RESEARCH PROFILE
Mark Mba Wright, Professor of Mechanical Engineering, Iowa State University. Research interests include energy systems, biomass conversion, process design, techno-economic analysis, and life cycle assessment.

FACULTY VITA

Date: 5/25/26
Name: Mark Mba Wright
Department: Mechanical Engineering
Current Rank/Title: Professor

I. BACKGROUND, PROFESSIONAL EXPERIENCE AND RECOGNITIONS

A. Education

IOWA STATE UNIVERSITY
Doctor of Philosophy in Mechanical Engineering
Minor in Chemical Engineering
Graduation: Fall 2010

IOWA STATE UNIVERSITY
Master of Science in Mechanical Engineering
Master of Science in Biorenewable Resources and Technologies
Graduation: Summer 2008

IOWA STATE UNIVERSITY
Bachelor of Science Degree in Mechanical Engineering
Graduation: Spring 2007

B. Academic Appointments

IOWA STATE UNIVERSITY Professor, Department of Mechanical Engineering
Director of Graduate Education, Energy Systems Engineering,
April 2025 - Present

IOWA STATE UNIVERSITY
Associate Professor, Department of Mechanical Engineering
Director of Graduate Education, Energy Systems Engineering,
June 2018 - April 2025

IOWA STATE UNIVERSITY
Assistant Professor, Department of Mechanical Engineering
August 2012 - June 2018

MASSACHUSETTS INSTITUTE OF TECHNOLOGY
Post-Doctoral Research Associate
January 2011 - August 2012

IOWA STATE UNIVERSITY
Graduate Research Associate
Fall 2006 - Fall 2010

C. Other Professional Employment

D. Honors and Awards

American Institute of Chemical Engineering Sustainable Engineering Forum Service Award (2023)
Interdisciplinary Team Research Award (2022)
Black and Veatch "Building a World of Difference" Faculty Fellow (2014-2017)
BIO World Congress George Washington Carver Award (2009)
Iowa State University Research Excellence Award (2008)

II. SCHOLARSHIP AND RESEARCH/CREATIVE ACTIVITIES

A. Scholarship

 # Denotes any publication derived from the candidate's thesis/dissertation.
⁺ Denotes student co-author.
Additional symbols may be used – please define.
Include DOIs for products where applicable. As applicable, indicate which works of scholarship occurred at ISU, and which occurred after last advancement.

1. Articles in Peer-Reviewed Journals – In Print or Accepted

1. Mba Wright, Mark.* Shielding PEM Electrolysers from Real-World Water. Nature Catalysis 2026, 9 (1), 7–8.

2. Dubey, P.; Cortes-Pena, Y. R.; Alvear, M.; $Alikhani, Z.; Hermans, I.; Zavala Tejeda, V.; Mba Wright, Mark.* Data-Driven Approaches to Understand the Economic and Environmental Impacts of Fluid Catalytic Cracking Catalyst Performance for Plastic Upcycling. ACS Sustainable Chemistry & Engineering 2026.

3. Lorenzo, D.; $Abbaspour, A.; Ouahabi, Y. R.; Mba Wright, Mark.* Kinetic-Based Techno-Economic and Life Cycle Assessment of Slaughterhouse Waste Co-Digestion for Renewable Natural Gas Production. Chemical Engineering Journal 2026, 173365.

4. $Tajipour, M.; Jiang, B.; Penny, L.; Dubey, P.; Wabiszewski, H.; Zhang, F.; Foston, M.; Mba Wright, Mark.* Lifecycle Cost, Environmental, and Machine-Learning Value Assessment for Synthetic Spider Silk Production from E. coli. Green Chemistry 2026.

5. Mate, M.; Wang, K.; Li, T.; Zhang, X.; Mba Wright, Mark; Zhu, L.; Gao, X. Achieving Negative Emissions through Combustion-Based Bioenergy with Carbon Capture and Storage in China: A Plant-Level Techno-Economic Analysis. Energy 2025, 137641.

6. $Wild, K.; Dominguez, J. C.; Schulte Moore, L.; Mba Wright, Mark.* Advancing the Predictive Techno-Economic and Lifecycle Assessment of Prairie Grass and Manure Co-Digestion for Renewable Natural Gas Applications. Frontiers in Bioengineering and Biotechnology 2025, 13, 1651510.

7. $Maghfuri, A. M.; Wang, Yu; Mba Wright, Mark.* Comparative Study of Climate Impacts on the Optimal Allocation and Dispatch of Renewable Energy Systems under Saudi Arabia's 2030 Vision. Sustainable Energy Technologies and Assessments 2025, 82, 104459.

8. $Maghfuri, A. M.; $Mosalpuri, M.; Wang, Yu; Li, W.; Mba Wright, Mark.* Electrochemical Systems and Machine Learning for Sustainable Wastewater Treatment. Journal of Cleaner Production 2025, 522, 146305.

9. $Khatun, M. S.; Ganguly, A.; Wang, Z.-W.; Zhang, X.; Mba Wright, Mark.* Technoeconomic and Life Cycle Assessment of a Modular Bioprocess System for Producing Polyhydroxyalkanoates from Food Waste via Heterogeneous Fermentation. Journal of Cleaner Production 2025, 537, 147224.

10. Dubey, P.; $Gnangbe, S.; Mba Wright, Mark.* Enhancing Carbon Removal via Scalable On-Site Pyrolysis and Well-Plugging Systems. Energy Conversion and Management 2025, 341, 119980.

11. Ponukumati, A.; Carr, R.; [$]Ebrahimpourboura, Z.; Hu, Y.; Narani, A.; Gao, Y.; Shang, Z.; Krishnamurthy, A.; **Mba Wright, Mark***; Seok Moon, T.; others. Microbial Upgrading of Lignin Depolymerization: Enhancing Efficiency with Lignin-First Catalysis. *ChemSusChem* 2025, 18 (8), e202400954.

12. [$]Wild, K.; Rahic, E.; Schulte, L.; **Mba Wright, Mark***. Techno-Economic and Environmental Assessment of Converting Mixed Prairie to Renewable Natural Gas with Co-Product Hydroxycinnamic Acid. *Biofuels, Bioproducts and Biorefining* 2025, 19 (2), 288-304.

13. [$]Ebrahimpourboura, Z.; Mosalpuri, M.; Baltrusaitis, J.; Dubey, P.; **Mba Wright, Mark***. Emerging Trends in Sustainable Energy System Assessments: Integration of Machine Learning with Techno-Economic Analysis and Lifecycle Assessment. 2025 *Sustainability Science and Technology* .

14. [$]Mosalpuri, M.; Toor, F.; **Mba Wright, Mark***. Techno-Economic Analysis of a Solar Thermophotovoltaic System for a Residential Building. *Journal of Photonics for Energy* 2024, 14 (4), 042404.

15. [$]Ebrahimpourboura, Z.; Mosalpuri, M.; Yang, C.; Ponukumati, A.; Stephenson, C.; Foston, M.; **Mba Wright, Mark***. Comparative Techno-Economic and Life Cycle Assessment of Electrocatalytic Processes for Lignin Valorization. *Green Chemistry* 2024, 26 (22), 11303-11315.

16. Dubey, P.; Schulte, L. A.; **Mba Wright, Mark***. The Economic and Environmental Case for Cattle Manure and Prairie Grass-Derived Sustainable Aviation Fuel. *Energy & Fuels* 2024, 38 (21), 20721-20731.

17. **Mba Wright, Mark***; Tan, E. C.; Tu, Q.; Martins, A.; Parvatke, A. G.; Yao, Y.; Sunol, A.; Smith, R. L. Life Cycle Inventory Availability: Status and Prospects for Leveraging New Technologies. *ACS Sustainable Chemistry & Engineering* 2024, 12 (NREL/JA-5100-89462).

18. Sanchez Moran, E.[$]; Prodius, D.; Nlebedim, I. C.; **Mba Wright, Mark***. Rare-Earth Elements Recovery from Electronic Waste: Techno-Economic and Life Cycle Analysis. *ACS Sustainable Chemistry & Engineering* 2024, 12 (38), 14164-14172.

19. Kiehbadroudinezhad, M.; Merabet, A.; Al-Durra, A.; Hosseinzadeh-Bandbafha, H.; **Mba Wright, Mark***; El-Saadany, E. Towards a Sustainable Environment and Carbon Neutrality: Optimal Sizing of Standalone, Green, Reliable, and Affordable Water-Power Cogeneration Systems. *Science of the Total Environment* 2024, 912, 168668.

20. Luo, Y.; Razzaq, M. E. A.; Qu, W.; Mohammed, A. A.; Aui, A.[$]; Zobeiri, H.; **Mba Wright, Mark***; Wang, X.; Bai, X. Introducing Thermo-Mechanochemistry of Lignin Enabled the Production of High-Quality Low-Cost Carbon Fiber. *Green Chemistry* 2024, 26 (6), 3281-3300.

21. Contreras, M.; **Mba Wright, Mark***; Wulf, C.; Stanier, C. O.; Mubeen, S. Technoeconomic Analysis of Photoelectrochemical Hydrogen Production from Desalination Waste Brine Using Concentrated Solar Flux. *International journal of hydrogen energy* 2024, 49, 360-372.

22. Radhakrishnan, H.; Gnangbe, S.[$]; Duereh, A.; Uday, S. U. I.; Hu, H.; Hu, H.; **Mba Wright, Mark***; Bai, X.; others. Non-Equilibrium Plasma Co-Upcycling of Waste Plastics and CO 2 for Carbon-Negative Oleochemicals. *Green Chemistry* 2024, 26 (16), 9156-9175.

23. **Mba Wright, Mark***; Tan, E. C.; Tu, Q.; Martins, A.; Parvatker, A. G.; Yao, Y.; Sunol, A.; Smith, R. L. Life Cycle Inventory Availability: Status and Prospects for Leveraging New Technologies. *ACS Sustainable Chemistry & Engineering* 2024, 12 (34), 12708-12718.

24. Edmonson, A.; Lin, Y.; **Mba Wright, Mark***; Byrne, D.; Ding, L.; Shi, J. Comparative Life Cycle Assessment of Woody Biomass Processing: Air Classification, Drying, and Size Reduction Powered by Bioelectricity versus Grid Electricity. *Biomass Conversion and Biorefinery* 2024, 1-10.

25. Baltrusaitis, J.; Bakshi, B.; Chojnacka, K.; Chuck, C. J.; Coppens, M.-O.; Edge, J. S.; Harper, G.; Hsiao, B. S.; Li, H.; **Mba Wright, Mark***; others. Sustainability Science and Technology in 2024 and beyond: Equitable Publishing Aligned with United Nations' Sustainable Development Goals. *Sustainability Science and Technology* 2024, 1 (1), 010201.

26. Olafasakin, O.[$], Audia, E. M., **Mba Wright, Mark***, Tyndall, J. C., & Schulte, L. A. (2024). Techno-economic and life cycle analysis of renewable natural gas derived from anaerobic digestion of grassy biomass: A United States Corn Belt watershed case study. *GCB Bioenergy*, 16(6), e13164.

27. Martin, I. M.[$], Aui, A., Dubey, P., Schulte, L. A., & **Mba Wright, Mark*** (2024). Optimal production and dispatch of renewable natural gas, electricity, and fertilizer in municipal-scale anaerobic digestion supply chains. *BioEnergy Research*, 1-13.

28. Ma, J., Tominac, P. A., Aguirre-Villegas, H. A., Olafasakin, O. O., Mba Wright, M., Benson, C. H., Huber, G. W., & Zavala, V. M. (2023). Economic evaluation of infrastructures for thermochemical upcycling of post-consumer plastic waste. *Green Chemistry*, 25(3), 1032-1044.

29. Olafasakin, O.[$], Ma, J., Bradshaw, S. L., Aguirre-Villegas, H. A., Benson, C., Huber, G. W., Zavala, V. M., & **Mba Wright, Mark*** (2023). Techno-economic and life cycle assessment of standalone Single-Stream material recovery facilities in the United States. *Waste Management*, 166, 368-376.

30. Uddin, M. M.[$], & **Mba Wright, Mark*** (2023). Anaerobic digestion fundamentals, challenges, and technological advances. *Physical Sciences Reviews*, 8(9), 2819-2837. De Gruyter.

31. Jasper, M., Rafati, N., Schimmel, K., Shahbazi, A., Li, F., Mba Wright, M., & Wang, L. (2022). Carbon negative transportation fuels. A techno-economic-environmental analysis of biomass pathways for transportation. *Energy Conversion and Management: X*, 14, 100208.

32. Kim, K. H., Jin, X., Ji, A., Aui, A.[$], Mba Wright, M., Yoo, C.-J., Choi, J.-W., Ha, J.-M., Kim, C. S., Yoo, C. G., & others (2022). Catalytic conversion of waste corrugated cardboard into lactic acid using lanthanide triflates. *Waste Management*, 144, 41-48.

33. Li, H., Aguirre-Villegas, H. A., Allen, R. D., Bai, X., Benson, C. H., Beckham, G. T., Bradshaw, S. L., Brown, J. L., Brown, R. C., Cecon, V. S., Mba Wright, M., & others (2022). Expanding plastics recycling technologies: chemical aspects, technology status and challenges. *Green Chemistry*, 24(23), 8899-9002.

34. Ganguly, A.[$], Brown, R. C., & Mba Wright, M. (2022). Investigating the impacts of feedstock variability on a carbon-negative autothermal pyrolysis system using machine learning. *Frontiers in Climate*, 4, 842650. Frontiers Media SA.

35. Uddin, M. M.[$], & Mba Wright, M. (2022). Techno-economic and environmental impact assessment of using corn stover biochar for manure derived renewable natural gas production. *Applied Energy*, 321, 119376.

36. Ganguly, A.[$], Brown, R. C., & **Mba Wright, Mark*** (2022). Techno-economic and greenhouse gas emission assessment of carbon negative pyrolysis technology. *Green Chemistry*, 24(23), 9290-9302.

37. Pascoli, D. U., Aui, A.[$], Frank, J., Therasme, O., Dixon, K., Gustafson, R., Kelly, B., Volk, T. A., & Mba Wright, M. (2022). The United States bioeconomy at the intersection of technology, policy, and education. *Biofuels, Bioproducts and Biorefining*, 16(1), 9-26.

