

William Joseph Sagues
wjsagues@ncsu.edu | 321-438-2589 | <https://www.sagueslab.com/>
Updated June, 2026

EDUCATION

PhD, Forest Biomaterials

2018 - 2020

North Carolina State University

MSc, Agricultural & Biological Engineering

2015 - 2017

University of Florida

MSc, Chemical Engineering

2015 - 2017

University of Florida

BSc, Agricultural & Biological Engineering

2009 - 2012

University of Florida

PROFESSIONAL APPOINTMENTS

Associate Professor

2026 - present

Assistant Professor

2020 - 2026

Principal Investigator of the Biocarbon Utilization & Sequestration (BUS) Laboratory

Biological & Agricultural Engineering

North Carolina State University

Vice Chair

2025 - present

Circular Bioeconomy Systems Institute (CBSI)

American Society of Agricultural & Biological Engineers (ASABE)

Founder & Chair

2022 - present

Bioprocess Startup Student Competition

American Society of Agricultural & Biological Engineers (ASABE)

Co-Founder

2023 - 2025

Flip Biosystems, Inc.

Graduate Student Research (SCGSR) Fellow

2020

Office of Science, U.S. Department of Energy

Host Site: National Renewable Energy Laboratory

Graduate Research Assistant

2018 - 2020

Department of Forest Biomaterials, North Carolina State University

Technology-to-Market Scholar

2018

Advanced Research Projects Agency (ARPA-E), U.S. Department of Energy

Graduate Research Assistant

2015 - 2017

Department of Agricultural & Biological Engineering, University of Florida

Department of Chemical Engineering, University of Florida

Senior Bioprocess Engineer

2014 - 2015

Bioprocess Engineer

2012 - 2014

Stan Mayfield Biorefinery, Cellulosic Research & Demonstration Plant
Florida Center for Renewable Chemicals & Fuels, University of Florida
In Partnership with Georgia-Pacific

PEER-REVIEWED PUBLICATIONS

*Denotes a graduate student for whom Dr. Sagues serves as committee chair and primary advisor

**Denotes a postdoctoral researcher for whom Dr. Sagues serves as primary advisor

***Denotes an undergraduate student for whom Dr. Sagues serves as primary advisor

Under peer review:

1. E. Woods*, I. Busch, N. M. Clauser**, J. Daystar, S. Pires, R. Venditti, M. Langholtz, & **W. J. Sagues**. 2026. “Spatially Explicit Techno-Economic and Environmental Assessment of Biomass Carbon Removal Pathways” *Environmental Science & Technology* (IF: 11.3)
2. J. Cuniffe*, 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)
3. 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” *Green Chemistry* (IF: 9.2)
4. 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)
5. 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. 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: 4.9) | <https://doi.org/10.1039/D5SU00814J>
2. 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>
3. 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>

4. 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>
5. 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>
6. 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>
7. 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>
8. 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>
9. 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>
10. 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>
11. 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>
12. 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>
13. 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>
14. 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>
15. 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>
16. 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>
17. 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>
 18. 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>
 19. 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>
 20. R. Wu**, E. Carrejo*, M. S. Reza**, E. Woods*, S. Razavi, S. Park, F. Lee, **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>
 21. 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>
 22. 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](https://doi.org/10.15376/biores.19.3.5074-5095)
 23. 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>
 24. 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>
 25. 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>
 26. 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>
 27. 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>
 28. 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>
 29. 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>

30. 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
31. **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>
32. **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>
33. **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>
34. 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>
35. **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>
36. **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>
37. **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>
38. 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>
39. 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>
40. 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>
41. 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, **William Joe Sagues** et al. *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, **William Joe Sagues** et al. *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. **W. J. Sagues**. 2026. “Advancing Circularity through Industrial Symbiosis” ASABE Resource. <https://bt.e-ditionsbyfry.com/publication/?i=859185&p=18&view=issueViewer>
2. **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

**Denotes a graduate student for whom Dr. Sagues serves as committee chair and primary advisor*

1. **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
2. **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.

