Conference
49. **W. J. Sagues**, Z. Tong. 2016. "Overcoming the blend wall: Ethanol as a green solvent for thermochemical conversion of whole biomass into high-value aromatics and purified cellulose" Oral presentation at the American Society of Agricultural & Biological Engineers' Annual International Meeting
50. **W. J. Sagues**, Z. Tong. 2016. "A two-step process for the conversion of sorghum bagasse into monomeric aromatics and purified cellulose" Oral presentation at the Florida Center for Renewable Chemicals & Fuels
51. **W. J. Sagues**, I.U. Nieves, L.O. Ingram. 2014. "Lignocellulosic biorefinery process development and scale-up in the State of Florida" Oral presentation at the American Society of Agricultural and Biological Engineers' Florida Section Annual Conference

Selected Poster Presentations

** indicates a graduate or undergraduate student under Dr. Sagues's advising*

1. M. S. Reza, **W. J. Sagues**. 2025 "Upcycling Cotton-Polyester Textile Waste into High Quality Biochar and Activated Carbon for Energy Storage Applications" Bioderived Materials and Chemicals in Circular Bioeconomy Systems Conference

2. T. Islam*, **W. J. Sagues**. 2025. “Biomass Burial: A Near-Term, Scalable Carbon Removal Technology” Bioderived Materials and Chemicals in Circular Bioeconomy Systems Conference
3. L. Lower*, **W. J. Sagues**. 2025. “Sustainable Bio-Derived Graphite Anodes for Greener Lithium-Ion Batteries with Integrated Catalyst Recycling.” Electrochemical Society’s Annual Conference
4. **W. J. Sagues**, E. Boorom, C. Stec, N. Mathew, C. Kirch. 2025. “Industrial Symbiosis at NC State University” NC Environmental Stewardship Initiative (ESI) conference.
5. V. R. Berrio*, A. Grunden, N. Crook. S. Salom, **W. J. Sagues**. 2025. “Homologous expression of formate dehydrogenase from Methylobacterium extorquens for carbon utilization technologies.” American Society of Agricultural & Biological Engineers Annual International Meeting
6. T. Islam*, J. Daystar, R. Venditti, **W. J. Sagues**. 2025. “Atmospheric Carbon Removal via Burial of Cotton Waste Biomaterials” American Society of Agricultural & Biological Engineers Annual International Meeting
7. L. Lower*, S. Park, **W. J. Sagues**. 2025. “Watt a Waste: Utilizing Hurricane Debris with Catalyst Recycling for Lithium-ion Battery Anodes” American Society of Agricultural & Biological Engineers Annual International Meeting
8. J. Cunniffe*, J. Cheng, **W. J. Sagues**. 2025. Techno-Economic Assessment of Atmospheric Carbon Removal via Anaerobic Digestion of Biomass Waste. American Society of Agricultural & Biological Engineers Annual International Meeting
9. E. Woods*, R. Cook, A. Woodley, **W. J. Sagues**. 2025. Alkaline Mineral Residues from Pulp Mills as a Sustainable and Economical Alternative to Lime Fertilizers. American Society of Agricultural & Biological Engineers Annual International Meeting
10. M. S. Reza, N. Garland, A. Ferris, S. Razavi, J. Daystar, R. Venditti, V. Augustyn, F. Li, & **W. J. Sagues**. 2024. “Upcycling Cotton-Polyester Textile Waste into High Surface Area Carbon for Energy Storage Applications” Poster presentation at the TC Biomass: International Conference on Thermochemical Conversion Science: Biomass & Municipal Solid Waste to RNG, Biofuels, & Chemicals
11. L. Lower*, S. Rowland, M. Regula, Z. Combs, S. Park, T. Vries, T. Vries, M. Nimlos, and **W. J. Sagues**. 2024. “Valorizing Polycyclic Aromatic Hydrocarbons from BTX Production: a Pathway for Lithium-Ion Anode Materials and Sustainable Aviation Fuel” Oral and poster presentations at the American Society of Agricultural & Biological Engineers Annual International Meeting
12. V. R. Berrio*, E. Youngsteadt, M. Kirchner, D. Call, N. Crook, S. Salmon, A. Grunden, and **W. J. Sagues**. 2024. “Microbial assimilation of formic acid and C1 casebon metabolism via an ant-derived community” Oral and poster presentations at the American Society of Agricultural & Biological Engineers Annual International Meeting
13. J. Cunniffe*, V. R. Berrio*, S. Salmon, A. Grunden, N. Crook, and **W. J. Sagues**. 2024. “Techno-Economic Analysis of Industrial Enzyme Production and Purification” Oral and poster presentations at the American Society of Agricultural & Biological Engineers Annual International Meeting
14. E. Woods*, **W. J. Sagues**. 2024. “Carbon Dioxide Capture and Methane Emission Reduction in Composting” Poster presentation at the American Society of Agricultural & Biological Engineers Annual International Meeting
15. V. R. Berrio*, E. Youngsteadt, M. Kirchner, D. Call, N. Crook, S. Salmon, A. Grunden, and **W. J. Sagues**. 2024. “A Microbial Community from Formicine Ants with Potential for Formatotrophy” Oral and poster presentation at the Society for Industrial Microbiology (SIMB) Symposium on Biomaterials, Fuels, and Chemicals (SBFC)
16. E. Woods*, **W. J. Sagues**. 2024. “Biomass and Textile Waste Composting Coupled with CO2 Capture.” Oral and poster presentation at the Society for Industrial Microbiology (SIMB) Symposium on Biomaterials, Fuels, and Chemicals (SBFC)
17. J. Cunniffe*, N. Lavoine, J. Wang, and **W. J. Sagues**. 2024. “Co-Production of a Crystalline Cellulose Material and Biofuels from CRISPR-Edited Biomass.” Oral and poster presentation at the Society for Industrial Microbiology (SIMB) Symposium on Biomaterials, Fuels, and Chemicals (SBFC)