38. Liu, H., Agrawal, N., Ganguly, A.[$], Chen, Y., Lee, J., Yu, J., Huang, W., Mba Wright, M., Janik, M. J., & Li, W. (2022). Ultra-low voltage bipolar hydrogen production from biomass-derived aldehydes and water in membrane-less electrolyzers. *Energy & Environmental Science*, 15(10), 4175-4189.

39. Aui, A.[$], Wang, Y., & **Mba Wright, Mark*** (2021). Evaluating the economic feasibility of cellulosic ethanol: A meta-analysis of techno-economic analysis studies. *Renewable and Sustainable Energy Reviews*, 145, 111098.

40. Zhang, J., Lu, C., Feng, H., Hennessy, D., Guan, Y., & Mba Wright, M. (2021). Extreme climate increased crop nitrogen surplus in the United States. *Agricultural and Forest Meteorology*, 310, 108632.

41. Olafasakin, O.[$], Chang, Y.%, Passalacqua, A., Subramaniam, S., Brown, R. C., & Mba Wright, M. (2021). Machine learning reduced order model for cost and emission assessment of a pyrolysis system. *Energy & Fuels*. 35(12), 9950-9960.

42. Qi, F.[$], & **Mba Wright, Mark*** (2020). A discrete element modeling of biomass fast pyrolysis in a double auger reactor. *International Journal of Heat and Mass Transfer*, 150, 118381.

43. Johnston, P. A., Zhou, H., Aui, A.[$], Mba Wright, M., Wen, Z., & Brown, R. C.# (2020). A lignin-first strategy to recover hydroxycinnamic acids and improve cellulosic ethanol production from corn stover. *Biomass and Bioenergy*, 138, 105579.

44. Lisowyj, M., & **Mba Wright, Mark*** (2020). A review of biogas and an assessment of its economic impact and future role as a renewable energy source. *Reviews in Chemical Engineering*, 36(3), 401-421.

45. Ganguly, A.[$], Martin, I. M., Brown, R. C., & **Mba Wright, Mark*** (2020). Application of hydroprocessing, fermentation, and anaerobic digestion in a carbon-negative pyrolysis refinery. *ACS Sustainable Chemistry and Engineering*, 8(44), 16413-16421.

46. Saraeian, A., Aui, A.[$], Gao, Y., Mba Wright, M., Foston, M., & Shanks, B. H. (2020). Evaluating lignin valorization: Via pyrolysis and vapor-phase hydrodeoxygenation for production of aromatics and alkenes. *Green Chemistry*, 22(8), 2513-2525.

47. Li, W.[$], & **Mba Wright, Mark*** (2020). Negative emission energy production technologies: A techno-economic and life cycle analyses review. *Energy Technology*, 8(11), 2000463.

48. Uddin, M. M.[$], Simson, A., & **Mba Wright, Mark*** (2020). Techno-economic and greenhouse gas emission analysis of dimethyl ether production via the bi-reforming pathway for transportation fuel. *Energy*, 211, 118491.

49. Rover, M. R., Aui, A.[$], Mba Wright, M., Smith, R. G., & Brown, R. C.# (2019). Production and purification of crystallized levoglucosan from pyrolysis of lignocellulosic biomass. *Green Chemistry*, 21(21), 5980-5989.

50. Kim, K. H., Daugaard, T. J., Smith, R., Mba Wright, M., & Brown, R. C. (2019). Recovery of resin acids from fast pyrolysis of pine. *Journal of Analytical and Applied Pyrolysis*, 138, 132-136.

51. Li, W.[$], Dumortier, J., Dokoohaki, H., Miguez, F. E., Brown, R. C., Laird, D., & **Mba Wright, Mark*** (2019). Regional techno-economic and life-cycle analysis of the pyrolysis-bioenergy-biochar platform for carbon-negative energy. *Biofuels, Bioproducts and Biorefining*.

52. Aui, A.[$], Li, W.[$], & **Mba Wright, Mark*** (2019). Techno-economic and life cycle analysis of a farm-scale anaerobic digestion plant in Iowa. *Waste Management*, 89, 154-164.

53. Li, W.[$], Ghosh, A., Bbosa, D.[$], Brown, R., & **Mba Wright, Mark*** (2018). Comparative techno-economic, uncertainty and life cycle analysis of lignocellulosic biomass solvent liquefaction and sugar fermentation to ethanol. *ACS Sustainable Chemistry and Engineering*, 6(12), 16515-16524.

54. Daugaard, T. J., Dalluge, D. L., Brown, R. C., & **Mba Wright, Mark*** (2018). Effect of thermophysical properties of heat carriers on performance of a laboratory-scale auger pyrolyzer. *Fuel Processing Technology*, 176, 182-189.

55. Wang, Y., Cheng, M.-H., & Mba Wright, M. (2018). Lifecycle energy consumption and greenhouse gas emissions from corncob ethanol in China. *Biofuels, Bioproducts and Biorefining*, 12(6), 1037-1046.

56. Bbosa, D.[$], **Mba Wright, Mark***, & Brown, R. C. (2018). More than ethanol: a techno-economic analysis of a corn stover-ethanol biorefinery integrated with a hydrothermal liquefaction process to convert lignin into biochemicals. *Biofuels, Bioproducts and Biorefining*, 12(3), 497-509.

57. Qi, F.[$], & **Mba Wright, Mark*** (2018). Particle scale modeling of heat transfer in granular flows in a double screw reactor. *Powder Technology*, 335, 18-34.

58. Sharma, R.[$], Lamsal, B. P., & **Mba Wright, Mark*** (2018). Performance of bacillus subtilis on fibrous biomass sugar hydrolysates in producing biosurfactants and techno-economic comparison. *Bioprocess and Biosystems Engineering*, 41(12), 1817-1826.

59. Dang, Q., **Mba Wright, Mark***, & Li, W. (2018). Technoeconomic Analysis of a Hybrid Biomass Thermochemical and Electrochemical Conversion System. *Energy Technology*, 6(1), 178-187.

60. Tao, L., Yan, T.-H., Li, W., Zhao, Y., Zhang, Q., Liu, Y.-M., Mba Wright, M., Li, Z.-H., He, H.-Y., & Cao, Y. (2018). Toward an integrated conversion of 5-

hydroxymethylfurfural and ethylene for the production of renewable p-xylene. *Chem*, 4(9), 2212-2227.

61. Dang, Q., Ou, L., Thomas, A. %, Brown, R., & **Mba Wright, Mark*** (2017). Advances in the life cycle assessment of biorenewable technologies. *Advances in Environmental Research*, 55, 1-30.

62. Liu, G., Mba Wright, M., Zhao, Q., Brown, R. C., Wang, K., & Xue, Y. (2016). Catalytic pyrolysis of amino acids: Comparison of aliphatic amino acid and cyclic amino acid. *Energy Conversion and Management*, 112, 220-225.

63. Hu, W.[$], Dang, Q., Rover, M., Brown, R. C., & **Mba Wright, Mark*** (2016). Comparative techno-economic analysis of advanced biofuels, biochemicals, and hydrocarbon chemicals via the fast pyrolysis platform. *Biofuels*, 7(1), 87-103.

64. Dang, Q., Hu, W., Rover, M., Brown, R. C., & **Mba Wright, Mark*** (2016). Economics of biofuels and bioproducts from an integrated pyrolysis biorefinery. *Biofuels, Bioproducts and Biorefining*, 10(6), 790-803.

65. Liu, G., Mba Wright, M., Zhao, Q., & Brown, R. C. (2016). Hydrocarbon and ammonia production from catalytic pyrolysis of sewage sludge with acid pretreatment. *ACS Sustainable Chemistry and Engineering*, 4(3), 1819-1826.

66. Li, Y., Hu, G., & **Mba Wright, Mark*** (2015). An optimization model for sequential fast pyrolysis facility location-allocation under renewable fuel standard. *Energy*, 93, 1165-1172.

67. Liu, G., **Mba Wright, Mark***, Zhao, Q., & Brown, R. C. (2015). Catalytic fast pyrolysis of duckweed: Effects of pyrolysis parameters and optimization of aromatic production. *Journal of Analytical and Applied Pyrolysis*, 112, 29-36.

68. Daugaard, T., Mutti, L. A., **Mba Wright, Mark***, Brown, R. C., & Componation, P. (2015). Learning rates and their impacts on the optimal capacities and production costs of biorefineries. *Biofuels, Bioproducts and Biorefining*, 9(1), 82-94.

69. Simakov, D. S. A., **Mba Wright, Mark***, Ahmed, S., Mokheimer, E. M. A., & Roman-Leshkov, Y. (2015). Solar thermal catalytic reforming of natural gas: A review on chemistry, catalysis and system design. *Catalysis Science and Technology*, 5(4), 1991-2016.

70. Ou, L.[$], Thilakaratne, R., Brown, R. C., & **Mba Wright, Mark*** (2015). Techno-economic analysis of transportation fuels from defatted microalgae via hydrothermal liquefaction and hydroprocessing. *Biomass and Bioenergy*, 72, 45-54.

71. Li, B.[$], Ou, L., Dang, Q., Meyer, P., Jones, S., Brown, R., & **Mba Wright, Mark*** (2015). Techno-economic and uncertainty analysis of in situ and ex situ fast pyrolysis for biofuel production. *Bioresource Technology*, 196, 49-56.

72. Dang, Q., **Mba Wright, Mark***, & Brown, R. C. (2015). Ultra-low carbon emissions from coal-fired power plants through bio-oil co-firing and biochar sequestration. *Environmental Science and Technology*, 49(24), 14688-14695.

73. Brown, T. R.[$], & **Mba Wright, Mark*** (2014). A framework for defining the economic feasibility of cellulosic biofuel pathways. *Biofuels*, 5(5), 579-590.

74. Thilakaratne, R., **Mba Wright, Mark***, & Brown, R. C. (2014). A techno-economic analysis of microalgae remnant catalytic pyrolysis and upgrading to fuels. *Fuel*, 128, 104-112.

75. Dalluge, D. L., Daugaard, T., Johnston, P., Kuzhiyil, N., Mba Wright, M., & Brown, R. C. (2014). Continuous production of sugars from pyrolysis of acid-infused lignocellulosic biomass. *Green Chemistry*, 16(9), 4144-4155.

76. Zhang, Y., & **Mba Wright, Mark*** (2014). Product selection and supply chain optimization for fast pyrolysis and biorefinery system. *Industrial and Engineering Chemistry Research*, 53(51), 19987-19999.

77. Mba Wright, M., Roman-Leshkov, Y.*, & Green, W. H. (2012). Investigating the techno?economic trade?offs of hydrogen source using a response surface model of drop? in biofuel production via bio?oil upgrading. *Biofuels, Bioproducts and Biorefining*, 6(5), 503-520.

78. **Mba Wright, Mark***#, Daugaard, D. E., Satrio, J. A., & Brown, R. C. (2010). Techno-economic analysis of biomass fast pyrolysis to transportation fuels. *Fuel*, 89(SUPPL. 1).

79. Anex, R. P., Aden, A., Kazi, F. K., Fortman, J., Swanson, R. M., Mba Wright, M., Satrio, J. A., Brown, R. C., Daugaard, D. E., Platon, A., Kothandaraman, G., Hsu, D. D., & Dutta, A. (2010). Techno-economic comparison of biomass-to-transportation fuels via pyrolysis, gasification, and biochemical pathways. *Fuel*, 89(SUPPL. 1).

80. **Mba Wright, Mark***#, Brown, R. C., & Boateng, A. A. (2008). Distributed processing of biomass to bio-oil for subsequent production of Fischer-Tropsch liquids. *Biofuels, Bioproducts and Biorefining*, 2(3), 229-238.

81. **Mba Wright, Mark***#, & Brown, R. C. (2007). Comparative economics of biorefineries based on the biochemical and thermochemical platforms. *Biofuels, Bioproducts and Biorefining*, 1(1), 49-56.

82. **Mba Wright, Mark***#, & Brown, R. C. (2007). Establishing the optimal sizes of different kinds of biorefineries. *Biofuels, Bioproducts and Biorefining*, 1(3), 191-200.

2. Articles in Peer-Reviewed Journals – In Review

1. [$]Amponsah, J.; Dubey, P.; Shi, J.; **Mba Wright, Mark***. Evaluating the Economic and Environmental Benefits of Jet Fuel Production from Municipal Solid Waste via Gasification. *ACS Sustainable Chemistry & Engineering* (under review).

2. [$]Moones, K.; MacKenzie, D.; **Mba Wright, Mark***. A Comprehensive Analysis of Different Carbon Capture Technology Simulation Tools. *Computers and Chemical Engineering* (under review).

3. Peer-Reviewed Conference Proceedings, Bulletins, or Reports – In Print/Accepted

4. Books and Book Chapters

1. $Khatun, M. S.; Mba Wright, Mark.* Techno-Economic and Life Cycle Analysis of PHA Production from Organic Waste. In Advances in Bioenergy, Vol. 10; Elsevier, 2025; pp 129–185.
2. Gnangbe, S.; **Mba Wright, M.*** Techno-Economic Analysis and Energy and Material Flow Analysis for Advanced Waste Valorization Processes: A Case Study. In *Advanced Waste Valorization for Circular Economy: Chemical Process Design and Simulation*; under review.
3. Abbaspour, A.; Ebrahimpourboura, Z.; **Mba Wright, M.*** Use of Machine Learning in Process Design in the Biorefinery Field. In *Biorefineries*; under review.
4. Mba Wright, M. (2024). Climate Energy Nexus. Elsevier
5. Uddin, M. M., & Mba Wright, M. (2023). Anaerobic digestion fundamentals, challenges, and technological advances. In M. A. Benvenuto & H. Plaumann (Eds.), Green Chemistry: Advances in Alternative Energy.
6. Uddin, M. M., & Mba Wright, M. (2022). Life cycle analysis of biochar use in water treatment plants. In Sustainable Biochar for Water and Wastewater Treatment (pp. 705-735). Elsevier.
7. Ganguly, A., & Mba Wright, M. (2022). Techno-economic analysis of biochar in wastewater treatment. In Sustainable Biochar for Water and Wastewater Treatment (pp. 205-231). Elsevier.
8. Mba-Wright, M., & Brown, T. (2019). Costs of thermochemical conversion of biomass to power and liquid fuels. In Thermochemical Conversion of Biomass (pp. 337-353). Wiley.
9. Brown, R. C., & Mba-Wright, M. (2018). Capturing Solar Energy through Biomass. In Principles of Sustainable Energy Systems, Third Edition (pp. 331-374). CRC Press.
10. Brown, T. R., Mba Wright, M.*, Roman-Leshkov, Y., & Brown, R. C. (2014). Techno-economic assessment of biorefineries. In K. W. Waldron (Ed.), Advances in Biorefineries: Biomass and Waste Supply Chain Exploitation. Woodhead Publishing.
11. Mba Wright, M., & Brown, R. C.* (2011). Costs of Thermochemical Conversion of Biomass to Power and Liquid Fuels. In R. C. Brown (Ed.), Thermochemical Processing of Biomass. Wiley.