SELECTED HONORS & AWARDS

1. Gale A. Holloway Professional Development Award (“Major Award”), American Society of Agricultural & Biological Engineering (ASABE), 2026
2. KIETS Climate Leaders Faculty Fellow, Kenan Institute of Engineering, Technology, & Science, 2022 – 2023, 2023 – 2024, & 2025 – 2026
3. Invited Author, Sustainability Talents Special Collection, *ChemSusChem* (IF: 7.5), 2025
4. Invited Author, Emerging Leaders Collection, *BioEnergy Research* (IF: 3.0) , 2025
5. Outstanding Young Faculty Member Award, Biological & Agricultural Engineering, NC State University, 2023
6. ‘Top Viewed Article’ award in recognition of being within top 10% of most-viewed papers, *ChemSusChem* (IF: 7.5), 2023
7. Superior Paper Award, *Journal of the ASABE*, 2023
8. Outstanding Researcher Award, Biological & Agricultural Engineering, NC State University, 2022
9. Goodnight Early Career Innovator, NC State University, 2022
10. 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)

**GRANTS FUNDED – RESEARCH, DEVELOPMENT, & DEMONSTRATION
JANUARY 2021 – PRESENT (TOTAL: \$29,383,967)**

* indicates interinstitutional grant

Lead Principal Investigator (Total: \$2,944,654)

1. *Assessing Impacts of System Boundaries on Biomass Carbon Removal & Storage*, Clean Air Task Force (CATF), 2026 – 2027, **\$125,000**. **PI: W. J. Sagues**
2. *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**
3. *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
4. *Valorizing Cotton Waste Materials*, Cotton Inc, 2026, **\$84,918**. **PI: W. J. Sagues**. Co-PIs: R. Venditti and A. Woodley
5. *Bioprocessing Research Support*, Burnham, 2026-2028, **\$100,000**. **PI: W. J. Sagues**
6. *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
7. *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
8. **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
9. *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
10. *Anaerobic Digestion of Industrial Organic Residues*, Burnham RNG, 2023-2025, **\$76,810**. **PI: W. J. Sagues**
11. *Bioprocessing Research Support*, Burnham, 2024, **\$100,000**. **PI: W. J. Sagues**
12. *Conversion of Cotton Textile Waste to Biochar and Compost*, Cotton Incorporated, 2023, **\$75,000**. **PI: W. J. Sagues**
13. KIETS Climate Leaders Program, Kenan Institute of Engineering, Technology, & Science, 2023 and 2024, **\$10,000** **PI: W. J. Sagues**
14. Goodnight Early Career Innovator Funds. 2022 – 2025. \$22,000 per year for research (**\$66,000** total). **PI: W. J. Sagues**
15. *Carbon Mineralization via Rock Quarry Fines*, Carolina SunRock, 2022, **\$25,004**. **PI: W. J. Sagues**, Co-PI: A. Woodley
16. *Electrifying Bioproducts via C1 Fermentation*, USDA, 2022-2023, Hatch Multi-State Grant, **\$5,000**. **PI: W. J. Sagues**
17. *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
18. *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
19. *Bioprocess Development for Pulp Liquor Fermentation*, Rayonier Advanced Materials, 2022-2024, **\$23,187**. **PI: W. J. Sagues**, Co-PIs: Hasan Jameel & Praveen Kolar

20. *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
21. **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.
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)

SELECTED MEDIA & PRESS RELEASES

1. W. J. Sagues quoted in “*New tech could squeeze wildfire risk, carbon from forest debris*” The Arizona Republic (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's work highlighted in “*Farm waste turned into battery-grade graphite could help US cut dependence on China*”. Interesting Engineering Magazine (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 States <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. 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>
7. 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/>
8. 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/>

