

Guiping Hu

3014 Black Engineering, Iowa State University, Ames IA 50011

Phone: 515-294-8638, Email: gphu@iastate.edu
<http://www.imse.iastate.edu/directory/faculty/guiping-hu/>

EDUCATIONAL BACKGROUND

Ph.D., Industrial Engineering, University of Pittsburgh, 2009
M. S., Industrial Engineering, University of Pittsburgh, 2006
B.E., Management Science, University of Science and Technology of China, 2004
B.S., Automation, University of Science and Technology of China, 2003

ACADEMIC POSITIONS

- Associate Professor, Industrial and Manufacturing Systems Engineering, Bioinformatics and Computational Biology, Graduate Program for Sustainable Agriculture, Bioeconomy Institute, Iowa State University, 2016-present
- Assistant Professor, Industrial and Manufacturing Systems Engineering, Graduate Program for Sustainable Agriculture, Bioeconomy Institute, Iowa State University, 2011-2016
- Lecturer, Industrial and Manufacturing Systems Engineering, Iowa State University, 2009 – 2011

HONORS, RECOGNITIONS, AND OUTSTANDING ACHIEVEMENTS

Mid-Career Achievement in Research Award, ISU, 2019
Plant Sciences Institute Scholar, ISU, 2018-2021
CleanTech Fellowship Award, NSF, 2011
Book Scholarship Award, University of Pittsburgh, 2006
Meeting of the Minds Competition Award, Great Global Sustainability Challenge, 2006
Best Engineering Award, Asia-Pacific Robot Contest, 2003

RESEARCH GRANTS (\$10,380,677 TO ISU, MY SHARE \$3,250,417)

34. "Modulating the Maize Microbiome to Optimize Nitrogen Use Efficiency," 3/2021 - 3/2024. Total: \$750,000, my share: \$150,000. PI: Larry Halverson. Co-PI: Guiping Hu, Michael Castellano, Thomas Lubberstedt, and Basil Nikolau.
33. A System Engineering Approach to Advance Plant Breeding Process through Optimized Management and Planning, Phase II, Plant Sciences Institute, 2/1/21-1/30/24, Principal Investigator (PI). Total: \$255,000, my share: \$255,000.
32. Data Analytics Proposal: A Machine Learning Approach to Identify the Risk of Sudden Death Syndrome in Soybean Fields, *IMSE ERP*, 8/15/20-12/31/20, PI. Total: \$15,000, my share: \$15,000.
31. "Deep Learning Methods to Personalize Antibody Therapeutics for Delaying Viral Rebound after Cessation of ART," 3/2020 – 10/2021. Total \$150,000, my share: 50,000. PI: Hillel Haim (UIowa). Co-PI: Guiping Hu and Benjamin Darbro (UIowa).

30. LEAP-HI/GOALI: INTERN supplement, National Science Foundation, 1/1/20-5/31/20, co-Principal Investigator (co-PI). Total: \$60,000, my share: \$15,000.
29. Data Analytics Proposal: A Machine Learning Approach to Predict Volatility for Personalize Antiviral Treatment, *IMSE ERP*, 8/15/19-12/31/19, PI. Total: \$15,000, my share: \$15,000.
28. Anomaly Detection in Manufacturing Process with Data Analytics, *NSF Center for e-Design*, 6/1/19-12/31/19, PI. Total: \$15,000, my share: \$10,000.
27. BTT EAGER: Improving Crop Yield Prediction by Integrating Machine Learning with Process-Based Crop Models, National Science Foundation, 2/1/19-1/31/22, co-Principal Investigator (co-PI). Total: \$300,000, my share: \$60,000.
26. LEAP-HI/GOALI: Engineering Crops for Genetic Adaptation to Changing Enviroments, National Science Foundation, 9/1/18-8/31/23, co-Principal Investigator (co-PI). Total: \$2M, my share: \$500,000.
25. A System Engineering Approach to Advance Plant Breeding Process through Optimized Management and Planning, Phase I, Plant Sciences Institute, 2/1/18-1/30/21, Principal Investigator (PI). Total: \$255,000, my share: \$255,000.
24. Development and Evaluation of Improved Strategies for Genomic Selection via Simulations and Empirical Testing, *AFRI, United State Department of Agricultural*, 1/15/17-1/15/20, co-Principal Investigator (co-PI). Total: \$733,000, my share: \$244,000.
23. A Farm-level Precision Land Management Framework Based on Mathematical Programming, *D3AI presidential Program*, 1/15/17-5/15/17, Principal Investigator (PI). Total: \$25,000, my share: \$25,000.
22. Airplane Painting Capacity & Planning Tool, *Boeing Analytics Research Scholars Program*, 10/15/15-11/15/16, co-PI. Total: \$79,408, my share: \$19,852.
21. Real-time Inventory Control under Autonomous and Coordinated Mechanisms, *NSF Center for e-Design*, 1/16/16-1/15/18, co-PI. Total: \$100,000, my share: \$40,000.
20. FactBoard: Real-Time Data Driven Visual Decision Support System for the Factory Floor, *Digital Manufacturing and Design Innovation Institute*, 3/15/16-3/15/18, Principal Investigator (PI). Total: \$2,537,893, my share: \$394,169.
19. Real-time Shop Floor Production Planning and Optimization under Uncertainty, *NSF Center for e-Design*, 8/16/15-8/15/17, PI. Total: \$80,000, my share: \$40,000.
18. Data Driven Highway Infrastructure Resilience Assessment, *Midwest Transportation Consortium*, 8/16/15-8/15/17, PI. Total: \$200,000, my share: \$100,000.
17. Agent-Based Modeling for the Behavior and Decisions of the Stakeholders along the Biofuel Supply Chain, *Bioeconomy Institute*, 8/16/14-8/15/15, PI. Total: \$33,000, my share: \$33,000.