12. Brown, R. C.*, & Mba Wright, M. (2011). Capturing solar energy through biomass. In F. Kreith & J. F. Kreider (Eds.), Principles of Sustainable Energy. CRC Press.

5. Formally Invited Seminars and Presentations

1. Mark Mba Wright "To Pivot or to Pilot: TEAs for Successful Pilot Campaigns and Future Risk Management" BioMADE, Minneapolis, Minnesota, April 2026
2. Mark Mba Wright "Avances en los Estudios de la Bioeconomía (Advances in Bioeconomy Studies)" Universidad Complutense de Madrid, Madrid, Spain, March 2026
3. Mark Mba Wright “Leveraging the Bioeconomy on our road to carbon removal” Ohio State University, Columbus, Ohio, September 2024
4. Mark Mba Wright “Generative Artificial Intelligence for Synthetic Fiber Sustainability Assessment” Washington University at St. Louis, St. Louis, April 2024
5. Mark Mba Wright “Leveraging Agriculture and Renewable Energy Resources for Carbon Removal”, ETH University, Zurich, Switzerland, May 2023
6. Mark Mba Wright “Iowa State University”, University of San Francisco, Quito, Ecuador, June 2022
7. Mark Mba Wright “Natural Gas Decarbonization in Iowa”, University of Iowa, April 2022, Iowa City, Iowa
8. Mark Mba Wright “Techno-economic and lifecycle assessment of clean energy technologies”, University of Iowa, May 2022, Iowa City, Iowa
9. Mark Mba Wright “Leveraging Iowa’s Agriculture and Renewable Energy Resources for Carbon Removal” University of Iowa, September 23, 2021, Iowa City, Iowa
10. Mark Mba Wright “Investigating the sustainability of fossil- and bio-based carbon negative energy technologies for fuels and chemicals” University of Madison-Wisconsin, September 22, 2020, Madison WC (virtual)
11. Mark Mba Wright “Bioenergy System Modeling with Aspen Plus” NSF CREST Workshop, North Carolina A&T June 17, 2019, Greensboro NC
12. Mark Mba Wright “Evaluating a strategy for the valorization of biorefinery lignin streams” Washington University in St. Louis September 14, 2018 St. Louis, MO
13. Mark Mba Wright “Partial deoxygenation of loblolly pine bio-oils from a continuous pilot-scale HTL process”, Hydrothermal Processing Forum September 11, 2017 Leipzig, Germany
14. Mark Mba Wright “Techno-economic analysis of biofuels from co-solvent liquefaction with petroleum refinery oils” Karlsruhe Institute of Technology September 13, 2017 Karlsruhe, Germany

15. Mark Mba Wright “Clean and Economic Carbon Negative Energy” University of Iowa April 19th, 2017, Iowa City, IA

16. Mark Mba Wright “Update-RAPID Distributed Biorefining platform” Advanced Bioeconomy Leadership Conference, March 17, 2017, Washington DC

17. Mark Mba Wright “Carbon negative energy via the fast pyrolysis to fuels and bioproducts platform” 32nd International Conference on Solid Waste Technology and Management, March 19, Philadelphia, PA 2017

18. Mark Mba Wright “The Effect of Heat Carrier Properties on Pyrolysis Products in an Auger Pyrolyzer,” National Bioenergy Day at ISU. October 19, 2016, Ames, IA

19. Mark Mba Wright “Techno-Economic Analysis of Novel Biomass Thermochemical and Electrochemical Energy Systems,” 2nd RCN Conference on Pan American Biofuels and Bioenergy Sustainability. September 14, 2016 Buenos Aires, Argentina

20. Mark Mba Wright “Economics of Waste Conversion” Chemical Conversion via Modular Manufacturing, Energy Manufacturing Workshop December 3-4, 2015 St. Louis, Missouri

21. Mark Mba Wright “Small is Better: Fostering Growth in the Biofuels Industry with Energy Manufacturing” 1st RCN Conference on Pan American Biofuels and Bioenergy Sustainability, July 22-25, 2014 Recife, Brazil

22. Mark Mba Wright “Bio-oil Fractionation and Stabilization for Insertion in Refineries”. Integrated Biomass Supply Systems, October 8th, 2014 University of Tennessee, Knoxville Tennessee

23. Mark Mba Wright “Introduction to thermochemical technologies for production of fuels and biobased products” The Second International Conference on Duckweed Research and Applications, August 21, 2014, Rutgers University, New Jersey, NY

24. Mark Mba Wright “The impacts of facility scale and location on thermochemical biorefinery costs” December 11, 2012 CENUSA Conference, Ames, IA

25. Mark Mba Wright “Biofuels Technology and Economics” Massachusetts Institute of Technology Energy Club Inaugural Seminar, September 14, 2011, Cambridge, MA

6. Contributed Presentations

1. Khatun, M. S., Dubey, P., Parameswaran, P., Li, Y., & Wright, M. M. (2025). Techno-economic analysis of volatile fatty acid (VFA)-derived sustainable aviation fuel (SAF) from organic waste using AnMBR and liquid-liquid extraction. In 2025 AIChE Annual Meeting. American Institute of Chemical Engineers (AIChE).

2. Dubey, P., Tajipour, M., Wang, Z., Foston, M., Zhang, F., & Wright, M. M. (2025). A machine learning approach for predicting synthetic fiber prices based on tensile strength,

elongation, and Young's modulus. In 2025 AIChE Annual Meeting. American Institute of Chemical Engineers (AIChE).

3. Bhattacharjee, U., & Wright, M. M. (2025). AI-driven waste sorting with Llama 3.2 Vision for sustainable management. In 2025 AIChE Annual Meeting. American Institute of Chemical Engineers (AIChE).

4. Ebrahimpourboura, Z., Shao, Z., Vigil, R. D., & Wright, M. M. (2025). Comprehensive evaluation of fatty alcohol production: Economic, environmental, and data-driven insights. In 2025 AIChE Annual Meeting. American Institute of Chemical Engineers (AIChE).

5. Gnangbe, S., Radhakrishnan, H., Bai, X., Wan, C., & Wright, M. M. (2025). Economic and environmental analysis of polyhydroxyalkanoates (PHA) production using a plasma-biological hybrid process. In 2025 AIChE Annual Meeting. American Institute of Chemical Engineers (AIChE).

6. Sharma, V., Wright, M. M., & Cochran, E. W. (2025). Lifecycle assessment of bio-based rejuvenators for asphalt: SESO and BioMag. In 2025 AIChE Annual Meeting. American Institute of Chemical Engineers (AIChE).

7. Okoli, K., Dubey, P., & Wright, M. M. (2025). Machine learning-driven geospatial framework for optimal biorefinery siting in the United States. In 2025 AIChE Annual Meeting. American Institute of Chemical Engineers (AIChE).

8. Okoli, K., Dubey, P., & Wright, M. M. (2025). Techno-economic and life cycle assessment of bioproduction of 3-hydroxypropionic acid. In 2025 AIChE Annual Meeting. American Institute of Chemical Engineers (AIChE).

9. Dubey, P., Okoli, K., & Wright, M. M. (2025). Techno-economic and life cycle analysis of pyrolysis oil wells for carbon capture and sequestration. In 2025 AIChE Annual Meeting. American Institute of Chemical Engineers (AIChE).

10. Wright, M. M., & Dubey, P. (2024). Advances in biorefinery sustainability assessment via co-design and open platforms. In 2024 Spring Meeting & 20th Global Congress on Process Safety. American Institute of Chemical Engineers (AIChE)

11. Dubey, P., Schulte, L., & Wright, M. M. (2024). Sustainability assessment of grass to sustainable fuel pathways. In 2024 AIChE Annual Meeting. American Institute of Chemical Engineers (AIChE)

12. Tajipour, M., Jiang, B., Dubey, P., Zhang, F., Foston, M., & Wright, M. M. (2024). Techno economic analysis and life cycle assessment for synthetic spider silk production. In 2024 AIChE Annual Meeting. American Institute of Chemical Engineers (AIChE)

13. Wright, M. M., & Cortes-Pena, Y. (2024). Sustainable design and modeling of biorefineries II. In 2024 AIChE Annual Meeting. American Institute of Chemical Engineers (AIChE)

14. Wild, K., Dominguez, J. C., Schulte, L., & Wright, M. M. (2024). Integration of biogas model (ADM1) for economic and environmental analysis of RNG production. In 2024 AIChE Annual Meeting. American Institute of Chemical Engineers (AIChE)

15. Haidary, F. M., Nguyen, P. T., Cochran, E., Tessonnier, J.-P., Crossley, S., & Wright, M. M. (2024). Techno-economic and life cycle analysis of conversion of natural gas and biomass to hydrogen and performance carbons. In 2024 AIChE Annual Meeting. American Institute of Chemical Engineers (AIChE)

16. Khatun, M. S. S., Ganguly, A., Wang, Z., & Wright, M. M. (2024). Techno-economic analysis of a modular bioprocess system for producing polyhydroxyalkanoates (PHAs) from food waste via heterogeneous fermentation. In 2024 AIChE Annual Meeting. American Institute of Chemical Engineers (AIChE)

17. Ebrahimpourboura, Z., Mosalpuri, M., Yang, C., Ponukumati, A., Stephenson, C., Foston, M., Thimsen, E., Parker, K., & Wright, M. M. (2024). Comparative evaluation of electrocatalytic processes for the valorization of lignin through techno-economic and lifecycle assessment. In 2024 AIChE Annual Meeting. American Institute of Chemical Engineers (AIChE)

18. Mosalpuri, M., Wright, M. M., & Toor, F. (2024). Evaluation of thermophotovoltaics as a decarbonization and clean energy storage technology: Techno-economic analysis and uncertainty assessment. In 2024 AIChE Annual Meeting. American Institute of Chemical Engineers (AIChE)

19. Ebrahimpourboura, Z., Ponukumati, A., Carr, R., Gao, Y., Shang, Z., Krishnamurthy, A., Moon, T. S., Foston, M., & Wright, M. M. (2024). Integrated techno-economic and life cycle analysis of reductive catalytic fractionation and base-catalyzed depolymerization hybrid processing for lignin valorization. In 2024 AIChE Annual Meeting. American Institute of Chemical Engineers (AIChE)

20. Nwaogaraku, M. N., & Wright, M. M. (2024). Techno-economic analysis of itaconic acid production using a biorefinery approach. In 2024 AIChE Annual Meeting. American Institute of Chemical Engineers (AIChE)

21. Gnangbe, S., Radhakrishnan, H., Bai, X., & Wright, M. M. (2024). Techno-economic analysis and life cycle assessment of non-thermal plasma co-upcycling of waste plastics and CO2 to high-value chemicals. In 2024 AIChE Annual Meeting. American Institute of Chemical Engineers (AIChE)

22. Edmonson, A., Lin, Y., Mba Wright, M., & Shi, J. (2023). Life cycle assessment of air classification as a sulfur mitigation technique for logging residues. In 45th Symposium on Biomaterials, Fuels and Chemicals. SIMB.

23. Shi, J., Ding, L., Lin, Y., Zheng, Y., & Mba Wright, M. (2023). Understanding and mitigating sulfur variability in forest residues. In 45th Symposium on Biomaterials, Fuels and Chemicals. SIMB.

24. Moran, E. S.[$], & Mba Wright, M. (2023). Rare-earth elements recovery from electronic waste: Techno-economic and life cycle analysis. American Institute of Chemical Engineers Annual Meeting, Orlando Fl.

25. Maghfuri, A.[$], Mosalpuri, M., Li, W., & Mba Wright, M. (2023). Electrochemical systems and machine learning for cost-effective wastewater treatment to maximize renewable energy. American Institute of Chemical Engineers Annual Meeting, Orlando Fl.

26. Sharma, V.[$], Mba Wright, M., Dileep, D., & Cochran, E. (2023). Comparative techno-economic and lifecycle assessment of sustainably repairable r-PET plastics. American Institute of Chemical Engineers Annual Meeting, Orlando Fl.

27. Gnangbe, S.[$], Radhakrishnan, H., Bai, X., & Mba Wright, M. (2023). Techno-economic analysis of non-thermal plasma-assisted of single-use plastics film wastes to polyhydroxyalkanoates. American Institute of Chemical Engineers Annual Meeting, Orlando Fl.

28. Wild, K.[$], Mba Wright, M., & Schulte, L. (2023). TEA and LCA of renewable natural gas: Upgrading biogas from anaerobic co-digestion of prairie grass with hydroxycinnamic co-products. American Institute of Chemical Engineers Annual Meeting, Orlando Fl.

29. Ebrahimpourboura, Z.[$], Mosalpuri, M., Yang, C., Foston, M., Thimsen, E., & Mba Wright, M. (2023). Comparative techno-economic and lifecycle assessment of electrochemical processes for lignin valorization. American Institute of Chemical Engineers Annual Meeting, Orlando Fl.

30. Olafasakin, O.[$], Ma, J., Zavala, V. M., & Mba Wright, M. (2023). Comparative techno-economic analysis of producing high-value chemicals and fuels from waste plastic via conventional pyrolysis and thermal oxo-degradation. American Institute of Chemical Engineers Annual Meeting, Orlando Fl.