TEACHING

North Carolina State University, 2021 – present

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

- c. Course Eval Scores: 4.74/5.00 (average of all responses across all semesters taught)
- d. Course Eval Comments:
 - i. *"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."*
 - ii. *"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 I learned something and comprehended it. We had a discussion class period that was very interesting and led 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 always returned in a timely manner and problems were explained."*
 - iii. *"None, honestly my favorite professor at state."*
- 2. **BAE 495/590: Engineering Properties of Biological Materials (1 credit, every other spring, co-instructor)**
 - a. 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.
 - b. 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.
 - c. Course Eval Scores: 4.78 / 5.00 (average of all responses across all semesters taught)
 - d. Course Eval Comments:
 - i. *"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."*
 - ii. *"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)**
 - a. Description: This course provides a concise, engaging, and well-structured introduction to strategies for reducing emissions and sequestering carbon.
 - b. 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.
 - c. Course Eval Scores: 4.75/5.00 (average of all responses across all semesters taught)
 - d. Course Eval Comments:

- i. *“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.”*
 - ii. *“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)**
 - a. **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.
 - b. **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.
 - c. **Course Eval Scores:** 4.70/5.00 (average of all responses across all semesters taught)
 - d. **Course Eval Comments:**
 - i. *“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.”*
 - ii. *“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**
 - a. **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.
 - b. **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.
 - c. **Link to access:** <https://campus.extension.org/enrol/index.php?id=1641>
2. **Biomass Conversion for Bioproducts & Bioenergy – Free online course**
 - a. **Description:** This course introduces students to the fundamental principles, technologies, and applications of biomass conversion for producing bioproducts and bioenergy.
 - b. **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.
 - c. **Link to access:** <https://campus.extension.org/enrol/index.php?id=1642>

MENTORING

Postdoctoral Advising

1) Edgar Carrejo, PhD, 2026 – present, 2) Jingjing Wang, PhD, 2026 – present, 3) Ethan Woods, PhD, 2025, 4) Sumon Reza, PhD, 2023 – 2025, 5) Shammaya Afroze, PhD, 2024 – 2025, 6) Yaojing Qi, PhD, 2022 – 2025, 7) Nate Garland, PhD, 2024, 8) Nicolas Clauser, PhD, 2022 – 2023, 9) Ruochen Wu, PhD, 2021 - 2022

Graduate Student Advising

PhDs in progress as Chair (Total = 5)

1. Ramesh Kalagnanam, BAE, NCSU, 2026 – 2029
2. Carly Sussman, BAE, NCSU, 2026 – 2030
3. Nora Sauers (Co-Chair), BAE, NCSU, 2025 – 2029
4. Tanvir Islam, BAE, NCSU, 2025 – 2029
5. Lillian Lower, BAE, NCSU, 2023 – 2027

PhD graduates as Chair (Total = 4)

1. Julia Cunniffe (direct-entry PhD from BS), BAE, NCSU, 2021 – 2025
2. Edgar Carrejo (co-chair), Forest Biomaterials, NCSU, 2021 – 2025
3. Vanessa Rondon Berrio, BAE, NCSU, 2021 – 2025
4. Ethan Woods (direct-entry PhD from BS), BAE, NCSU, 2021 – 2025

MS in progress as Chair (Total = 1)

1. Pablo Ortiz, BAE, NCSU, 2025 – 2028

MS graduates as Chair (Total = 3)

1. June Khongpatimakorn, BAE, 2022 – 2024
2. Lillian Lower (Co-Chair), BAE, NCSU, 2021 – 2023
3. Trevor Vook, BAE, NCSU, 2020 – 2022

PhDs in progress as Committee Member (Total = 8)

1. Alan Ferris, Materials Science and Engineering, 2024 – 2028
2. Rashid Imoro, Crop & Soil Science, NCSU, 2024 – 2028
3. Gavin Gaynor, Forest Biomaterials, NCSU, 2023 – 2026
4. Maria Higuera, Forestry & Environmental Resources, NCSU, 2023 – 2027
5. Jonathan Morizet-Davis, Forest Biomaterials, 2023 – 2027
6. Steven Pires, Forest Biomaterials, NCSU, 2022 – 2026
7. Nazrul Islam, Forest Biomaterials, NCSU, 2024 – 2028
8. Jose Gonzalez-Aguirre, Forest Biomaterials, NCSU, 2024 – 2028

PhD graduates as Committee Member (Total = 6)