18. E Woods*, **WJ Sagues**. 2023. “Carbon dioxide removal via flipped composting” Poster presentation at the Society for Industrial Microbiology (SIMB) Symposium on Biomaterials, Fuels, and Chemicals (SBFC)
19. L Lower*, **WJ Sagues**, J Cheng. 2023. “Thermophilic anaerobic co-digestion of swine waste and lemnaceae for biogas production” Poster presentation at the Society for Industrial Microbiology (SIMB) Symposium on Biomaterials, Fuels, and Chemicals (SBFC)
20. J Cunniffe*, N Lavoine, W Yuan, J Wang, **WJ Sagues**. 2023. “Co-production of crystalline cellulose and biofuels from CRISPR-edited biomass” Poster presentation at the Society for Industrial Microbiology (SIMB) Symposium on Biomaterials, Fuels, and Chemicals (SBFC)
21. VR Berrio*, **WJ Sagues**, A Grunden, D Call, E Youngsteadt. 2023. “Formate discovery and evolution for CO2 utilization” Poster presentation at the Society for Industrial Microbiology (SIMB) Symposium on Biomaterials, Fuels, and Chemicals (SBFC)
22. S. C. Dey, T. Vook*, **W. J. Sagues**, S.D. Han, M. Nimlos, S. S. Kelley, S. Park. 2022. “Catalytic Conversion of Bio-oil into Rechargeable Battery Anode” Oral & poster presentation at the 2022 Frontiers in Biorefining conference
23. P. Seibert*, V. Rondon Berrio*, D. McKee*, **W. J. Sagues**. 2022. “Biological Conversion of Cotton Residues to Bioplastic & Proteins via Wild Fermentation”. Poster presentation at NCSU’s Undergraduate Research Symposium
24. **W. J. Sagues**, H. Jameel, S. Park, D. L. Sanchez. 2022. “Integrating Biomass Carbon Removal & Storage (BiCRS) in Chemical Pulp Mills” Gordon Research Conference on Carbon Removal
25. **W. J. Sagues**, D. Sanchez, H. Jameel, & S. Park. 2020. “Catalytic Graphitization of Biomass for Green Battery Anodes” 2020 AIChE Bioenergy Conference
26. **W. J. Sagues**, D. Sanchez, H. Jameel, & S. Park. 2020. “Integrating CO2 Capture, Utilization, & Sequestration at Kraft Pulp Biorefineries” 2020 AIChE Bioenergy Conference
27. **W. J. Sagues**, D. L. Sanchez, H. Jameel, and S. Park. 2020. “Integrating CO2 Capture, Utilization, & Storage at Pulp & Paper Mills in the United States” Poster presentation at the Society for Industrial Microbiology and Biotechnology’s Symposium on Biomaterials, Fuels, and Chemicals (Cancelled due to COVID-19)
28. **W. J. Sagues**, H. Bao, J. Nemenyi, H. Weaver, J. Zeng, Z. Tong. 2017 “Ironing out the kinks: A three-step ferric catalyzed process for monomeric aromatics and free sugars from agro-industrial residues” University of Florida’s Graduate Research Poster Symposium
29. J. Nemenyi, Z. Lai, **W. J. Sagues**, Z. Tong. 2017. “Supercritical Ethanol: The Superhero of Selective Lignin Depolymerization”. University of Florida’s Undergraduate Research Poster Symposium
30. **W. J. Sagues**, H. Bao, J. Nemenyi, H. Weaver, J. Zeng, Z. Tong. 2016 “Ironing out the kinks: A three-step ferric catalyzed process for monomeric aromatics and free sugars from whole biomass” Technical Association of the Pulp and Paper Industry’s International Bioenergy and Bioproducts Conference
31. **W. J. Sagues**, Z. Tong. 2016. “Ironing out the kinks: A two-step ferric catalyzed process for monomeric aromatics and purified cellulose from whole biomass” Poster presentation at the Society for Industrial Microbiology and Biotechnology’s Symposium on Biotechnology for Fuels and Chemicals
32. **W. J. Sagues**, Z. Tong. 2016. “Overcoming the blend wall: Ethanol as a green solvent for thermochemical conversion of whole biomass into high-value aromatics and purified cellulose” American Society of Agricultural & Biological Engineers’ Annual International Meeting
33. **W. J. Sagues**, I. U. Nieves, K. Gubicza, K. T Shanmugam, Z. Barta, and L. O. Ingram. 2015. “Techno-Economic Analysis of an Advanced Demonstration-Scale Biorefinery” University of Florida’s Graduate Research Symposium
34. **W. J. Sagues**, Z. Tong, H. Weaver, “One-Pot Reaction to Convert Agricultural Waste to Carbon-Negative Hydrocarbon Fuel Precursors” 2015. University of Florida’ Ag. & Bio. Engineering Poster Symposium