31. Wong, D., Mayfield, K. K., Hovorka, S. D., Mba Wright, M., Kirkendall, W., Dai, T., et al. (2023). Regional analysis of carbon dioxide removal potential across the United States. In AGU23. San Francisco, CA.

32. Olafasakin, O.[$], Bradshaw, S., Aguirre-Villegas, H., Ma, J., Huber, G., Zavala, V., Benson, C., & Mba Wright, M. (2022). A techno-economic and life cycle analysis of operating a standalone material recover facility in the United States. In American Institute of Chemical Engineers Annual Meeting. Phoenix, AZ.

33. Mosalpuri, M.[$], Li, W., & Mba Wright, M. (2022). Bipolar hydrogen production from biorenewable aldehydes and water in membrane-less electrolyzers. In American Institute of Chemical Engineers Annual Meeting. Phoenix, AZ.

34. Ma, J., Tominac, P., Huber, G., Olafasakin, O., Mba Wright, M., & Zavala, V. (2022). Economic evaluation of infrastructures for pyrolysis-based upcycling of plastic waste. In American Institute of Chemical Engineers Annual Meeting. Phoenix, AZ.

35. Sanchez-Moran, E.[$], Prodius, D., Nlebedim, C., & Mba Wright, M. (2022). Rare earth element recovery from e-waste: A techno-economic analysis (TEA) and life cycle analysis (LCA) case study of Terfenol-D scrap recycling. In American Institute of Chemical Engineers Annual Meeting. Phoenix, AZ.

36. Aui, A.[$], Alireza, Shanks, B., Foston, M., & Mba Wright, M. (2021). Techno-economic and sensitivity analysis of aromatic and alkene production from lignin via fast pyrolysis and catalytic upgrading coupled with ethanol production. In American Institute of Chemical Engineers Annual Meeting. Boston, MA.

37. Olafasakin, O.[$], Passalacqua, A., Subramanian, S., Brown, R. C., & Mba Wright, M. (2021). Machine-learning reduced order model for cost and emission assessment of a pyrolysis. In American Institute of Chemical Engineers Annual Meeting. Boston, MA.

38. Ganguly, A.[$], Brown, R. C., & Mba Wright, M. (2021). Evaluation of the economic viability and sustainability of autothermal pyrolysis sugars through computation and machine learning. In American Institute of Chemical Engineers Annual Meeting. Boston, MA.

39. Mas Martin, I.[$], Schulte Moore, L., & Mba Wright, M. (2021). Community-level energy planning model for the dynamic optimization of waste-to-gas and waste-to-power anaerobic digestion supply chains. In American Institute of Chemical Engineers Annual Meeting. Boston, MA.

40. Uddin, M.[$], Wen, Z., & Mba Wright, M. (2021). Economic and environmental impact of biochar addition on anaerobic digestion process. In American Institute of Chemical Engineers Annual Meeting. Boston, MA.

41. Ganguly, A.[$], Mas-Martin, I., Brown, R. C., & Mba Wright, M. (2020). Application of hydroprocessing, fermentation and anaerobic digestion in a pyrolysis refinery to maximize economic value. In American Institute of Chemical Engineers Annual Meeting. San Francisco, CA (virtual).

42. Uddin, M.[$], Simson, A., & Mba Wright, M. (2020). Techno-economic and life cycle analysis of dimethyl ether production via the bi-reforming pathway for transportation fuel. In American Institute of Chemical Engineers Annual Meeting. San Francisco, CA (virtual).

43. Ganguly, A.[$], Mas-Martin, I., Brown, R. C., & Mba Wright, M. (2020). Application of hydroprocessing, fermentation and anaerobic digestion in a pyrolysis refinery to maximize economic value. In 2020 TCS Biomass. Seattle, Washington (virtual).

44. Aui, A.[$], Ganguly, A., Mas-Martin, I., & Mba Wright, M. (2019). Carbon negative biofuel and power systems via hybrid pyrolysis and anaerobic digestion biorefineries. In 2019 AIChE Annual Meeting. Orlando, FL.

45. Aui, A. [$], & Mba Wright, M. (2018). Techno-economic and life cycle analysis of a farm scale anaerobic digestion plant in Iowa. In American Institute of Chemical Engineers Annual Meeting. Pittsburgh, PA.

46. Li, W.[$], & Mba Wright, M. (2018). Regional techno-economic and life cycle analysis of the pyrolysis-bioenergy-biochar pathway to carbon-negative energy. In American Institute of Chemical Engineers Annual Meeting. Pittsburgh, PA.

47. Qi, F., & Mba Wright, M. (2017). A DEM modeling of biomass fast pyrolysis in a double screw reactor. In American Institute of Chemical Engineers Annual Meeting. Minneapolis, MN.

48. Li, W.[$], Polin, J., Brown, R., & Mba Wright, M. (2017). Techno-economic analysis (TEA) of auto-thermal pyrolysis of lignocellulosic biomass to transportation fuels. In American Institute of Chemical Engineers Annual Meeting. Minneapolis, MN.

49. Daugaard, T.[$], & Mba Wright, M. (2017). Conversion of biomass based renewable resources to synthesis gases and pyrolysis oils. In American Institute of Chemical Engineers Annual Meeting. Minneapolis, MN.

50. Bbosa, D.[$], & Mba Wright, M. (2017). More than ethanol: a techno-economic analysis of corn Stover-ethanol biorefinery integrated with hydrothermal liquefaction process to convert lignin into biochemicals. In American Institute of Chemical Engineers Annual Meeting. Minneapolis, MN.

51. Daugaard, T.[$], & Mba Wright, M. (2017). The selection and optimization of heat carrier materials to maximize liquid yields and heat recovery in auger pyrolyzers. In American Institute of Chemical Engineers Annual Meeting. Chicago, IL.

52. Qi, F.[$], & Mba Wright, M. (2016). A Lagrangian-Eulerian modeling framework for biomass fast pyrolysis: Multiphysics DEM development and application. In American Institute of Chemical Engineers Annual Meeting. Golden, CO.

53. Daugaard, T.[$], Heindel, T., & Mba Wright, M. (2016). Effects of recycling heat carrier on the performance of an auger pyrolysis reactor. In Iowa State University Graduate and Professional Student Research Conference. Ames, IA.

54. Daugaard, T.[$], Heindel, T., & Mba Wright, M. (2016). Effects of recycling heat carrier on the performance of an auger pyrolysis reactor. In American Institute of Chemical Engineers Annual Meeting. San Francisco, CA.

55. Li, W.[$], Dang, Q., Laird, D., Brown, R. C., & Mba Wright, M. (2016). Techno-economic (TEA) and life cycle analysis (LCA) of the pyrolysis-bioenergy-biochar pathway to carbon-negative energy. In American Institute of Chemical Engineers Annual Meeting. San Francisco, CA.

56. Dang, Q., & Mba Wright, M. (2016). Economics of biofuels and bioproducts from an integrated pyrolysis biorefinery. In American Institute of Chemical Engineers Annual Meeting. San Francisco, CA.

57. Dang, Q., & Mba Wright, M. (2016). Life-cycle assessment and techno-economic analysis of biomass energy systems. In American Institute of Chemical Engineers Annual Meeting. San Francisco, CA.

58. Daugaard, T.[$], Heindel, T., & Mba Wright, M. (2016). Effects of recycling heat carrier on the performance of an auger pyrolysis reactor. In American Institute of Chemical Engineers Annual Meeting. Raleigh, NC.

59. Qi, F.[$], & Mba Wright, M. (2016). Particle-scale modeling of heat transfer in a double screw pyrolyzer. In American Institute of Chemical Engineers Annual Meeting. Chapel Hill, NC.

60. Li, W.[$], Dang, Q., Laird, D., Brown, R. C., & Mba Wright, M. (2016). Techno-economic (TEA) and life cycle analysis (LCA) of the pyrolysis-bioenergy-biochar pathway to carbon-negative energy. In American Institute of Chemical Engineers Annual Meeting. Chapel Hill, NC.

61. Daugaard, T.[$], Heindel, T., & Mba Wright, M. (2016). The effect of heat carrier properties on pyrolysis products in an auger pyrolyzer. In Iowa State University Graduate and Professional Student Research Conference. Ames, IA.

62. Mba Wright, M., Whenzen, L., & Dang, Q. (2016). Techno-economic analysis of novel biomass thermochemical and electrochemical energy systems. In International Bioenergy and Bioproducts Conference. Buenos Aires, Argentina.

63. Daugaard, T.[$], & Mba Wright, M. (2016). Biorenewable resources: The future? In Iowa State University Biobased Industry Center Summer Workshop. Ames, IA.

64. Daugaard, T.[$], Heindel, T., & Mba Wright, M. (2016). Auger pyrolyzers: A viable technology in biomass conversion. In Iowa Renewable Energy Association Annual Meeting. Des Moines, IA.

65. Apanovich, N., & Mba Wright, M. (2016). Biochar for soil remediation and improved food security in Central Uganda. In Iowa Water Conference. Des Moines, IA.

66. Apanovich, N., & Mba Wright, M. (2016). Biochar for soil remediation and improved food security in Central Uganda. In Iowa State University Symposium on Sustainability. Ames, IA.

67. Apanovich, N., & Mba Wright, M. (2016). Biochar for soil remediation and improved food security in Central Uganda. In Association of American Geographers Annual Meeting. Miami, FL.

68. Dang, Q.[$], Brown, R., & Mba Wright, M. (2015). Ultra-low carbon emissions from coal-fired power plants through bio-oil co-firing and bio-char sequestration. In Iowa State University Graduate and Professional Student Research Conference. Ames, IA.

69. Daugaard, T.[$], Heindel, T., & Mba Wright, M. (2015). The effect of heat carrier properties on pyrolysis products in a lab-scale auger pyrolyzer. In American Institute of Chemical Engineers Annual Meeting. Salt Lake City, UT.

70. Li, W.[$], Dang, Q., Smith, R., Brown, R. C., & Mba Wright, M. (2015). Stabilization of bio-oil fractions for insertion into petroleum refineries. In American Institute of Chemical Engineers Annual Meeting. Salt Lake City, UT.

71. Qi, F.[$], & Mba Wright, M. (2015). Multi-scale modeling of fast pyrolysis in a dual-auger reactor. In American Institute of Chemical Engineers Annual Meeting. Salt Lake City, UT.

72. Dang, Q.[$], Brown, R., & Mba Wright, M. (2015). Ultra-low carbon emissions from coal-fired power plants through bio-oil co-firing and bio-char sequestration. In American Institute of Chemical Engineers Annual Meeting. Salt Lake City, UT.

73. Li, W.[$], Dang, Q., Smith, R., Brown, R. C., & Mba Wright, M. (2015). Stabilization of bio-oil fractions for insertion into petroleum refineries. In American Institute of Chemical Engineers Annual Meeting. Chicago, IL.

74. Qi, F.[$], & Mba Wright, M. (2015). Simulation of granular mixing in dual-screw reactors based on discrete element method. In American Society of Agricultural and Biological Engineers Annual Meeting. Cedar Rapids, IA.

75. Dang, Q.[$], Brown, R., & Mba Wright, M. (2015). Ultra-low carbon emissions from coal-fired power plants through bio-oil co-firing and bio-char sequestration. In American Society of Agricultural and Biological Engineers Annual Meeting. Cedar Rapids, IA.

76. Daugaard, T.[$], & Mba Wright, M. (2015). Producing biorenewable fuels from biorenewable resources. In Iowa State University Biobased Industry Center Summer Workshop. Ames, IA.

77. Li, W.[$], Dang, Q., Smith, R., Brown, R. C., & Mba Wright, M. (2015). Stabilization of bio-oil fractions for insertion into petroleum refineries. In Iowa Academy of Science Annual Meeting. Iowa City, IA.

7. Other Scholarly Contributions

B. Patents, Disclosures, and Technology Transfer

C. Funded Grants and Contracts

1. Investigators, (list principal investigator first): Tessonnier Jean-Philippe, Lu Meng, Mba Wright Mark, Roling Luke, Shao Zengyi, Vigil Richard Dennis
   Title of grant/contract: BioMADE: Integrated Taylor Vortex Reactor System for the Production of Cost-Effective Sustainable Aviation Fuels
   Funding agency: NSF-National Science Foundation
   Dates: 10/01/2025 - 09/30/2027
   Total dollar amount of grant and dollar amount allocated to your work:
   $500,000 ($75,000)
   Role on project: Co-PI

2. Investigators, (list principal investigator first): Mba Wright, Mark
   Title of grant/contract: Enhancing Iowa's Energy Resilience through Anaerobic Digestion-based Microgrids
   Funding agency: Iowa Economic Development Authority
   Dates: 11/01/2025 - 10/31/2027
   Total dollar amount of grant and dollar amount allocated to your work: $255,680 ($63,920)
   Role on project: Co-PI

3. Investigators, (list principal investigator first): Mba Wright, Mark (Co-PI)
   Title of grant/contract: FMRG: Eco: Electro-Manufacturing of Ethylene and Nitrogenous Chemicals by Synergizing the Capture and Conversion of CO2 and Waste Nitrogen
   Funding agency: NSF-National Science Foundation
   Dates: 09/01/2024 - 08/31/2028
   Total dollar amount of grant and dollar amount allocated to your work: $3,000,000 ($750,000)
   Role on project: Co-PI

4. Investigators, (list principal investigator first): Mba Wright, Mark
   Title of grant/contract: Sustainable jet fuels via arrested anaerobic digestion of organic wastes to volatile fatty acids
   Funding agency: Bioindustrial Manufacturing and Design Ecosystem (BIOMADE)
   Dates: 01/01/2025 - 12/31/2026
   Total dollar amount of grant and dollar amount allocated to your work: $1,000,000 ($1,100,000)
   Role on project: PI

5. Investigators, (list principal investigator first): Mba Wright, Mark
   Title of grant/contract: Sustainable bio-acrylics and organic acids separations through novel techniques
   Funding agency: Bioindustrial Manufacturing and Design Ecosystem (BIOMADE)
   Dates: 06/01/2024 - 05/31/2026
   Total dollar amount of grant and dollar amount allocated to your work: $25,000 ($25,000)
   Role on project: PI