1. Jingjing Wang, BAE, NCSU, 2022 – 2025
2. Shaikat Chandra Dey, Forest Biomaterials, NCSU, 2020 – 2024
3. Ishita Kamboj, Materials Science & Engineering, NCSU, 2020-2024
4. Hyeonji Park, Forest Biomaterials, NCSU, 2020 – 2023
5. Rodrigo Tello Buitrago, Forest Biomaterials, NCSU, 2018 – 2022
6. Eliezer Reyes Molina, Forest Biomaterials, NCSU, 2018 – 2022

MS graduates as Committee Member (Total = 2)

1. Nur-Al-Sarah Rafsan, Biological & Agricultural Engineering, NCSU, 2021 – 2023
2. Matthew Byington, Forest Biomaterials, NCSU, 2020 – 2022

Undergraduate Research Assistant Advising

Since 2021, sixteen undergraduate research assistants have been supported through paid research positions in Dr. Sagues' laboratory.

Selected Awards Received by Graduate Students for whom Dr. Sagues serves as Committee Chair and Primary Advisor

1. Lillian Lower (PhD Student): Graduate Outstanding Leadership Award, College of Agriculture and Life Sciences (CALS), NCSU, 2025
2. Vanessa Rondon Berrio (PhD Student): First place, Student Research *Poster* Competition, Society for Industrial Microbiology, Symposium on Bio-materials, fuels, and chemicals, 2024
3. Ethan Woods (PhD Student), William Walton and Emily Inscoe Stevens Fellowship for Plant, Soil, and Environmental Stewardship, NCSU, 2024
4. Julia Cunniffe (PhD Student), Graduate Student Sustainability Award, College of Agriculture and Life Sciences (CALS), NCSU, 2024
5. Vanessa Rondon Berrio & Julia Cunniffe (PhD Students), Presentation Excellence Awards, Annual International Meeting, American Society of Agricultural & Biological Engineers, 2023
6. Lillian Lower (PhD Student): Center for Environmental Farming Systems (CEFS) Graduate Fellow, NCSU, 2023 – 2024
7. Lillian Lower (PhD Student): First place, Student Research Poster Competition, Society for Industrial Microbiology (SIMB) Symposium on Bio-materials, fuels, and chemicals (SBFC), 2023
8. Julia Cunniffe (PhD Student): KIETS Climate Leaders Student Fellow, Kenan Institute of Engineering, Technology, & Science, 2022 – 2023

Student Organization Advising

1. Mentor, Senior Design Group in Dept. of Biological & Agricultural Engineering, NCSU, 2023-2024, 2024-2025, and 2025-2026
2. Mentor, Grand Challenges Scholar Program, NCSU, 2022 – present
3. Mentor, Graduate Student Association, Dept. of Biological & Agricultural Engineering, NCSU, 2021 – present
4. Mentor, CHE 497/498 Chemical Engineering Projects I & II, NCSU, 2024, 2026
5. Mentor, MBA 585: Current Topics in Biosciences Management, NCSU, 2022

SELECTED PROFESSIONAL SERVICE

Invited 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 Decarbonizing the Steel Industry (2021)
8. US DOE BETO Program on Utilizing Biorefinery Data (2020)

Invited Grant Proposal Reviewer

1. USDA SBIR/STTR Biofuels and Biobased Products (2024, 2026)
2. DOE Office of Science Distinguished Mentors for Workforce Development Award (2025)
3. USDA NIFA Commodity Grant Program (2025)
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)

Invited Manuscript Reviewer

Journal of Power Sources (2026), *iScience* (2022, 2026), *Biofpr: biofuels, bioproducts, and biorefining* (2020, 2021, 2022, 2025, 2026), *ACS Environmental Science & Technology (ES&T)* (2025), *Journal of Environmental Chemical Engineering* (2025), *Nature Reviews Earth & Environment* (2024), *Discover Applied Sciences* (2024), *ACS Sustainable Chemistry & Engineering* (2023), *ACS Applied Energy Materials* (2023), *Frontiers in Climate* (2021)