16. Data Driven Highway Infrastructure Resilience Assessment, *Midwest Transportation Consortium*, 8/15/14-8/15/15, PI. Total: \$50,000, my share: \$30,000.
15. Integrated Sustainable Bioenergy Pathway, *Baker Council*, 1/1/14-12/31/17, co-Principal Investigator (co-PI). Total: \$1,480,000, my share: \$370,000.
14. System Analysis and Optimization Design for Manufacturing Supply Chain, *NSF Center for e-design*, 1/1/14-12/31/15, PI. Total: \$100,000, my share: \$60,000.
13. Comparing the Relationship between Systems Engineering Processes and Project Success in Commercial and Government Research and Development Efforts, *National Aeronautics and Space Administration (NASA)*, 10/1/12-5/31/14, co-PI. Total: \$40,000, my share: \$13,400.
12. System Analysis and Optimization Design for Manufacturing Supply Chain, *NSF Center for e-design*, 9/1/12-12/31/13, PI. Total: \$44,000, my share: \$44,000.
11. Iowa Sustainable Energy Pathway (ISEP): Building a team to address the complete biofuels supply chain, *Plant Science Institute*, 7/1/12-6/30/13, co-PI. Total: \$50,000, my share: \$10,000.
10. DOE PNNL ISU Joint TEA analysis for the thermochemical pathways, *Department of Energy*, 10/1/12-9/30/13, PI. Total: \$100,000, my share: \$70,000.
9. Travel Grant on Energy Policy Analysis, *NSF Iowa EPSCoR*, 5/1/12- 4/30/15, PI. Total: \$24,000, my share: \$24,000.
8. Experiments, Technoeconomics and Optimization of Bioenergy Systems based on Bio-oil Gasification, *Iowa Energy Center*, 7/1/12-6/30/15, co-PI. Total: \$467,573, my share: \$116,893.
7. Graduate Student Fellowship on Renewable Energy Policy Analysis, *NSF Iowa EPSCoR*, 5/1/12-9/1/12, PI. Total: \$22,950, my share: \$22,950.
6. International Collaboration on Bioenergy System Analysis, *ISU IMSE Innovation Initiative*, 4/1/12-7/1/12, PI. Total: \$10,000, my share: \$5,000.
5. Department of Energy PNNL ISU Joint TEA analysis for advanced biofuel production, *Department of Energy*, 10/1/11-9/30/12, PI. Total: \$100,000, my share: \$70,000.
4. Signature Program on Bioenergy System Analysis: Mathematical Modeling and Optimization Infrastructure for Emerging Biorenewable Energy Systems, *Bioeconomy Institute*, 7/1/11- annual renewal, PI. Total: \$30,000, my share: \$10,000.
3. Cheap Sugars for Sustainable Biofuels Production - Brazil vs. U.S., *Biobased Industry Center*, 7/1/11-6/30/12, PI. Total: \$25,000, my share: \$12,500.
2. Techno-economic and Lifecycle Analysis on Energy Pathways, *Bioeconomy Institute*, 7/1/11-6/30/13, PI. Total: \$150,000, my share: \$150,000.

1. Mapping Potential Foodsheds in Iowa: A System Optimization Modeling Approach, *Leopold Center for Sustainable Agriculture*, 2/1/10-1/31/12, PI. Total: \$74, 825, my share: \$20,496.

TEACHING EXPERIENCE

- IE587 Big Data Analytics and Optimization, Fall 2018, Fall 2019, Fall 2020
- IE312 Optimization, Iowa State University, Fall 2015, Fall 2016, Fall 2017, Fall 2018
- IE514 Production Scheduling, Iowa State University, Spring 2013, Spring 2014, Spring 2015, Spring 2016, Spring 2018, and Spring 2019
- IE515x Markov Decision Processes, Iowa State University, Spring 2012
- IE305 Engineering Economic Analysis, Iowa State University, Fall 2009, Fall 2010, Spring 2011, Fall 2011, Fall 2012, Fall 2013, Fall 2014, Fall 2016, Fall 2019, Fall 2020
- SCM301 Supply Chain Management, Iowa State University, Fall 2010
- LSCM360 Logistics and Supply Chain Management, Iowa State University, Summer 2010
- Engr160 Engineering Problem Solving with Computer Applications, Iowa State University, Spring 2009, Fall 2009, Spring 2010, Fall 2010, and Fall 2013
- Plus 3 China, University of Pittsburgh and Tsinghua University, Summer 2007

JOURNAL PUBLICATIONS (# OF CITATIONS 1880 AS OF 12/31/2020)

†: graduate student under my supervision

- 70: †Saba Moeinizade, Ye Han, Hieu Pham, Guiping Hu, Lizhi Wang, “A Look-ahead Monte Carlo Simulation Method for Improving Parental Selection in Trait Introgression,” *Scientific Reports*, in press, 2020.
- 69: †Viren Parwani and Guiping Hu, “Improving Manufacturing Supply Chain by Integrating SMED and Production Scheduling,” *Logistics*, in press, 2020.
- 68: †Mohsen Shahhosseini, Guiping Hu, Ishiah Huber, and Sotirios Archontoulis, “Coupling Machine Learning and Crop Modeling Improves Crop Yield Prediction in the US Corn Belt,” *Scientific Reports*, in press, 2020.
- 67: †Luning Bi, Guiping Hu, Muhammad Mohsin Raza, Yuba Kandel, Leonor Leandro, Daren Mueller, “A Gated Recurrent Units (GRU)-based model for early detection of soybean sudden death syndrome through time-series satellite imagery,” *Remote Sensing*, in press, 2020.
- 66: † Mahsa Amini and Guiping Hu, “A Hybrid Two-layer Feature Selection Method Using Genetic Algorithm and Elastic Net,” *Expert Systems With Applications*, in press, 2020.
- 65: Preetam Kulkarni, †Vahid Azizi, Guiping Hu, and Lizhi Wang, “Analysis of decision making and information sharing strategies in a two-echelon supply chain,” *International Journal of Supply Chain and Inventory Management*, in press, 2020.
- 64: †Sidharth Sankhye and Guiping Hu, “Machine Learning Methods for Quality Prediction in Manufacturing Inspection,” *Logistics*, 2020, 4(4), 35; <https://doi.org/10.3390/logistics4040035>.