6. Investigators, (list principal investigator first): Mba Wright, Mark, Lu Chaoqun, Wang Yu
   Title of grant/contract: Integrated Modeling of Climate Resilient Biorefineries and Landscapes (CREBL) for a Sustainable Bioeconomy
   Funding agency: USDA-National Institute of Food & Agriculture (NIFA)
   Dates: 05/01/2023 - 04/30/2026
   Total dollar amount of grant and dollar amount allocated to your work: $999,495.0 ($333,230.)
   Role on project: PI

7. Investigators, (list principal investigator first): Mba Wright, Mark
   Title of grant/contract: Pilot Demonstration of a Modular Bioprocess System for

Manufacturing Consumer Bioplastic Products from Food Wastes
Funding agency: Virginia Polytechnic Institute & State University
Dates: 01/01/2023 - 12/31/2025
Total dollar amount of grant and dollar amount allocated to your work:
$300,000.0 ($300,000.)
Role on project: PI

8. Investigators, (list principal investigator first): Cochran Eric W, Forrester Michael John, Mba Wright, Mark, Williams R Christopher
Title of grant/contract: Scale-Up of Soybean Oil-Based Thermoplastic Products for Sustainable Asphalt Pavements
Funding agency: Soylei Innovations Llc
Dates: 05/01/2023 - 12/31/2025
Total dollar amount of grant and dollar amount allocated to your work:
$831,440.0 ($207,860.)
Role on project: COI

9. Investigators, (list principal investigator first): Mba Wright, Mark, Li Beiwen
Title of grant/contract: Surface Enhanced Smart Preprocessing of Municipal Solid Wastes for Year-Round Supply of Conversion-Ready Feedstocks
Funding agency: University of Kentucky Research Foundation
Dates: 10/01/2022 - 09/30/2025
Total dollar amount of grant and dollar amount allocated to your work:
$450,000.0 ($225,000.)
Role on project: PI

10. Investigators, (list principal investigator first): Schulte Moore Lisa Anne, Andersen Daniel S, Campbell Alexis Ann, Castellano Michael, Crespi John M, Darr Matthew John, Hartmann Katherine, Hayes Dermot James, Licht Mark A, Mba Wright, Mark, Mcdaniel Marshall Douglas, Miguez Fernando E, Plastina Alejandro, Schultz Madeline Margaret, Tidgren Kristine Anne
Title of grant/contract: Horizon Ii: a Climate-Smart Future for Corn, Soybean, Livestock, and Renewable Natural Gas Production
Funding agency: Roeslein Alternative Energy Llc
Dates: 09/01/2022 - 08/31/2027
Total dollar amount of grant and dollar amount allocated to your work:
$12,000,000.0 ($600,000.)
Role on project: COI

11. Investigators, (list principal investigator first): Mba Wright, Mark
Title of grant/contract: Collaborative Research: Gcr: Accelerated Discovery of Synthetic Biological Materials
Funding agency: NSF-National Science Foundation
Dates: 07/01/2022 - 06/30/2027
Total dollar amount of grant and dollar amount allocated to your work:
$294,000.0 ($294,000.)
Role on project: PI

12. Investigators, (list principal investigator first): Schulte Moore Lisa Anne, Mba Wright, Mark, Mcdaniel Marshall Douglas, Miguez Fernando E, Tyndall John Charles, Upadhaya Suraj
    Title of grant/contract: Advancing a New Biobased Value Chain in the Corn Belt to Improve Climate Resilience, Water Quality, and Rural Vitality
    Funding agency: Walton Family Foundation
    Dates: 03/01/2022 - 08/31/2024
    Total dollar amount of grant and dollar amount allocated to your work: $546,403.0 ($109,280.)
    Role on project: COI

13. Investigators, (list principal investigator first): Tessonnier Jean-Philippe, Cochran Eric W, Mba Wright, Mark
    Title of grant/contract: Rii Track-2 Fec: Cost-Effective Conversion of Natural Gas and Biomass to Hydrogen and Performance Carbons
    Funding agency: University of Oklahoma
    Dates: 08/15/2022 - 08/14/2026
    Total dollar amount of grant and dollar amount allocated to your work: $2,000,000.0 ($360,000.)
    Role on project: COI

14. Investigators, (list principal investigator first): Hayes Dermot James, Mba Wright, Mark
    Title of grant/contract: National Getting to Neutral Carbon - Iowa State
    Funding agency: Lawrence Livermore National Security Llc-Lawrence Livermore National Laboratory
    Dates: 12/01/2021 - 11/30/2023
    Total dollar amount of grant and dollar amount allocated to your work: $62,000.0 ($28,935.)
    Role on project: COI

15. Investigators, (list principal investigator first): Schulte Moore Lisa Anne, Brown Robert C, Crespi John M, Lawrence John, Mba Wright, Mark, Mcdaniel Marshall Douglas, Plastina Alejandro
    Title of grant/contract: Assessing Carbon Market Opportunities for Iowa Agriculture
    Funding agency: Iowa Economic Development Authority
    Dates: 09/01/2021 - 11/30/2021
    Total dollar amount of grant and dollar amount allocated to your work: $181,801.0 ($0.)
    Role on project: COI

16. Investigators, (list principal investigator first): Bai Xianglan, Curtzwiler Greg William, Hu Hui, Mba Wright, Mark, Vorst Keith
    Title of grant/contract: a Closed Loop Upcycling of Single-USe Plastic Films to Biodegradable Polymers
    Funding agency: DOE-US Department of Energy
    Dates: 02/01/2022 - 01/31/2025
    Total dollar amount of grant and dollar amount allocated to your work:

$2,500,000.0 ($500,000.)
Role on project: COI

17. Investigators, (list principal investigator first): Brown Robert C, Andersen Daniel S, Bakshi Santanu, Banik Chumki, Mba Wright, Mark
Title of grant/contract: Novel Manure Management Technologies: Reducing Odors, Producing Slow-Release Fertilizers, and Providing Ecosystem Services
Funding agency: USDA-National Institute of Food & Agriculture (NIFA)
Dates: 01/01/2022 - 12/31/2024
Total dollar amount of grant and dollar amount allocated to your work:
$999,904.0 ($133,290.)
Role on project: COI

18. Investigators, (list principal investigator first): Mba Wright, Mark
Title of grant/contract: Aspenplus Model Development for Sulfur Reduction from Pine Chips for Gasification and Syngas Synthesis
Funding agency: Battelle Energy Alliance-Idaho National Laboratory
Dates: 04/01/2021 - 03/31/2023
Total dollar amount of grant and dollar amount allocated to your work:
$61,273.0 ($61,273.)
Role on project: PI

19. Investigators, (list principal investigator first): Mba Wright, Mark
Title of grant/contract: Small Grains Unlock Potential to Keep Nitrogen in Crops and Out of Air and Water: Market-Based Innovations to Optimize Fertilizer and Manure Management in Extended Rotations
Funding agency: Practical Farmers of Iowa
Dates: 03/22/2021 - 02/14/2022
Total dollar amount of grant and dollar amount allocated to your work:
$5,000.0 ($5,000.)
Role on project: PI

20. Investigators, (list principal investigator first): Mba Wright, Mark
Title of grant/contract: Techno-Economic Analysis of Bio-Pla Pellet Production from Australia’s Food and Agricultural Waste Streams
Funding agency: Corumat Inc
Dates: 05/15/2021 - 07/23/2021
Total dollar amount of grant and dollar amount allocated to your work:
$14,823.0 ($14,823.)
Role on project: PI

21. Investigators, (list principal investigator first): Li Wenzhen, Mba Wright, Mark
Title of grant/contract: Paired Electrolyzer for Conversion of Crude Glycerin and Waste Co2
Funding agency: Iowa Economic Development Authority
Dates: 08/06/2020 - 08/05/2022
Total dollar amount of grant and dollar amount allocated to your work:

$156,000.0 ($10,405.)
Role on project: COI

22. Investigators, (list principal investigator first): Schulte Moore Lisa Anne, Heaton Emily, Mba Wright, Mark
Title of grant/contract: Advancing a New Biobased Value Chain in the Corn Belt to Improve Climate Resilience, Water Quality, and Rural Vitality
Funding agency: Walton Family Foundation
Dates: 07/01/2020 - 06/30/2021
Total dollar amount of grant and dollar amount allocated to your work:
$100,000.0 ($33,330.)
Role on project: COI

23. Investigators, (list principal investigator first): Li Wenzhen, Mba Wright, Mark
Title of grant/contract: FMSG: Electrochemical Upcycling of Waste Nitrates for Eco-Manufacturing of Nitrogen-Based Chemicals
Funding agency: NSF-National Science Foundation
Dates: 01/01/2021 - 12/31/2022
Total dollar amount of grant and dollar amount allocated to your work:
$500,000.0 ($250,000.)
Role on project: COI

24. Investigators, (list principal investigator first): Li Wenzhen, Mba Wright, Mark
Title of grant/contract: Paired Electrocatalytic Processing of Agricultural Waste Carbon for Production of Valuable Chemicals
Funding agency: USDA-National Institute of Food & Agriculture (NIFA)
Dates: 01/01/2021 - 12/31/2023
Total dollar amount of grant and dollar amount allocated to your work:
$500,000.0 ($166,650.)
Role on project: COI

25. Investigators, (list principal investigator first): Brown Robert C, Bai Xianglan, Curtzwiler Greg William, Mba Wright, Mark, Vorst Keith
Title of grant/contract: Multi-University Center on Chemical Upcycling of Waste Plastics (CUWP)
Funding agency: University of Wisconsin Madison
Dates: 10/01/2020 - 09/30/2024
Total dollar amount of grant and dollar amount allocated to your work:
$3,400,000.0 ($680,000.)
Role on project: COI

26. Investigators, (list principal investigator first): Mba Wright, Mark
Title of grant/contract: Eco-CBET Preliminary Proposal: Electrodeless Electrochemical Valorization of Lignin
Funding agency: Washington University St Louis
Dates: 01/01/2022 - 12/31/2024
Total dollar amount of grant and dollar amount allocated to your work:

$224,000.0 ($224,000.)
Role on project: PI

27. Investigators, (list principal investigator first): Brown Robert C, Mba Wright, Mark
Title of grant/contract: Autothermal Pyrolysis of Western Red Cedar for Dispatchable Renewable Power
Funding agency: Nebraska Public Power District
Dates: 01/01/2020 - 02/29/2020
Total dollar amount of grant and dollar amount allocated to your work:
$22,839.0 ($9,136.)
Role on project: COI

28. Investigators, (list principal investigator first): Schulte Moore Lisa Anne, Arbuckle J Gordon Jr., Brown Robert C, Campbell Alexis Ann, Comito Jacqueline M, Helmers Matthew Justin, Kimle Kevin Lee, Mba Wright, Mark, Niemi Jarad, Thompson Michael L, Tyndall John Charles, Vanloocke Andrew, Wen Zhiyou
Title of grant/contract: Consortium for Cultivating Human and Naturally Regenerative Enterprises (C-Change)
Funding agency: USDA-National Institute of Food & Agriculture (NIFA)
Dates: 10/01/2020 - 09/30/2025
Total dollar amount of grant and dollar amount allocated to your work:
$10,000,000.0 ($700,000.)
Role on project: COI

29. Investigators, (list principal investigator first): Mba Wright, Mark, Wen Zhiyou
Title of grant/contract: Strategies for Building Soil Carbon and Generating Carbon Negative Energy in Iowa Counties
Funding agency: Iowa Economic Development Authority
Dates: 01/01/2020 - 12/31/2021
Total dollar amount of grant and dollar amount allocated to your work:
$280,000.0 ($140,000.)
Role on project: PI

30. Investigators, (list principal investigator first): Mba Wright, Mark, Campbell Alexis Ann, Grudens-Schuck Nancy, Guan Yong, Lu Chaoqun, Schulte Moore Lisa Anne, Wang Yu
Title of grant/contract: Cnh2-L: Sustainable Field-To-Market Supply Chains Enabled by Blockchain Networks
Funding agency: NSF-National Science Foundation
Dates: 01/01/2020 - 12/31/2021
Total dollar amount of grant and dollar amount allocated to your work:
$1,550,000.0 ($387,500.)
Role on project: PI

31. Investigators, (list principal investigator first): Brown Robert C, Mba Wright, Mark
Title of grant/contract: Rapid: Autothermal Pyrolysis of Lignocellulosic Wastes to Sugars and Other Biobased Products
Funding agency: American Institute of Chemical Engineers
Dates: 01/01/2019 - 12/31/2021

Total dollar amount of grant and dollar amount allocated to your work:
$2,100,000.0 ($210,000.)
Role on project: COI

32. Investigators, (list principal investigator first): Mba Wright, Mark
Title of grant/contract: Anaerobic Digester Life Cycle Cost Analysis
Funding agency: Iowa Economic Development Authority
Dates: 11/01/2017 - 05/30/2018
Total dollar amount of grant and dollar amount allocated to your work:
$16,200.0 ($16,200.)
Role on project: PI

33. Investigators, (list principal investigator first): Brown Robert C, Andersen Daniel S, Koziel Jacek Adam, Mba Wright, Mark, Wen Zhiyou
Title of grant/contract: Valorization of Biochar: Applications in Anaerobic Digestion, Livestock Odor Control and Plant Growth
Funding agency: USDA-National Institute of Food & Agriculture (NIFA)
Dates: 01/01/2018 - 12/31/2019
Total dollar amount of grant and dollar amount allocated to your work:
$1,469,448.0 ($220,420.)
Role on project: COI

34. Investigators, (list principal investigator first): Brown Robert C, Mba Wright, Mark, Wen Zhiyou
Title of grant/contract: Rapid: Autothermal Pyrolysis of Lignocellulosic Wastes to Sugars and Other Biobased Products (Budget Period 2)
Funding agency: American Institute of Chemical Engineers
Dates: 01/01/2018 - 12/31/2018
Total dollar amount of grant and dollar amount allocated to your work:
$700,000.0 ($70,000.)
Role on project: COI

35. Investigators, (list principal investigator first): Bai Xianglan, Brown Robert C, Cochran Eric W, Mba Wright, Mark
Title of grant/contract: Controlled Polymerization of Lignin for Ideal Precursor of High-Quality Carbon Fiber
Funding agency: USDA-National Institute of Food & Agriculture (NIFA)
Dates: 01/01/2018 - 12/31/2020
Total dollar amount of grant and dollar amount allocated to your work:
$500,000.0 ($75,000.)
Role on project: COI