Institutional Leadership & Membership

1. Vice Chair, Circular Bioeconomy Systems Institute (CBSI), American Society of Agricultural & Biological Engineers (ASABE), 2025 - present
2. Founder & Chair, Bioprocess Startup Student Competition, American Society of Agricultural & Biological Engineers (ASABE), 2021 - present
3. Member, Public Relations & Recruitment Committee, Biological and Agricultural Engineering, 2023 – present
4. Mentor on Industrial Symbiosis Project, Campus as a Classroom Internship Program, Climate and Sustainability Academy, NCSU, 2025 - present
5. Member, Student Competition Committee P-120, American Society of Agricultural & Biological Engineers (ASABE), 2021 - present
6. Member, ASE-16, Engineering for Sustainability, American Society of Agricultural & Biological Engineers (ASABE), 2021 - present
7. Member, Search Committee: Department Head of Biological & Agricultural Engineering, NCSU, 2025
8. Mentor, Research and Educational Enhancement Projects (REEP) Scholars Program, NCSU, 2021 - 2022 & 2024 - 2025
9. Elected Member, American Society of Agricultural and Biological Engineers (ASABE) Nominating Committee, 2024 – 2026
10. Board Member, NCSU's Sustainability Fund, 2023 – 2025
11. Chair, Working Group 1, Circular Bioeconomy Systems Task Force, American Society of Agricultural & Biological Engineers (ASABE), 2021 - 2023

Conference Leadership

1. Chair & Moderator, Bioprocess Startup Student Competition, The American Society of Agricultural & Biological Engineers (ASABE) 2022, 2023, 2024, 2025, & 2026 Annual International Meetings
2. Session Chair and Convener, Society for Industrial Microbiology (SIMB) Symposium on Bio-materials, fuels, and chemicals (SBFC), 2026

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. Chair, Graduate Student Oral Presentations & Rapid Fire Poster Presentations, Society for Industrial Microbiology (SIMB) Symposium on Bio-materials, fuels, and chemicals (SBFC), 2024
5. Organizer and Moderator, Workshop on Circular Bioeconomy Systems, The American Society of Agricultural & Biological Engineers (ASABE) 2022 Annual International Meeting
6. Symposia Director, The American Chemical Society (ACS) Green Chemistry Institute's Annual Green Chemistry & Engineering Conference, 2021

SELECTED PRESENTATIONS

Dr. Sagues has delivered more than 125 total presentations, including more than 40 invited presentations, on circular bioeconomy systems, carbon-negative bioprocessing, and biocarbon materials. These presentations include keynote lectures, invited university and agency seminars, industry-facing talks, and workshop presentations for organizations including DOE, USDA, NSF, CATF, ASABE, AIChE, ACS, & SIMB. A small selection of invited presentations is listed below.

Selected Invited Presentations

1. **W. J. Sagues.** 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).
2. **W. J. Sagues.** 2025. "Upcycling Cotton Textile Waste into High Quality Biochar and Activated Carbon for Energy Storage Applications" Cotton Beltwide Conference
3. **W. J. Sagues.** 2024. "Roads to Removal: Opportunities for Carbon Removal in North Carolina" UNC Clean Tech Summit
4. **W. J. Sagues.** 2024. "Circular Battery Anodes via Catalytic Graphitization of Biomass" NSF workshop on FEWSUS: Food-Energy-Water Bioeconomies for Net-Zero Transition
5. **W. J. Sagues.** 2024. "Emerging Biomass Carbon Removal & Storage Technologies" Seminar for the Clean Air Task Force (CATF)
6. **W. J. Sagues.** 2024. "Biocarbon Flow Capacitors" US Department of Energy (DOE) Advanced Research Projects Agency – Energy (ARPA-E)'s Carbon Harvesting Workshop
7. **W. J. Sagues.** 2023. "The Shifting Role of Bioproducts in Circular Systems and the Importance of Interdisciplinarity" American Society of Agricultural & Biological Engineers (ASABE) Circular Bioeconomy Systems Day as part of the Annual International Meeting (AIM)
8. **W. J. Sagues.** 2022. "Bioeconomy Supply Chains & Conversion Processes for Carbon Removal". Oral presentation at US Department of Energy (DOE) Advanced Research Projects Agency – Energy (ARPA-E)'s Workshop on Carbon Farming
9. **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 (DOE) Bioenergy Technology Systems Development and Integration Office