- 63: ⁺Luning Bi and Guiping Hu, “Improving image-based plant disease classification with generative adversarial network under limited training set,” *Frontiers in Plant Science*, <https://doi.org/10.3389/fpls.2020.583438>, 2020.
- 62: [†] Shiyang Huang and Guiping Hu, “Job shop scheduling with AGVs under variable processing time,” *International Journal of Production and Scheduling*, 2020.
- 61: [†]Mohsen Shahhosseini, Guiping Hu, and Sotirios Archontoulis, “Forecasting corn yield with machine learning ensembles,” *Frontiers in Plant Science*, 2020. DOI: 10.3389/fpls.2020.01120.
- 60: [†]Saba Moeinizade, ⁺Aaron Kusmec, Guiping Hu, Lizhi Wang, and Patrick Schnable, “Multi-trait Genomic Selection Methods for Crop Improvement,” *Genetics*, 10.1534/genetics.120.303305, 2020.
- 59: [†] Mohsen Shahhosseini and Guiping Hu, “Machine learning models for corn yield prediction: A survey of literature,” *International Journal of Environmental Sciences & Natural Resources*, 25(3): 556161. DOI: 10.19080/IJESNR.2020.25.556161, 2020.
- 58: * [†] Qi Li and Guiping Hu, “Multistage stochastic programming modeling for farmland irrigation management under uncertainty”, *Plos One*, <https://doi.org/10.1371/journal.pone.0233723>, 2020.
- 57: * [†] Vahid Azizi and Guiping Hu, “A two-stage stochastic programming model for multi-period reverse logistics network design with lot-sizing”, *Computers & Industrial Engineering*, Volume 143, May 2020, 106397.
- 56: * [†] Vahid Azizi and Guiping Hu, “Multi-product pickup and delivery supply chain design with location-routing and direct shipment,” *International Journal of Production Economics*, Volume 226, 107648, 2020.
- 55: * [†] Zhengyang Hu, Goutham Ramraj, and Guiping Hu, “Production Planning with a Two-Stage Stochastic Programming Model in a Kitting Facility Under Demand and Yield Uncertainties,” *International Journal of Management Science and Engineering Management*, <https://doi.org/10.1080/17509653.2019.1710301>, 2020.
- 54: * [†] Zhengyang Hu and Guiping Hu, “Hybrid stochastic and robust optimization model for lot-sizing and scheduling problem under uncertainty,” *European Journal of Operational Research*, Volume 284, Issue 2, 16 July 2020, Pages 485-497.
- 53: * [†] Saba Moeinizade, Megan Wellner, Guiping Hu, and Lizhi Wang, “Complementarity-based Selection Strategy for Genomic Selection,” *Crop Science*, <https://doi.org/10.1002/csc2.20070>, 2020.
- 52: * [†]Mohsen Shahhosseini, Rafael Martinez-Feria, Guiping Hu, Sotirios Archontoulis, "Maize yield and nitrate loss prediction with machine learning algorithms", *Environmental Research Letters*, Volume 14, Number 12, 2019.
- 51: * [†] Vahid Azizi and Guiping Hu, “A branch and bound algorithm to solve a two-machine no-wait flowshop scheduling problem with truncated learning function,” *International Journal of*

Management Science and Engineering Management, DOI: 10.1080/17509653.2019.1633965, 2019.

50: * † Saba Moeinizade, Guiping Hu, Lizhi Wang, and Patrick Schnable, “Optimizing Selection and Mating in Genomic Selection with a Look-ahead Approach: An Operations Research Framework,” *G3: Genes/Genomes/Genetics*, July 2019 9: 2123-2133.

49: * † Zhengyang Hu, Ronald Askin and Guiping Hu, “Hub Relay Network Design for Daily Driver Routes,” *International Journal of Production Research*, Volume 57, 2019 - Issue 19.

48: *†Shiyang Huang and Guiping Hu, “Automated Guided Vehicle Dispatching Based on Combinatorial Optimization to Minimize Job Waiting Time on Shop Floors,” *International Journal of Planning and Scheduling*, Vol.3 No.1, pp.28 – 46, 2019.

47: *†Xiaoya Han, Yugang Yu and Guiping Hu, “A dynamic newsvendor problem with goodwill-dependent demands and minimum commitment,” *Omega*, <https://doi.org/10.1016/j.omega.2018.10.012>, Volume 89, December 2019, Pages 242-256.

46: * † Goutham Ramraj, Zhengyang Hu, and Guiping Hu, “A Two-Stage Stochastic Programming Model for Production Lot-Sizing and Scheduling Under Demand and Raw Material Quality Uncertainties,” *International Journal of Planning and Scheduling*, 2019 Vol.3 No.1, pp.1 - 27.

45: * Katrina Christiansen, David Raj Raman, Guiping Hu, Robert Anex, “First-Order Estimates of the Costs, Input-Output Energy Analysis, and Energy Returns on Investment of Conventional and Emerging Biorenewable Feedstocks,” *Biofuel Research Journal*, 20 (2018) 894-899.

44: * † Zhengyang Hu, and Guiping Hu, “A Multi-stage Stochastic Programming for Lot-sizing and Scheduling under Demand Uncertainty,” *Computers & Industrial Engineering*, Volume 119, 2018, Pages 157-166, 2018.

43: Mohammad Rahdar, Lizhi Wang, Guiping Hu, "A Tri-Level Optimization Model for Inventory Control with Uncertain Demand and Lead Time", *International Journal of Production Economics*, vol. 195(C), pages 96-105, 2018.

42: Shiyang Huang and Guiping Hu, “Biomass Supply Contract Pricing and Environmental Policy Analysis: An Agent-based Simulation Approach”, *Energy*, Vol.145 pp.557-566, 2018.

41: * †Yihua Li and Guiping Hu, “Shop Floor Lot-sizing and Scheduling with a Two-stage Stochastic Programming Model Considering Uncertain Demand and Workforce Efficiency,” *Computers & Industrial Engineering*, Vol 111, pp 263-271, 2017.

40: Matt Goiffon, Aaron Kusmec, Lizhi Wang, Guiping Hu, and Patrick Schnable, "Improving Response in Genomic Selection with Optimal Population Value Selection: a Population-Based Selection Strategy," vol. 206 no. 3, 1675-1682, *Genetics*, 2017.