36. Investigators, (list principal investigator first): Brown Robert C, Mba Wright, Mark
Title of grant/contract: Rapid: Autothermal Pyrolysis of Lignocellulosic Wastes to Sugars and Other Biobased Products
Funding agency: American Institute of Chemical Engineers
Dates: 04/01/2017 - 09/30/2017
Total dollar amount of grant and dollar amount allocated to your work:

$400,000.0 ($60,000.)
Role on project: COI

37. Investigators, (list principal investigator first): Passalacqua Alberto, Brown Robert C, Mba Wright, Mark, Subramaniam Shankar
Title of grant/contract: an Open-Source Framework for the Computational Analysis and Design of Autothermal Chemical Processes
Funding agency: DOE-US Department of Energy
Dates: 10/01/2017 - 09/30/2019
Total dollar amount of grant and dollar amount allocated to your work: $854,040.0 ($213,510.)
Role on project: COI

38. Investigators, (list principal investigator first): Wang Yu, Hayes Dermot James, Mba Wright, Mark
Title of grant/contract: a Model-Based Assessment of Socioeconomic, Policy, and Environmental Implications for Sustainable Bioenergy
Funding agency: USDA-National Institute of Food & Agriculture (NIFA)
Dates: 02/20/2017 - 02/19/2021
Total dollar amount of grant and dollar amount allocated to your work: $499,622.0 ($99,924.)
Role on project: COI

39. Investigators, (list principal investigator first): Mba Wright, Mark, Li Wenzhen
Title of grant/contract: Techno-Economic Analysis of Renewable Electrochemical Systems for 2017 NSF Erc Grant Competition
Funding agency: Iowa Energy Center
Dates: 07/01/2016 - 06/30/2017
Total dollar amount of grant and dollar amount allocated to your work: $110,000.0 ($55,000.)
Role on project: PI

40. Investigators, (list principal investigator first): Mba Wright, Mark, Brown Robert C
Title of grant/contract: Scalable Reactor Designs for Catalytic Autothermal Pyrolysis
Funding agency: DOE-Advanced Research Projects Agency-Energy (ARPA-E)
Dates: 10/01/2016 - 09/30/2017
Total dollar amount of grant and dollar amount allocated to your work: $371,726.0 ($223,040.)
Role on project: PI

41. Investigators, (list principal investigator first): Mba Wright, Mark
Title of grant/contract: USing Ipython Simulations to Model Life Cycle Analysis of Ethanol Production
Funding agency: Marshalltown Community School District
Dates: 02/16/2016 - 12/31/2016
Total dollar amount of grant and dollar amount allocated to your work: $1,750.0 ($1,750.)
Role on project: PI

42. Investigators, (list principal investigator first): Mba Wright, Mark, Heindel Theodore John
    Title of grant/contract: Optimal Regeneration Conditions for Maximizing Biochar Heat Recovery and Maintaining Heat Carrier Quality
    Funding agency: Phillips 66 Company
    Dates: 01/01/2016 - 12/31/2017
    Total dollar amount of grant and dollar amount allocated to your work: $249,999.0 ($125,000.)
    Role on project: PI

43. Investigators, (list principal investigator first): Mba Wright, Mark
    Title of grant/contract: DOE Eere Amo Workshop to Discuss Manufacturing Process Intensification Innovation Topic
    Funding agency: Iowa Energy Center
    Dates: 09/14/2015 - 10/01/2015
    Total dollar amount of grant and dollar amount allocated to your work: $2,400.0 ($2,400.)
    Role on project: PI

44. Investigators, (list principal investigator first): Mba Wright, Mark
    Title of grant/contract: Techno-Economic Screening of Biofuels and Biochemicals from High Moisture Feedstock
    Funding agency: Iowa Energy Center
    Dates: 01/21/2015 - 05/15/2015
    Total dollar amount of grant and dollar amount allocated to your work: $24,228.0 ($24,228.)
    Role on project: PI

45. Investigators, (list principal investigator first): Mba Wright, Mark
    Title of grant/contract: the Role of Biochar in Food Security in Uganda
    Funding agency: Purdue University
    Dates: 07/01/2015 - 12/31/2016
    Total dollar amount of grant and dollar amount allocated to your work: $23,000.0 ($23,000.)
    Role on project: PI

46. Investigators, (list principal investigator first): Mba Wright, Mark, Brown Robert C, Hu Guiping
    Title of grant/contract: Joint Analysis by PNNL and Iowa State University
    Funding agency: Battelle Memorial Institute-Pacific Northwest National Laboratory
    Dates: 01/01/2014 - 12/31/2014
    Total dollar amount of grant and dollar amount allocated to your work: $100,000.0 ($50,000.)
    Role on project: PI

47. Investigators, (list principal investigator first): Mba Wright, Mark
    Title of grant/contract: Iowa Anaerobic Digester Economic Model
    Funding agency: Ecoengineers

Dates: 11/01/2013 - 10/31/2014
Total dollar amount of grant and dollar amount allocated to your work:
$31,824.0 ($31,824.)
Role on project: PI

48. Investigators, (list principal investigator first): Mba Wright, Mark, Brown Robert C, Hu Guiping
Title of grant/contract: Joint Analysis by PNNL and Iowa State University
Funding agency: Battelle Memorial Institute-Pacific Northwest National Laboratory
Dates: 01/01/2013 - 12/31/2013
Total dollar amount of grant and dollar amount allocated to your work:
$120,000.0 ($60,000.)
Role on project: PI

49. Investigators, (list principal investigator first): Brown Robert C, Mba Wright, Mark, Smith Ryan G
Title of grant/contract: Stabilization of Bio-Oil Fractions for Insertion into Petroleum Refineries
Funding agency: DOE-US Department of Energy
Dates: 01/01/2013 - 12/31/2013
Total dollar amount of grant and dollar amount allocated to your work:
$750,000.0 ($187,500.)
Role on project: COI

50. Investigators, (list principal investigator first): Mba Wright, Mark, Brown Robert C, Hu Guiping
Title of grant/contract: Joint Analysis by PNNL and Iowa State University
Funding agency: Battelle Memorial Institute-Pacific Northwest National Laboratory
Dates: 11/01/2011 - 10/31/2012
Total dollar amount of grant and dollar amount allocated to your work:
$100,000.0 ($50,000.)
Role on project: PI

III. TEACHING AND STUDENT MENTORING

A. Instruction for ISU

Provide information for undergraduate and graduate courses, both on and off campus. Include semester, course identifier, course name, number of credit hours, lab/no lab, number of students in class, and number of TAs.

For example:
1. Spring 2009: ENGR XXX – "Course I Title", 3 Credits, No Lab, 145 students, 2 TAs.
2. Fall 2010: ENGR XXX – Course II Title", 4 Credits, Lab, 35 students, no TA.

Term (most recent first)	Course number	Course Title	Credits	Lab	Number of students	TA/ graders
Fall 2025	ME 5350 01	Thermochemical Processing of Biomass	3	No	10	0/0
Fall 2025	ME 5350 02	Thermochemical Processing of Biomass	3	No	9	0/0
Fall 2025	ME 5100 03	Economics and Policy of Engineered Energy Systems	3	No	8	0/0
Fall 2025	ME 4330 01	Renewable Energy Systems	3	No	50	0/0
Spring 2025	ME 5450 1	Thermal Systems Design	3	No	19	0/0
Spring 2025	ME 5450 2	Thermal Systems Design	3	No	8	0/0
Spring 2024	ME 510 1	Economics and Policy of Engineered Energy Systems	3	No	10	0/0

Fall 2024	ME 510 1	Economics and Policy of Engineered Energy Systems	3	No	23	0/0
Fall 2024	ME 510 2	Economics and Policy of Engineered Energy Systems	3	No	27	0/0
Fall 2023	ME 535 1	Thermochemical Processing of Biomass	3	No	13	0/0
Fall 2023	ME 535 2	Thermochemical Processing of Biomass	3	No	10	0/0
Fall 2023	ME 332	Engineering Thermodynamics II	3	No	51	0/1
Fall 2022	ME 510 1	Economics and Policy of Engineered Energy Systems	3	No	16	0/0
Fall 2022	ME 510 2	Economics and Policy of Engineered Energy Systems	3	No	18	0/0
Fall 2022	ME 332-4	Engineering Thermodynamics II	3	No	55	0/1
Fall 2021	ME 231	Engineering Thermodynamics I	3	No	53	1/1
Fall 2021	ME 535	Thermochemical Processing of Biomass	3	No	9	0/0
Fall 2021	ME 535 2	Thermochemical Processing of Biomass	3	No	5	0/0
Spring 2021	ME 332	Engineering Thermodynamics II	3	No	38	0/1
Spring 2021	ME 545	Thermal Systems Design	3	No	13	0/0
Fall 2020	ME 510 XW	Economics and Policy of Engineered Energy Systems	3	No	12	0/0
Fall 2020	ME 510	Economics and Policy of Engineered Energy Systems	3	No	21	0/0
Spring 2020	ME 510	Economics and Policy of Engineered Energy Systems	3	No	30	0/0
Spring 2020	ME 510 XW	Economics and Policy of Engineered Energy Systems	3	No	15	0/0
Spring 2020	ME 535	Thermochemical Processing of Biomass	3	No	7	0/0
Spring 2020	ME 332 XW	Engineering Thermodynamics II	3	No	24	0/1

Fall 2019	ME 332 3	Engineering Thermodynamics II	3	No	56	0/1
Fall 2019	ME 332 1	Engineering Thermodynamics II	3	No	7	0/1
Spring 2019	ME 332 XW	Engineering Thermodynamics II	3	No	11	0/1
Fall 2019	ME 545 XW	Thermal Systems Design	3	No	13	0/0
Fall 2019	ME 535 1	Thermochemical Processing of Biomass	3	No	10	0/0
Spring 2019	ME 231 D	Engineering Thermodynamics I	3	No	74	0/1
Spring 2019	ME 510 1	Economics and Policy of Engineered Energy Systems	3	No	30	0/0
Fall 2018	ME 545	Thermal Systems Design	3	No	9	0/0
Fall 2018	ME 545 XE	Thermal Systems Design	3	No	10	0/0
Spring 2018	ME 510	Economics and Policy of Engineered Energy Systems	3	No	27	0/0
Spring 2018	ME 510 XE	Economics and Policy of Engineered Energy Systems	3	No	12	0/0
Spring 2018	ME 231	Engineering Thermodynamics I	3	No	81	0/1
Fall 2017	ME 545	Thermal Systems Design	3	No	13	0/0
Spring 2017	ME/BRT 535	Thermochemical Processing of Biomass	3	No	9	0/0
Spring 2017	ME 510 XE	Economics and Policy of Engineered Energy Systems	3	No	10	0/0
Spring 2017	ME 510	Economics and Policy of Engineered Energy Systems	3	No	17	0/0
Spring 2017	ME 332	Engineering Thermodynamics II	3	No	58	1/1
Spring 2016	ME 510 XE	Economics and Policy of Engineered Energy Systems	3	No	3	0/0
Spring 2016	ME 510	Economics and Policy of Engineered Energy Systems	3	No	20	0/0
Spring	ME 332	Engineering	3	No	55	0/1

2016		Thermodynamics II				
Fall 2016	ME 545	Thermal Systems Design	3	No	11	0/0
Fall 2016	ME 510 XE	Economics and Policy of Engineered Energy Systems	3	No	10	0/0
Spring 2015	ME 510 XE	Economics and Policy of Engineered Energy Systems	3	No	5	0/0
Spring 2015	ME 510	Economics and Policy of Engineered Energy Systems	3	No	19	0/1
Fall 2015	ME 332	Engineering Thermodynamics II	3	No	61	0/0
Spring 2014	ME/BRT 535 XE	Thermochemical Processing of Biomass	3	No	7	0/0
Spring 2014	ME/BRT 535	Thermochemical Processing of Biomass	3	No	8	0/0
Fall 2014	ME 545 XE	Thermal Systems Design	3	No	4	0/0
Fall 2014	ME 545	Thermal Systems Design	3	No	14	0/1
Spring 2013	ME 332	Engineering Thermodynamics II	3	No	54	0/1
Fall 2013	ME 332	Engineering Thermodynamics II	3	No	56	0/1
Fall 2012	ME 332	Engineering Thermodynamics II	3	No	41	0/0
Spring 2014	BRT/ SCM 513x	Biorenewable Supply Chains	3	No	10	0/0
Spring 2014	BRT 590	Independent Study	3	No	1	0/0
Fall 2013	ME 490	Independent Study	3	No	1	0/0
Fall 2013	ME 590	Independent Study	3	No	1	0/0
Fall 2014	BRT 591L, X	Independent Study	1	Yes	9	0/0
Fall 2015	ME 490, X	Independent Study	3	No	1	0/0
Spring 2013	ME 490, X	Independent Study	1	No	1	0/0
Fall 2012	ME 590, X	Independent Study	3	No	1	0/0

B. Curricular Development Activity for ISU

ME 545 Thermal Systems Design: developed asynchronous version of the course with Online-Learning grant funds
ME 510 Economics and Policy of Engineered Energy Systems: developed asynchronous version of the course with Online-Learning grant funds
SCM/BRT 513X Biorenewable Supply Chain Management, 2014: developed syllabus, lecture materials, and assessments for this new course.
ME 535 Thermal System Design, 2014: course was updated and reintroduced with new syllabus, lecture materials, and assessment methods.

C. Supervision of Students as Major Professor

1. Abbaspour Aria, PhD, Spring 2025, "Process design and machine learning in biorefineries" In progress.
2. Okoli Kingsley, PhD, Spring 2025, "Machine learning for biorefinery siting and bioproducts" In progress.