- 39: †Qi Li, Guiping Hu, Talukder Zaki Jubery, and Baskar Ganapathysubramanian, “A Farm-level Precision Land Management Framework Based on Integer Programming”, 12(3): e0174680, *Plos One*, 2017.
- 38: †Shiyang Huang, Guiping Hu, Carrie Chennault, Liu Su, Elke Brandes, Emily Heaton, Lisa Schulte, Lizhi Wang, and John Tyndall, “An Agent-Based Simulation Model of Farmer Decision Making on Bioenergy Crop Adoption”, *Energy*, Vol 115 (1), pp 1188-1201, 2016.
- 37: * Yugang Yu, †Xiaoya Han, and Guiping Hu, “Optimal production for manufacturers considering consumer environmental awareness and green subsidies,” *International Journal of Production Economics*, Vol 182, pp 397-408, 2016.
- 36: * † Zhengyang Hu, and Guiping Hu, “A two-stage stochastic programming model for lot-sizing and scheduling under uncertainty,” *International Journal of Production Economics*, Vol 180, pp 198-207, 2016.
- 35: * †Qi Li and Guiping Hu, “Techno-economic analysis of biofuel production considering logistic configurations,” *Bioresource Technology*, 206 (2016): 195-203, 2016.
- 34: * ‡Yong Ye, Nan Liu, Guiping Hu, and Sha-lei Zhan, “Follow-up sharing character-based optimal scheduling of resource distribution for post-event response in large-scale disasters,” *Journal of System Science and System Engineering*, 2016, 25(1), 77-101.
- 33: *†Mostafa Fawzy, Paul Componation, and Guiping Hu, “Stakeholders' requirements assessment for biofuel production,” *International Journal of Science and Research*, Vol 4 (11), 2015.
- 32: * †Yihua Li, Guiping Hu, and Mark Wright, “An optimization model for sequential fast pyrolysis facility location-allocation under RFS2,” *Energy*, vol. 93, issue P1, pages 1165-1172, 2015.
- 31: * †Yihua Li, Chung-Li Tseng, and Guiping Hu, “Is now a good time for Iowa to invest in cellulosic biofuels?: A Real Options approach considering construction lead times,” *International Journal of Production Economics*, Vol 167, 97-107, 2015.
- 30: * †Qi Li, †Yanan Zhang, and Guiping Hu, “Techno-economic analysis of advanced biofuel production based on bio-oil gasification,” *Bioresource Technology*, Vol 191, 88-96, 2015.
- 29: * †Narges Kazemzadeh and Guiping Hu, “Evaluation of the impacts of governmental policies on the biofuels supply chain design under uncertainty,” *International Journal of Sustainable Economy*, Vol 7, Issue 3, 203-219, 2015.
- 28: * †Qi Li and Guiping Hu, “Supply chain design under uncertainty for advanced biofuel production based on bio-oil gasification,” *Energy*, Vol 74, 576-584, 2014.

- 27: * †Yanan Zhang, Guiping Hu, and Robert Brown, “Life cycle assessment of commodity chemicals production from forest residue via fast pyrolysis,” *The International Journal of Life Cycle Assessment*, Vol 19 (7), 1371-1381, 2014.
- 26: * ‡Rajeeva Tilakaratne, ‡Tristan Brown, †Yihua Li, Guiping Hu, and Robert Brown, “Mild catalytic pyrolysis of biomass for production of transportation fuels: a techno-economic analysis,” *Green Chemistry*, Vol 16, 627-636, 2014.
- 25: * †Yanan Zhang, Guiping Hu, and Robert Brown, “Integrated supply chain design for commodity chemicals production via woody biomass fast pyrolysis and upgrading,” *Bioresource Technology*, Vol 157, 28-36, 2014.
- 24: * †Longwen Ou, ‡Tristan Brown, ‡Rajeeva Thilakaratne, Guiping Hu, and Robert Brown, “Techno-economic Analysis of Co-located Corn Grain and Corn Stover Ethanol Plants,” *Biofuels, Bioproducts and Biorefining*, Vol 8 (3), 412-422, 2014.
- 23: * Guiping Hu, Lizhi Wang, Yihsu Chen, and Bopaya Bidanda, “An oligopoly model to analyze the market and social welfare for green manufacturing industry,” *Journal of Cleaner Production*, Vol 85, 94-103, 2014.
- 22: * †Mohammad Rahdar, Lizhi Wang, and Guiping Hu, “Potential competition for biomass between biopower and biofuel under RPS and RFS2,” *Applied Energy*, Vol 119, issue c, 10-20, 2014.
- 21: * †Leilei Zhang, Guiping Hu, Lizhi Wang, and Yihsu Chen, “A bottom-up biofuel market equilibrium model for policy analysis,” *Annals of Operations Research*, DOI: 10.1007/s10479-013-1497-y, 2014.
- 20: * †Yihua Li, ‡Tristan Brown, and Guiping Hu, “An optimization model for a thermochemical biofuel supply chain network design,” *Journal of Energy Engineering*, Vol 140(4), 2014.
- 19: * †Narges Kazemzadeh and Guiping Hu, “Optimization models for biorefinery supply chain network design under uncertainty,” *Journal of Renewable and Sustainable Energy*, Vol 5(5), 2013.
- 18: * †Leilei Zhang and Guiping Hu, “Supply chain design and operational planning models for biomass to drop-in fuel production,” *Biomass and Bioenergy*, 58, 238-250, 2013.
- 17: * †Yanan Zhang, Guiping Hu, and Robert Brown, “Life cycle assessment for hydrogen and transportation fuels production from corn stover via fast pyrolysis,” *Environmental Research Letters*, Vol 8, 2013.
- 16: * ‡Tristan Brown, ‡Rajeeva Tilakaratne, Robert Brown, Guiping Hu, “Regional differences in the economic feasibility of advanced biorefineries: fast pyrolysis and hydroprocessing,” *Energy Policy*, vol 57, 234-243, 2013.

- 15: * †Yanan Zhang, ‡Tristan Brown, Guiping Hu, and Robert Brown, “Comparative technoeconomic analysis of biohydrogen production via bio-oil gasification and bio-oil reforming”, *Biomass and Bioenergy*, vol 51, 99-108, 2013.
- 14: * †Yanan Zhang, ‡Tristan Brown, Guiping Hu, and Robert Brown, “Techno-economic analysis of fast pyrolysis and upgrading facilities employing two depolymerization pathways”, *Chemical Engineering Journal*, vol 225, 895-904, 2013.
- 13: * †Minwen Yang, Guiping Hu, “Market competition and social welfare analysis for E10 and E85 with a game theory model”, *International Journal of Sustainable Economy*, Vol. 5, No. 4, 2013.
- 12: * ‡Tristan Brown, ‡Rajeeva Tilakaratne, Robert Brown, Guiping Hu, “Techno-economic analysis of biomass to transportation fuels and electricity via fast pyrolysis and hydroprocessing”, *Fuel*, 463-469, 2013.
- 11: * † Yanan Zhang, ‡Tristan Brown, Guiping Hu, and Robert Brown, “Technoeconomic analysis of mono-saccharide production via biomass fast pyrolysis”, *Bioresource Technology*, 358-365, 2013.
- 10: * ‡Martin Gaussin, Guiping Hu, Sepideh Abolghasem, Saurabh Basu, Ravi Shankar, Bopaya Bidanda, “Assessing the environmental footprint of manufactured products: a survey of current literature”, *International Journal of Production Economics*, Vol 146, Issue 2, 2013.
- 9: * Guiping Hu, “Market and Social Welfare Analysis for Hybrid Sustainable Manufacturing Industry,” *International Journal of Sustainable Manufacturing*, Vol.2, No.4, pp.338 - 355, 2012.
- 8: * ‡Tristan Brown, Yanan Zhang, Guiping Hu, Robert Brown, “Techno-economic analysis of integrated catalytic processing”, *Biofuels, Bioproducts and Biorefining*, Vol. 6, No. 1, pp. 73-87, 2012.
- 7: * ‡Tristan Brown, Guiping Hu, “Sensitivity analysis of government incentive programs for drop-in biofuel production via fast pyrolysis”, *Journal of Energy Engineering*, Vol. 137, No. 2, pp. 54-62. 2012.
- 6: * Guiping Hu, Lizhi Wang, Susan Arendt, and Randy Boeckenstedt, “Assess the self-sustainability potential of food demand in the Midwestern united states with a linear programming model”, *Journal of Agriculture, Food Systems, and Community Development*, Vol 2 (1), pp. 1-13, 2011.
- 5: * Guiping Hu, Lizhi Wang, Susan Arendt, and Randy Boeckenstedt, “Analyze sustainable, localized food production system with a systematic optimization model”, *Journal of Hunger and Environmental Nutrition*, 6:220-232, 2011.
- 4: * # Guiping Hu, Lizhi Wang, Bopaya Bidanda, “A Game Theory Model to Analyze Market Competition in Sustainable Production Industry,” *International Journal of Sustainable Manufacturing*, Vol 2 (2), pp. 161-179, 2011.

3: * # Guiping Hu, Lizhi Wang, and Bopaya Bidanda, "A market analysis on green production lines penetrating into original equipment manufacturers (OEMs)," *International Journal on Sciences of Industrial and Systems Engineering and Management*, vol. 3(3), p. 28-48, 2009.

2: * # Guiping Hu, Bopaya Bidanda, "Modeling sustainable product lifecycle decision support systems," *International Journal of Production Economics*, Vol. 122 (1), 366-375, 2009.

1: * # Guiping Hu, Lizhi Wang, Bopaya Bidanda and Steve Fetch, "A Multi-objective approach to project selection with Six Sigma criteria," *International Journal of Production Research*, 46(23), p. 6611-6625, 2008.

BOOK CHAPTER

4. Mohsen Shahhosseini, Guiping Hu, and Hieu Pham, "Optimizing Machine Learning Bias and Variance with Ensembles Weights", *Smart Service Systems, Operations Management, and Analytics*, Springer, 2020.

3. Saba Moeinizade and Guiping Hu, "Predicting Metropolitan Crime Rates Using Machine Learning Techniques", *Smart Service Systems, Operations Management, and Analytics*, Springer, 2020.

2. Vahid Azizi and Guiping Hu, "Machine learning methods for revenue prediction in the Google Merchandise Store", *Smart Service Systems, Operations Management, and Analytics*, Springer, 2020.

1. Guiping Hu, Lizhi Wang, Bopaya Bidanda, "Sustainable manufacturing & project management circa 2025," Book Chapter, Project Management Circa 2025, 2009.

CONFERENCE PROCEEDINGS

42. +Mohsen Shahhosseini and Guiping Hu, "Improved weighted random forest for classification problems," International Conference on Intelligent Decision Science (IDS - 2020), 2020.

41. Luning Bi and Guiping Hu, "A LSTM-based prediction model for soybean SDS with satellite imagery," IISE annual conference, 2020.

40. Carl Kirpes, Dave Sly, and Guiping Hu, "Value of the 3D Product Model use in Assembly Processes", IISE annual conference, 2020.

39. Luning Bi and Guiping Hu, "Improving Plant Disease Recognition With Generative Adversarial Network Under Limited Training Set," International Workshop on Machine Learning for Cyber-Agricultural Systems, 2019.

38. Mohsen Shahhosseini, Guiping Hu, and Hieu Pham, "Optimizing Machine Learning Bias and Variance with Ensembles Weights", INFORMS Conference on Service Science, June 2019.