4. De Leon Hernandez Jesus, MS, Spring 2025, "Clean energy systems analysis" In progress.
5. Vo Thanh Lich, MEng, Spring 2025, "Energy systems engineering" In progress.
6. Matthews Michael, MEng, Spring 2025, "Energy systems engineering (distance)" In progress.
7. Maruth Jacob, MEng, Spring 2025, "Energy systems engineering" In progress.
8. Leslie Brendan, MEng, Spring 2025, "Energy systems engineering" In progress.
9. Abdeldayem Mohamed, PhD, Spring 2024, "Simulation" In progress – degree expected May 2025.
10. Al Marry Nassar, PhD, Spring 2024, "Techno-economic analysis of wastewater treatment systems" In progress – degree expected Summer 2024.
11. Mosalpuri Manish, PhD, Spring 2024, "Techno-economic analysis of the production of bio-based chemicals" In progress – degree expected Spring 2025.
12. Gnangbe Samirah, PhD, Spring 2024, "Techno-economic analysis of plasma-based pyrolysis systems" In progress – degree expected Spring 2026.
13. Ebrahimpourboura Zahra, PhD, Spring 2024, "Sustainability analysis of lignin chemical pathways", In progress – degree expected Fall 2025.
14. Haidary Farhan, PhD, Spring 2024, "Techno-economic analysis of hybrid performance carbons" In progress – degree expected Spring 2026.

15. Sharma Vedanti, PhD, Spring 2024, “Techno-economic analysis of trojan horse plastic waste recycling in the United States” In progress – degree expected Spring 2026.

16. Adejare I Adesiyan, PhD, Spring 2024, “Techno-economic analysis of plastic waste upcycling in the United States” In progress – degree expected Spring 2027.

17. Jui Saha, PhD, Spring 2024, “Techno-economic analysis of biorenewable policies” In progress – degree expected Spring 2028.

18. Kruger Ray, PhD, Spring 2024, “Simulation” In progress – degree expected Spring 2026.

19. Khatun Mst Sharifa, PhD, Spring 2024, “Techno-economic analysis of food waste to PHA biorefineries” In progress – degree expected Spring 2026.

20. Tajipour Melika, PhD, Spring 2024, “Techno-economic analysis of the production of synthetic fiber silk” In progress – degree expected Spring 2026.

21. Nwaogaraku Nkechi Miriam, PhD, Spring 2024, “Techno-economic analysis of the production of itaconic acid” In progress – degree expected Spring 2027.

22. Amponsah Joseph, PhD, Spring 2024, “Clean Energy” In progress – degree expected Spring 2026.

23. Katherine J Wild, MS, Spring 2024, “Techno-economic analysis of anaerobic digestion of manure and prairie grass” In progress – degree expected Spring 2024.

24. Shuowen Chen, MS, Spring 2024, “Techno-economic analysis of waste to sustainable aviation fuels” In progress – degree expected Spring 2025.

25. Mrinal Manoj Redij, MS, Spring 2024, “Optimization of carbon removal biorefinery technologies” In progress – degree expected Spring 2025.

26. Abdullah Maghfuri, PhD, Spring 2023, “Techno-economic analysis of energy systems in Saudi Arabia”, Graduated and now teaching in Saudi Arabia

27. Esther Sanchez Moran, MS, Spring 2023, “Techno-economic and lifecycle analysis of carbon negative energy systems”, Graduated now at Alliant Energy.

28. Olumide Olafasakin, PhD, Spring 2023, “Reduced order modeling of kinetic chemical systems”, Preliminary exam completed. Graduated now at Exxon Mobil.

29. Arna Ganguly, PhD, Fall 2022, “Techno-economic and lifecycle analysis of carbon negative energy systems”, now Research Scientist at Argonne National Laboratory.

30. Md-Mosleh Uddin, PhD, Fall 2022, “Carbon capture system design and analysis”, now Research Scientist at the National Renewable Energy Laboratory.

31. Irene Mas-Martin, MS, Summer 2022, “Techno-economic and lifecycle analysis of carbon negative energy systems”, now in Industry.

32. Alvina Aui, PhD, Spring 2022, “Bio-energy system analysis: Profit, planet, and policy”, now Research Scientist at Lawrence Livermore National Laboratory.

33. R Gallolu-Kankanamalage, MS, Spring 2021, “Discrete element method modeling of biomass fast pyrolysis granular flows”, now in Industry.

34. Tannon Daugaard, PhD, Fall 2018, “Thermal systems, experimental design”, now Research Scientist at Iowa State University.

35. Wenqin Li, PhD, Summer 2018, “Techno-economic analysis”, now Research Scientist at Lawrence Livermore National Laboratory.

36. Denis Bbosa, PhD, Spring 2018, “Techno-economic and lifecycle analysis of carbon negative energy systems”, now Deputy Dean at Mbarara University.

37. Daudet Nzombo, MS, Summer 2017, “Techno-economic and lifecycle analysis of carbon negative energy systems”, now in Industry.

38. Fenglei Qi, PhD, Summer 2017, “Techno-economic and lifecycle analysis of carbon negative energy systems”, now Assistant Professor at Hefei University.

39. Longwen Ou, PhD, Summer 2016, “Techno-economic and lifecycle analysis of carbon negative energy systems”, now Research Scientist at Argonne National Laboratory.

40. Mitchell Amundson, MS, Spring 2016, “Carbon capture system design and analysis”, now in Industry.

41. Boyan Li, MS, Fall 2015, “Techno-economic and lifecycle analysis of carbon negative energy systems”, now in Industry.

42. Wenhao Hu, MS, Spring 2015, “Techno-economic analysis”, now in Industry.

43. Tristan Brown, PhD, Spring 2014, “Uncertainty analysis”, now Associate Professor at SUNY.

D. Service on Graduate Student Committees

2. Okoli Kingsley, Spring 2026, PHD in M E, Major professor

3. Abbaspour Aria, Spring 2026, PHD in M E, Major professor

4. Saha Jui, Spring 2026, PHD in M E, Major professor

5. Adesiyan Adejare, Spring 2026, PHD in M E, Major professor

6. De Leon Hernandez Jesus, Spring 2026, MS in M E, Major professor

7. Matthews Michael, Spring 2026, MEN in E S, Major professor

8. Vo Thanh Lich, Spring 2026, MEN in E S, Major professor
9. Maruth Jacob, Spring 2026, MEN in E S, Major professor
10. Leslie Brendan, Spring 2026, MEN in E S, Major professor
11. Fickbohm Zoe, Spring 2026, PHD in M E, Committee member
12. Ganji Fatemeh, Spring 2026, PHD in C B E, Committee member
13. Khan Mahmudul Hasan, Spring 2026, PHD in C B E, Committee member
14. Tjioe Jonathan, Spring 2026, PHD in C B E, Committee member
15. Richardson Samuel, Spring 2026, PHD in C B E, Committee member
16. Sloan Elizabeth, Spring 2026, MS in HCI, Committee member
17. Pyla Sai Surya Rithvik, Spring 2026, MS in HCI, Committee member
18. Bernadette Balegana, Spring 2025, MEN in M E, Major professor
19. Amponsah Joseph, Spring 2025, PHD in M E, Major professor
20. Nwaogaraku Nkechi Miriam, Spring 2025, MEN in M E, Major professor
21. Mohamed Abdeldayem, Spring 2025, PHD in M E, Major professor
22. Katherine Wild, Spring 2025, MS in M E, Major professor
23. Abigail Schulte, Spring 2025, MS in A B E, Committee member
24. Mohammed Al-Subaey, Spring 2025, PHD in M E, Committee member
25. Ajay Kotam, Spring 2025, MEN in M E, Major professor
26. Ghanaatian Alireza, Spring 2025, PHD in C B E, Committee member
27. Keshvarinia Moones, Spring 2025, PHD in I E, Committee member
28. Elhambakhsh Abbas, Spring 2025, PHD in C B E, Committee member
29. Wiss Guy, Spring 2025, MEN in E S, Major professor
30. Venkatraman Abhinav, Spring 2025, PHD in E E, Committee member
31. Redij Mrinal Manoj, Spring 2025, MS in M E, Major professor
32. Manish Mosalpuri, Spring 2024, PHD in M E, Major professor
33. Tajipour Melika, Spring 2025, MS in M E, Major professor
34. Khatun Mst Sharifa, Spring 2025, PHD in M E, Major professor

35. Sowou Dovene, Spring 2025, MEN in E S, Major professor
36. Odebiyi Habeeb, Fall 2024, PHD in M E, Committee member
37. Dajani Isam, Fall 2024, MEN in E S, Major professor
38. Kruger Ray, Fall 2024, PHD in M E, Major professor
39. Sharma Vedanti, Fall 2024, PHD in M E, Major professor
40. Mistry Devanshi, Fall 2024, PHD in C B E, Committee member
41. Haidary Farhan, Fall 2024, MS in M E, Major professor
42. Soko Luke, Fall 2024, PHD in A B E, Committee member
43. Coffman Isabel, Fall 2024, PHD in M E, Committee member
44. Achanta Krishna Sai, Fall 2024, PHD in C B E, Committee member
45. Islam Md Kaviul, Fall 2024, MS in M E, Committee member
46. Kosaraju Satya, Fall 2024, MS in A B E, Committee member
47. Ebrahimpourboura Zahra, Summer 2024, PHD in M E, Major professor
48. Alhaj Mohammed Abdulrahman, Summer 2024, PHD in M E, Committee member
49. Iffat Uday Sultan Ul, Summer 2024, PHD in M E, Committee member
50. Gnangbe Samirah, Summer 2024, PHD in M E, Major professor
51. Al Keyyam Ibrahim Omar, Summer 2024, PHD in M E, Committee member
52. Radhakrishnan Harish, Spring 2024, PHD in M E, Committee member
53. Carson Jamie, Spring 2024, MEN in E S, Major professor
54. Al Marry Nassar, Spring 2024, PHD in M E, Major professor
55. Rahic Elmin, Spring 2024, PHD in A B E, Committee member
56. Brown Jessica, Spring 2024, PHD in M E, Committee member
57. Moham Ed Abdur Razzaq, Spring 2024, PHD in M E, Committee member
58. Olumide Olafasakin, Fall 2023, PHD in M E, Major professor
59. Tian Lan, Fall 2023, PHD in M E, Committee member
60. Esther Sanchez Moran, Fall 2023, MS in M E, Major professor
61. Abdullah Maghfuri, Fall 2023, PHD in M E, Major professor

62. Nisreen Alkhalifa, Summer 2023, MS in A B E, Committee member
63. Harish Radhakrishnan, Spring 2023, PHD in M E, Committee member
64. Pius Jjagwe, Spring 2023, MS in A B E, Committee member
65. Jamie Carson, Spring 2023, MEN in M E, Major professor
66. Ankush Mishra, Spring 2023, MS in M E, Committee member
67. Ivan-Charles Muyanja, Spring 2023, MEN in M E, Minor representative
68. Ahmed Awad, Spring 2023, MEN in M E, Major professor
69. Md-Mosleh Uddin, Fall 2022, PHD in M E, Major professor
70. Arna Ganguly, Fall 2022, PHD in M E, Major professor
71. Howard Carr, Fall 2022, MS in M E, Committee member
72. Rajat Sharma, Spring 2022, PHD in FSHNA, Committee member
73. Xiaolin Chen, Spring 2022, PHD in M E, Committee member
74. Alvina Aui, Spring 2022, PHD in M E, Major professor
75. Yixin Luo, Spring 2022, PHD in M E, Minor representative
76. Matthew Taylor, Spring 2022, MEN in M E, Major professor
77. Irene Mas-Martin, Summer 2022, MS in M E, Major professor
78. Nicholas King, Fall 2021, MEN in M E, Major professor
79. Parinaz Hafezi-Sefat, Fall 2021, PHD in M E, Committee member
80. Si Chen, Spring 2021, PHD in FSHNA, Committee member
81. R Gallolu-Kankanamalage, Spring 2021, MS in M E, Major professor
82. Lusi A, Summer 2021, PHD in M E, Minor representative
83. Harry Bonilla-Alvarado, Summer 2021, PHD in M E, Committee member
84. Dana Billingsley, Summer 2021, MEN in M E, Major professor
85. Hany Asr, Spring 2021, MEN in M E, Major professor
86. Samuel Hipple, Spring 2021, MS in M E, Committee member
87. Emily Benz, Spring 2021, MEN in M E, Major professor
88. Hyaquino Hyacinthe, Spring 2021, MEN in M E, Major professor

89. Ivan-Charles Muyanja, Summer 2021, MS in M E, Major professor
90. Alireza Saraeian, Fall 2020, PHD in C B E, Committee member
91. Zachary Reinhart, Fall 2020, PHD in M E, Committee member
92. Matthew Laureano Rivera, Fall 2020, MS in C B E, Committee member
93. Benjamin Robertson, Summer 2020, MS in M E, Committee member
94. Soham Vanage, Spring 2020, MEN in M E, Major professor
95. Laurel Barnet, Spring 2020, PHD in M E, Committee member
96. Logan Heinen, Spring 2020, MEN in M E, Major professor
97. Joseph Kaus, Spring 2020, MEN in M E, Major professor
98. Gary Bau, Fall 2020, MEN in M E, Major professor
99. Srujana Kandukuri, Fall 2019, MS in IMSE, Committee member
100. Anmol Kapoor, Fall 2019, MS in IMSE, Committee member
101. Tina Akinyi, Fall 2019, PHD in M E, Committee member
102. Rama Mutyala, Fall 2019, MS in IMSE, Committee member
103. Gerrick Bivins, Fall 2019, PHD in M E, Committee member
104. Humair Nadeem, Spring 2019, MEN in M E, Major professor
105. Jake Lindstrom, Spring 2019, PHD in M E, Committee member
106. Ross Mazur, Spring 2019, PHD in M E, Committee member
107. Olamide Opadokun, Spring 2019, MS in M E, Committee member
108. Joseph Polin, Summer 2019, PHD in M E, Committee member
109. Wangda Qu, Fall 2018, PHD in M E, Committee member
110. Denis Bbosa, Spring 2018, PHD in M E, Major professor
111. Dane Erickson, Spring 2018, MS in M E, Committee member
112. Tannon Daugaard, Fall 2018, PHD in M E, Major professor
113. Jordan Tiarks, Fall 2018, PHD in M E, Committee member
114. S. Chennamkulam Renjith, Fall 2018, MS in IMSE, Committee member
115. Wenqin Li, Summer 2018, PHD in M E, Major professor

116. Vishnu Parthasarathy, Summer 2018, MS in IMSE, Committee member
117. Arpa Ghosh, Spring 2018, PHD in C B E, Committee member
118. Steven Mmape, Fall 2017, MS in A B E, Committee member
119. Kayla Johnson, Spring 2017, MS in M E, Committee member
120. Matthew Herman, Spring 2017, MA in POL S, Committee member
121. Patrick Hall, Fall 2017, PHD in M E, Committee member
122. Daudet Nzombo, Summer 2017, MS in M E, Major professor
123. Santiago Lemos Cano, Spring 2017, PHD in E CPE, Committee member
124. Ross Mazur, Spring 2017, MS in M E, Committee member
125. Abhinav Venkatraman, Spring 2017, PHD in E CPE, Committee member
126. Fenglei Qi, Summer 2017, PHD in M E, Major professor
127. Aditya-Kiran Pathak, Summer 2017, MS in IMSE, Committee member
128. Nithin Panicker, Fall 2017, PHD in M E, Committee member
129. Wenqi Li, Summer 2016, MS in M E, Committee member
130. Bo Sun, Summer 2016, PHD in M E, Committee member
131. Jeremy Brue, Summer 2016, PHD in A B E, Committee member
132. Mitchell Amundson, Spring 2016, MS in M E, Major professor
133. Sunil Suram, Spring 2016, PHD in M E, Committee member
134. Michael Nolte, Summer 2016, PHD in C B E, Committee member
135. Chamila Thilakaratne, Summer 2016, PHD in M E, Minor representative
136. Longwen Ou, Summer 2016, PHD in M E, Major professor
137. Martin Haverly, Fall 2016, PHD in M E, Committee member
138. Wenhao Hu, Spring 2015, MS in M E, Major professor
139. Boyan Li, Fall 2015, MS in M E, Major professor
140. Breanna Marmur, Fall 2015, MS in M E, Committee member
141. Nordica Maccarty, Fall 2015, PHD in M E, Committee member
142. Matthew Kieffer, Summer 2015, MS in M E, Committee member

143. Leilei Zhang, Summer 2015, PHD in IMSE, Committee member

144. Daniel Cole, Spring 2015, PHD in CHEM, Committee member

145. Martin Haverly, Spring 2015, PHD in M E, Committee member

146. Bernardo Del-Campo, Summer 2015, PHD in M E, Committee member

147. Mostafa Fawzy, Spring 2015, PHD in IMSE, Committee member

148. Nandith Chandy, Fall 2014, MS in M E, Committee member

149. Matthew Kieffer, Spring 2014, PHD in M E, Committee member

150. Qi Li, Spring 2014, MS in IMSE, Committee member

151. Ahmad Bujang, Summer 2014, PHD in A B E, Committee member

152. Preston Gable, Summer 2014, MS in M E, Committee member

153. Tristan Brown, Summer 2014, PHD in M E, Major professor

154. Yihua Li, Spring 2013, MS in IMSE, Committee member

155. Erwin Utomo, Fall 2012, MEN in M E, Major professor

E. Supervision of Post-Doctoral Students and Professional Staff

Qi Dang, 09/2014 - 09/2017 Life cycle analysis of biofuel pathways. Professor in China
Pallavi Dubey 09/2023 - Present. Climate smart agriculture. Research Scientist

F. Supervision of Independent Study and Undergraduate Research

1. Ushashi Battacharjee, S2025, "Sustainable Aviation Fuels Literature Review"
2. Timothy J Maier, S2025, "Chemical Process Design Simulation Software"
3. Jayden Sorter, S2025, "Retrieval Augmented Generative Software"
4. Leon Kong, S2024, "Climate Smart Aviation Fuels"
5. Austin Nguyen, F2023, "Solid Waste Dataset Generative Intelligence"
6. Dhananjay Dileep, F2021, "Lifecycle analysis of bioplastic production"
7. Yahan Chang, F2019, "Lifecycle analysis of anaerobic digestion systems"
8. Swathy Vidyadharan, F2019, "Chemical process design and simulation"
9. Tamara Mull, S2019, "ME 545 X course design"

10. Bhairav Ramanathan, S2019, "Carbon fiber techno-economic analysis"
11. Irene Mas-Martin, S2019, "Lifecycle analysis of anaerobic digestion systems"
12. Ahmed Gesalla, S2019, "Lifecycle analysis with GREET"
13. Billy Noy, F2018, "Life cycle analysis"
14. Tamara Mull, F2018, "Thermal Systems Design"
15. Joshua Wendel, F2016, "Biomass to chemicals by electrolysis"
16. Tyler Hoth, F2016, "CO2 to fuels via electrolysis"
17. Alvina Aui, F2016, "Life cycle analysis of biogas systems"
18. Denis Bbosa, F2014, "Bio-oil analysis techniques"
19. Ahmad Bajan, S2014, "Process modeling of empty fruit bunch pyrolysis"
20. Andrew Peterson, F2015, "Heat carrier regeneration and combustion"
21. Levi Neumann, F2014, "Biomass pyrolysis oil production and analysis"
22. Taylor Clark, SS2014-F2014, "Biomass pyrolysis oil production and analysis"
23. Megan Anderson, SS2014, "Techno-economic analysis of biofuel pathways"
24. Emily Hansen, S2013-S2014, "Bio-oil laboratory analysis"
25. Mitch Amundson, F2013-SS2014, "Pyrolysis reactor experiments"
26. Kaiyu Li, SS2013, "Biorefinery process design"
27. Colton Kennedy, F2012, "Particle swarm optimization for biofuel system analysis"
28. Zihao Zhao, F2012, "Solar-based steam-methane reforming system design"

G. Non-ISU Instruction (e.g. Short Courses, Workshops, Training)

Mba Wright, Mark. Techno-economic analysis with Aspen Plus. North Carolina A&T July 2020, 2021, 2022

IV. INSTITUTIONAL SERVICE

A. University-Level Service

Service/Committee	Dates	Description
Distinguished Researcher Advisory Committee	Spring 2025-Present	Participated in discussions regarding research funding

Service/Committee	Dates	Description
Building Naming Committee	Fall 2019-Fall 2021	Participated in the naming of several buildings on campus
Emerging Leaders Academy	Fall 2019-Fall 2020	Participated in University Leadership activities
George Washington Carver Faculty Council	Fall 2018-Spring 2025	
BEI Faculty Advisory Board	Fall 2012-Spring 2015	Helped discuss future directions for the Bioeconomy Institute
BRT Graduate Education Committee	Spring 2013-2016	Participated in meetings discussing the BRT graduate program
Engineers Without Borders	Fall 2013-Fall 2021	Advised student chapter on projects and activities

B. College-Level Service

Service/Committee	Dates	Description
College of Engineering Honors Program Committee	Fall 2019-Present	Reviewed student honors program activities
College of Engineering Student Success Committee	Fall 2022-Present	Helped in developing programs to support student success
College of Engineering Dean Search Committee	Fall 2018-Spring 2019	Helped in the search for a Dean of the College

C. Department-Level Service

Service/Committee	Dates	Description
Chair ME Committee on Community Success	Fall 2021-Present	Helped improve recruitment and retention of students, faculty, and staff
Director of Graduate Education Energy Systems Engineering	Fall 2018-Present	Mentored undergraduates and graduate students in the ME ESE program
ME Graduate Curriculum and Assessment Committee	Fall 2018-Spring 2019	Discussed graduate curriculum and development
ME Energy Curriculum Development Committee	Fall 2018-Present	Helped keep the energy curriculum up to date
ME Graduate Curriculum and Assessment Committee	Fall 2016	Discussed graduate curriculum and development
ME 231/332 CDC	Fall 2013-Spring 2015	Chaired and served in the Thermodynamics ME 231/332 Curriculum Development Committee
ME Undergraduate Curriculum and Assessment Committee	Spring 2014-Spring 2015	Member Energy Systems Undergraduate Curriculum and Assessment Committee
ME Faculty Search Committee	Fall 2014-Spring 2015	Helped review and select faculty candidates for interviews

D.

V. PROFESSIONAL SERVICE

A. Editorial and Review Service for Manuscripts

BioEnergy Research Journal Co-Chief Editor Board

Sustainability Science and Technology Editorial Board

Energy Technology Journal Editorial Board

Frontiers Journal Editorial Board

Journal/Agency	Reviews
ACS Environmental Science & Technologies	1
ACS Sustainable Chemistry & Engineering	38
Algal Research	3
Applied Energy	4
Biochemical Engineering Journal	1
Bioenergy Research	5
Biofuels Bioproducts and Biorefining	26
Biomass and Bioenergy	3
Biomass Conversion and Biorefinery	3
Bioresource Technology	10
Biotechnology for Biofuels	2
ChemChemSusChem	1
Computers & Chemical Engineering	2
Current Opinion in Biotechnology	2
Egyptian Journal of Petroleum	1
Energies	1
Energy	5
Energy and Fuels	6
Energy Conversion and Management	5
Energy Policy	2
Energy Reports	1
Energy Technology	4
Environmental Research Letters	1
Environmental Science and Pollution Research	1
Environmental Science and Technology	4
Frontiers in Energy	4
Fuel	5
Fuel Processing Technology	4
GCB-Bioenergy	1
Green Chemistry	27
Industrial and Engineering Chemistry Research	7
Industrial Crops and Products	1

Journal/Agency	Reviews
Information Processing in Agriculture	2
International Journal of Energy Research	1
International Journal of Greenhouse Gas Control	1
International Journal of Hydrogen Energy	1
iScience	1
Joule	2
Journal of Advanced Manufacturing and Processing	2
Journal of Analytical and Applied Pyrolysis	6
Journal of Cleaner Production	8
Journal of CO2 Utilization	4
Journal of Industrial Ecology	1
Natural Sciences and Engineering Research Council of Canada	1
Nature	1
Nature Communications	3
Nature Catalysis	1
One Earth	1
Powder Technology	2
Renewable and Sustainable Energy Reviews	1
Renewable Energy	4
Sustainable Energy Technology Assessments	4
The Journal of Supercritical Fluids	1
Waste and Biomass Valorization	2
Wichita State University	1
ACS Chemical Health & Safety	2
RSC Sustainability	7
Sustainability Science and Technology	2
Sustainable Energy & Fuels	1
Sustainable Food Technology	1
Engineering Research Express	1
Total	**265**

B. Service to Professional Societies

1. Institute for Sustainability, Board Member, (2024-Present)
2. American Institute of Chemical Engineers, President and Programming Chair of the Sustainable Biorefineries Energy Forum (2021-2023)
3. American Institute of Chemical Engineers, President and Programming Chair of the Sustainable Biorefineries Energy Forum (2019-2021)

4. American Institute of Chemical Engineers, Chair of the Sustainable Biorefineries Energy Forum (2017-)
5. American Institute of Chemical Engineers, Co-Chair of the Sustainable Biorefineries Energy Forum (2016-2017)
6. American Institute of Chemical Engineers, Chair of Biofuels production: design, simulation, and economic analysis oral session (2013-2016)
7. American Institute of Chemical Engineers, Chair of Sustainability Poster session (2013-2016)
8. RCN Pan-American Chair Technological Innovation in Biofuel and Bioenergy Sustainability (2014, 2016)

C. Grant Review Activities

1. National Science Foundation Graduate Research Fellowship Program (GRFP), Chemical Engineering Panel 02/19/2026
2. USDA NIFA AFRI Social Implications of Emerging Technologies Program Review Panel 02/17/2026 - 02/20/2026
3. US Department of Energy, Office of Science (BER), Great Lakes Bioenergy Research Center (GLBRC) Progress Review Panel 01/06/2026 - 01/07/2026
4. USDA NIFA AFRI Social Implications of Food and Agricultural Technology Panel 06/23/2025 - 06/24/2025
5. National Science Foundation GRFP 1/24/25
6. National Science Foundation GCR 4/28/25
7. US Department of Agriculture AFRI 2/26/25
8. Hong Kong Research Grants Council 3/5/25
9. US Department of Agriculture Biobased New Uses 3/13/25
10. Natural Sciences and Engineering Research Council of Canada (NSERC) Alliance 02/15/2024
11. US Department of Energy Research Center Review Panel 01/16/2024-01/18/2024
12. National Science Foundation BioPACIFIC MIP Site Visit 01/22/2024-01/24/2024
13. National Science Foundation GRFP 01/08/2024
14. US Department of Agriculture SBIR Panel 11/28/2023-12/01/2023
15. Kuwait Foundation for the Advancement of Science Review 09/25/23

16. National Science Foundation Panel Review 06/29/2022
17. United States Department of Agriculture Economic Research Service 2/21/2021
18. National Science Foundation Panel Review 06/28/2021
19. National Science Foundation Panel Review 01/12/2021
20. United States Department of Agriculture Economic Research Service 3/20/2020
21. Wichita State University Tenure and Promotion 08/10/2019
22. Natural Sciences and Engineering Research Council of Canada 12/28/2019
23. Natural Sciences and Engineering Research Council of Canada 11/13/2018
24. Kentucky Science & Technology Corporation 6/1/2018
25. National Science Foundation INFEWS Program Panel Member 04/12/2016 - 04/18/2016
26. Bioenergy Technologies Office (BETO) Merit Review 04/30/2015 - 05/15/2015
27. Bioenergy Technologies Office (BETO) Peer Review 03/23/2015 - 03/27/2015
28. National Science Foundation Research Traineeship [NRT] Program Panel Member 09/04/2014-09/05/2014

D. Other Professional Service

- Consulting for Charm Industrial, LLC on the economics of pyrolysis systems for well applications (2023-2025)
- Consulting for B&W on the emissions of chemical looping systems for hydrogen production (2023-2025)
- Consulting for American Chemistry Society on bioplastics (2024-2025)

VI. OUTREACH, COMMUNITY ENGAGEMENT AND OTHER ACTIVITIES

A. Other Activities

1. Iowa Alpha Tau Beta Pi Chapter Faculty Advisor
2. Engineering Ambassadors Network Faculty ISU-ME Chapter Faculty Advisor

3. Chair of the Mechanical Engineering Student Success Committee
4. Member of the College of Engineering Student Success Committee
5. George Washington Carver Faculty Council Committee Member