37. Saba Moeinizade and Guiping Hu, "Predicting Metropolitan Crime Rates Using Machine Learning Techniques", INFORMS Conference on Service Science, June 2019.
36. Vahid Azizi and Guiping Hu, "Machine learning methods for revenue prediction in the Google Merchandise Store", INFORMS Conference on Service Science, June 2019.
35. Saba Moeinizade, Lizhi Wang, and Guiping Hu, "Improving Response in Genomic Selection with a Look-ahead Approach," Industrial and Systems Engineering Research Conference, May 2018.
34. Megan Wellner, Saba Moeinizade, Guiping Hu, and Lizhi Wang, "Gender-based Selection Strategy for Genomic Selection," Industrial and Systems Engineering Research Conference, May 2018.
33. Colin Brown, Shiyang Huang and Guiping Hu, "AGV Reduction Algorithm for Shop Floor Optimization," Industrial and Systems Engineering Research Conference, May 2018.
32. Zhengyang Hu, and Guiping Hu, "Hybrid robust and stochastic programming for lot-sizing and scheduling problem," Industrial and Systems Engineering Research Conference, May 2018.
31. Zhengyang Hu, Ronald G. Askin, and Guiping Hu, "Logistic Network Design for Daily Cyclic Truck Routes", INFORMS Transportation and Logistics Society Conference, 2017.
30. Michael Helwig, David P. Sly, and Guiping Hu, "Improving the Efficiency of Large Manufacturing Assembly Plants," International Conference on Flexible Automation and Intelligent Manufacturing, June 2017.
29. Shiyang Huang, and Guiping Hu, "Shop Floor AGV Assignment Optimization under Uncertainty," Industrial and Systems Engineering Research Conference, May 2017.
28. Zhengyang Hu, and Guiping Hu, "Multi-stage Lot-sizing and Scheduling under Demand Uncertainty," Industrial and Systems Engineering Research Conference, May 2017.
27. Goutham Ramaraj, Zhengyang Hu, and Guiping Hu, "Lot Sizing and Scheduling of a Multi-Stage Manufacturing System Under Uncertainty," Industrial and Systems Engineering Research Conference, May 2017.
26. Preetam Kulkarni, Maryam Nikouei-Mehr, Lizhi Wang, and Guiping Hu, "Production Planning of a Three-echelon Supply Chain with Information Sharing," Industrial and Systems Engineering Research Conference, May 2017.
25. Michelle Zugg, Goutham Ramaraj, Ge Guo, Maryam Nikouei-Mehr, Guiping Hu, Caroline C. Krejci, David P. Sly, Sarah M. Ryan, Lizhi Wang, and Michael Helwig, "A Preliminary Case Study for FactBoard, a Decision Support System," Industrial and Systems Engineering Research Conference, May 2017.
24. Minxiang Zhang, Cameron Mackenzie, Caroline Krejci, John Jackman and Guiping Hu, "Probabilistic methods for long-term demand forecasting for aviation production planning," Industrial and Systems Engineering Research Conference, May 2017.

23. Xiangzhen Li, Caroline Krejci, Cameron Mackenzie, John Jackman and Guiping Hu, "Capacity Planning and Production Scheduling for Aircraft Painting Operations," Industrial and Systems Engineering Research Conference, May 2017.
22. Alexandra Olsen and Guiping Hu, "Analysis of surgery scheduling policies using discrete event simulation," Industrial and Systems Engineering Research Conference, May 2016.
21. Alexandra Olsen and Guiping Hu, "Statistical methods for surgery duration estimation," Industrial and Systems Engineering Research Conference, May 2016.
- 20: * †Yihua Li, and Guiping Hu, "A sequential fast pyrolysis facility location-allocation model", APMS International Conference: Advances in Production Management Systems: Sustainable Production and Service Supply Chain, Sept. 2013.
- 19: * †Qi Li, and Guiping Hu, "An optimization model for advanced biofuel production based on bio-oil gasification", APMS International Conference: Advances in Production Management Systems: Sustainable Production and Service Supply Chain, Sept. 2013.
18. Chung-Li Tseng, †Yihua Li, and Guiping Hu, "Water efficient technology adoption considering climate change: a real options approach", Smart Water International Conference, November 2013.
17. Paul J. Componation, Michael Dorneich, Guiping Hu, Phillip A. Farrington, and Jordan L. Hansen, "Systems engineering and project success in government and commercial organization", American Society for Engineering Management, October 2013.
16. Paul Componation, Michael Dorneich, Guiping Hu, and Gillian Nicholls, "Applying alternative decision-making approaches to a complex supplier selection problem", Industrial and Systems Engineering Research Conference, May 2013.
15. Guiping Hu, Randy Boeckenstedt, Bopaya Bidanda, "Measuring transportation dependency for customer centric manufacturing", The 45th CIRP Conference on Manufacturing Systems: The Challenge for the Manufacturing for the Future, Athens, Greece, May 2012.
14. ‡Sepideh Abolghasem, Guiping Hu, Bopaya Bidanda, Ravi Shankar, Saurabh Basu, "Sustainable design and manufacturing by mapping microstructure from severe shear deformation in machining", The 14th IFAC Symposium on Information Control for Smarter Manufacturing, Bucharest, Romania, May 2012.
13. Susan Arendt, Guiping Hu, Lizhi Wang and Randy Boeckenstedt, "Localizing food production and purchasing for schools", Food and Nutrition Conference and Expo, San Diego, CA, Sept 2011.
12. Guiping Hu, and Bopaya Bidanda, "An Oligopoly Model to Analyze the Market and Social Welfare for Green Manufacturing Industry", proceedings of International Conference on Production Research, Stuttgart, Germany, July 2011.

11. Guiping Hu, Matt Liebman, and Craig Chase, "A systematic optimization model for integration of crop and livestock systems", Proceedings of the Industrial Engineering Research Conference, Reno, Nevada, May 2011.
10. Guiping Hu, Lizhi Wang, Susan Arendt, and Randy Boeckenstedt, "A systematic optimization model for foodshed localization", Proceedings of the Industrial Engineering Research Conference, Reno, Nevada, May 2011.
9. ‡Martin Gaussin, Guiping Hu, Ravi Shankar, and Bopaya Bidanda, "Assessing the environmental footprint of manufactured products: a survey of current literature", proceedings of International Conference on Production Research, Shanghai, China, July 2009.
8. # Guiping Hu, and Bopaya Bidanda, "A product upgrade decision model for sustainable manufacturing", Proceedings of the Industrial Engineering Research Conference, Miami, Florida, May 2009.
7. # Guiping Hu, and Bopaya Bidanda, "Modeling sustainable product lifecycle decision support systems," Proceedings of International Conference on Production Research, Chile, July 2007.
6. # Guiping Hu, Lizhi Wang, Yan Wang and Bopaya Bidanda, "A new model for closed loop product lifecycle systems," Proceedings of the Industrial Engineering Research Conference, Nashville, May 2007.
5. # Guiping Hu, Lizhi Wang, and Bopaya Bidanda, "Project portfolio selection for implementing lean and six sigma concepts," Proceedings of the Industrial Engineering Research Conference, Nashville, May 2007.
4. # Guiping Hu, Lizhi Wang, and Bopaya Bidanda, "A game theoretic model of the market competition between green and ordinary products," Proceedings of the Industrial Engineering Research Conference, Nashville, May 2007.
3. Guiping Hu, Yan Wang, and Bopaya Bidanda, "Product lifecycle management systems for network-centric manufacturing," Proceedings of Industrial Engineering Research Conference, Orlando, May 2006.
2. Guiping Hu, Yan Wang, and Bopaya Bidanda, "Product lifecycle management challenges in trans-national environments," Proceedings of Industrial Engineering Research Conference, Orlando, May 2006.
1. Lizhi Wang, Guiping Hu and Zengfu Wang, "Pitch detection based on time-frequency analysis," Intelligent Control and Automation, Fifth World Congress on Volume 4, 15-19 June 2004 Page(s):3022-3026.

CONFERENCE PRESENTATIONS

Over 140 conference presentations.

PROFESSIONAL SERVICE

Service as Major Professor on Graduate Student Committees

Doctoral Students:

- Parvin Mohammadiarvejeh, December 2020 – May 2024 (expected)
- Saiara Samira Sajid, August 2020 – May 2024 (expected)
- Mohammad Fili, March 2019 – August 2022 (expected).
- Carl Kirpes, August 2018 – May 2022 (expected).
- Fatemeh Amini, August 2018 – May 2022 (expected).
- Luning Bi, August 2017 – August 2022 (expected).
- Mohsen Shah Hosseini, January 2018 – August 2021 (expected).
- Saba Moeinizade, May 2018 – August 2021 (expected).
- Vahid Azizi, August 2017 – August 2021 (expected).
- Zhengyang Hu, May 2015 – August 2019. Currently working at T-mobile.
- Shiyang Huang, August 2014 – June 2018. Currently working at Walmart Labs.
- Yihua Li, April 2013 – May 2018. Co-major in Statistics. Currently working at IBM.
- Qi Li, April 2014 – May 2017. Co-major in Statistics. Currently an associate professor at Beijing JiaoTong University.
- Mohammad Rahdar (co-advised with Lizhi Wang), January 2012 – June 2016. Currently an assistant professor at St Ambrose University.
- Leilei Zhang, August 2011 – August 2015, “Biofuel supply chain, market, and policy analysis,” currently working at Disney in Orlando, FL.
- Yanan Zhang (co-advised with Robert Brown), August 2009 – May 2014, currently working at National Renewable Energy Laboratory, “Development of integrated assessment platform for biofuels production via fast pyrolysis and upgrading pathway.”
- Nazanin Zinouri, August 2012 – August 2013. Did not finish PhD study due to visa issue.

Masters Students (with M.S. Thesis):

- Eric Sesterhenn, August 2020 – present.
- Ishan Patel, August 2020 – present.
- Sanjay Raj Thangavel, October 2019-present.
- Viren Parvani, January 2019 – December 2020.
- Sankhye Sidharth, January 2019 – December 2020.
- Saba Moeinizade, August 2016 – May 2018. She is doing PhD at ISU.
- Goutham Ramraj, August 2015- August 2017, Currently working in Tesla company.
- Alexandra Olsen, January 2014 – May 2015, currently working in a consulting company on health care, “Scheduling and simulation modeling in surgery rooms.”
- Qi Li, August 2012 – April 2014, “Process modeling and supply chain design for advanced biofuel production based on bio-oil gasification.”
- Leilei Zhang, August 2011 – August 2013, “Biofuel supply chain and bottom-up market equilibrium model for production and policy analysis.”
- Yihua Li, August 2011 – April 2013, “Production cost and supply chain design for advanced biofuel.”

- Narges Kazemzadeh, August 2011 – August 2013. “Optimization Models for Biorefinery Supply Chain Network Design under Uncertainty.”
- Minwen Yang, August 2010 – April 2012, “Market competition and social welfare analysis for E10 and E85 with a game theory model.”
- Roshani Malla, August 2011 – August 2012. Did not finish MS study.

Service on Other Graduate Student Committees

Doctoral Students:

- Yijian Zhang, PhD, Industrial Engineering (IE), committee member.
- Hanisha Vemireddy, PhD, IE, committee member.
- Saeed Khaki, PhD, IE, committee member.
- Nick Boerman, PhD, Agronomy, committee member.
- Samira Karimzadeh, PhD, IE, committee member.
- Shikha Sharma, PhD, Electrical Engineering, committee member.
- Fawaz Alharbi, 2018, PhD, Civil Engineering, committee member.
- Didem Sari, 2017, PhD, IE, committee member.
- Cuong Huynh, 2017, PhD, Mechanical Engineering (ME), committee member.
- Ge Guo, 2018, PhD, IE, committee member.
- Rajeeva Thilakaratne, 2016, PhD, ME, committee member.
- Tristan Brown, 2014, PhD, Bioresource Technology, committee member.
- Yanyi He, 2013, PhD, IE, committee member.
- Pan Xu, 2013, PhD, IE, committee member.
- Nan Gao, 2013, PhD, IE, committee member.

Masters Students:

- Paul Steve, 2019, MS, IE, committee member.
- Choudhar Dourabh, 2019, MS, IE, committee member.
- Venkata Sangeetha, 2015, MS, Electrical Engineering, committee member.
- Dongwook Kim, 2015, MS, IE, committee member.
- Liu Su, 2015, MS, IE, committee member.
- Jordan Hansen, 2014, MS, IE, committee member.
- Sudhanya Banerjee, 2012, MS, ME, committee member.
- Jonah Brown-Joel, 2012, MS, Sustainable Agriculture, committee member.

Supervision of Post-Doctoral Students and Professional Staff

Tristan Brown, J. D., Jul. 2011- Jan. 2013, currently an Associate Professor in Department of Forest & Natural Resources Management at Syracuse University.

Mohammad Rahdar, July 2016 – July 2017. Currently an Assistant Professor at St Ambrose University.

Supervision of Undergraduate Research and Independent Study

- John Trettin, Undergraduate researcher, Spring 2020- Fall 2020
- Felipe Restrepo, Undergraduate researcher, Fall 2019, Spring 2020
- Sam Schwierking, Undergraduate researcher, Fall 2019
- Megan Weller, Undergraduate researcher, Fall 2017-Spring 2019.

- Amanda Balaskovits, Undergraduate researcher, Fall 2016-Spring 2017.
- Colin Brown, Undergraduate researcher, Fall 2016-Spring 2018.
- Brandon Landowski, Undergraduate researcher, Fall 2015-Spring 2016.
- Chase Barton, Undergraduate researcher, Fall 2015-Spring 2016.
- Brandon Pongracz, Honors Mentor program, Spring 2015.
- Yuanhan Xu, Undergraduate researcher, Spring 2015.
- Lincoln Banwart, Spring 2014 – Spring 2015, Health care system analysis and scheduling.
- Rachael Meyer, Undergraduate researcher, Spring 2013-Fall 2013, Biofuel supply chain design.
- Sam Berg, Undergraduate researcher, Spring 2013-Fall 2013, System engineering analysis.
- Tim Bancks, Honors Mentor program, Spring 2013, Economic analysis for biofuel.
- Parker Hoye, Undergraduate researcher, Spring 2012- Fall 2012, Process modeling for biofuel.
- Brendon Babcock, Undergraduate researcher, Summer 2011, Process modeling for biofuel.
- Ben Meier, Honors Mentor program, Spring 2012, Economic analysis for biofuel.
- Emahesarae Marroquin, SPEED program, Summer 2011, System analysis for renewable energy.

Professional Service

- Elected Division Secretary, Service Science, 2020-2021, INFORMS
- Board Director, Operations Research Division, Institute of Industrial Engineers, 2018-2020.
- President, Engineering Economy Division, Institute of Industrial Engineers, 2016-2017.
- Program Chair, Engineering Economy Division, Institute of Industrial Engineers, 2015-2016.
- Communication Director, Engineering Economy Division, Institute of Industrial Engineers, 2014-2015.
- Louisiana Board of Regents Support Fund Review Panel, 2019-2020
- NSF review panelist, 2009, 2010, 2012, 2014, and 2019

Editorial Service

- Associate Editor, Journal of Energy Engineering, 2019-present
- Editorial Board, Current Biochemical Engineering, 2020-present
- Editorial Board, Journal of Environmental Science and Engineering Technology, 2019-present
- Editorial Board, International Journal of Industrial and operations research, 2018-present
- Editorial Board, Journal of Agriculture, Food Systems, and Community Development, Editorial Committee, 2010-present
- Guest Editorial Board, IEEE Transaction on Engineering Management, 2018

Service to Disciplinary and Professional Societies or Associations

- Session Chair, INFORMS 2019
- Session Chair, ICSS2019, 2019 Conference on Service Science Sponsored by INFORMS Service Science Section
- Program committee, ICSS2019, 2019 Conference on Service Science Sponsored by INFORMS Service Science Section

- Syngenta Crop Challenge Judge committee, INFORMS, 2019
- Teaching Award committee, Engineering Economy Division, IISE, 2018
- Wellington Award committee, Engineering Economy Division, 2018, IISE
- Chair, Energy, Natural Resources, and the Environment (ENRE) best paper award, Institute for Operations Research and the Management Sciences (INFORMS) Annual Meeting, 2016
- Track chair, Engineering Economy, ISERC, 2016
- Committee, Energy, Natural Resources, and the Environment (ENRE) best paper award, Institute for Operations Research and the Management Sciences (INFORMS) Annual Meeting, 2015
- Track Chair, Energy, Industrial and Systems Engineering Research Conference (ISERC), 2015
- Session Chair, “Stochastic Modeling and Application,” ISERC, 2015
- Session Chair, “Biofuel Supply Chain and Market,” INFORMS Annual Meeting, 2014
- Track chair, Engineering Economy, Industrial and Systems Engineering Research Conference (ISERC), 2014
- Session Chair, “Real Options/EDA”, INFORMS Annual Meeting, 2013
- Session Chair, “Renewable Energy and Biofuel Supply Chain”, INFORMS Annual Meeting, 2013
- Session Chair, “Biofuel Supply Chain Design and Environmental Analysis”, INFORMS Annual Meeting, 2013
- Session Chair, “Scheduling in Health Care and Renewable Energy”, INFORMS Annual Meeting, 2013
- Session Chair, “Sustainable Manufacturing and Supply Chain Management for Renewable Energy”, Invited session, APMS, 2013
- Session Chair, “Joint Session ENRE-Environment & Sustainability/Energy: Biofuel Production and Supply Chain Management”, INFORMS Annual Meeting, 2012
- Session Chair, “Biofuel Supply Chain Management and Operational Planning”, INFORMS Annual Meeting, 2012
- Member, ENRE best paper award committee, INFORMS Annual Meeting, 2013
- Track chair, Social, Environmental and Sustainability, ISERC, 2012
- Cluster Chair, Energy, Natural Resources and the Environment, INFORMS International Meeting, 2012
- Session chair, Industrial Engineering Research Conference, 2011
- Session Chair, “Economics, Supply Chain and Logistics Analysis of Biofuels”, INFORMS Annual Meeting, 2011
- Session chair, Industrial Engineering Research Conference, 2007

Journal Referee:

- *Applied Energy*
- *Applied Mathematical Modeling*
- *Biofuels, Bioproducts & Biorefining*
- *Bioresource Technology*

- *Chemical Engineering Science*
- *Computer and Chemical Engineering*
- *Computers and Industrial Engineering*
- *Energy*
- *Energy and Fuels*
- *Energy Economics*
- *Energy Journal*
- *Environmental Science and Technology*
- *Environment, Systems and Decisions*
- *European J. of Industrial Engineering*
- *IEEE Transactions on Engineering Management*
- *IEEE Transactions on Industrial Informatics*
- *IEEE Transactions on Power Systems*
- *IISE Transcation*
- *International Journal of Electrical Power and Energy Systems*
- *International Journal of Energy Research*
- *International Journal of Production Economics*
- *International Journal of Production Research*
- *International Journal of Sustainable Economy*
- *Journal of Agriculture, Food Systems, and Community Development*
- *Journal of Cleaner Production*
- *Journal of Concurrent Engineering*
- *Journal of Energy Engineering*
- *Journal of Industrial Ecology*
- *Journal of Intelligent Manufacturing*
- *Journal of Modeling in Management*
- *Management Decision*
- *Management Science*
- *Nature Catalysis*
- *Production and Operations Management (POMS)*
- *RAIRO-Operations Research*
- *Science of the Total Environment*
- *Sustainability*

University/Campus Service

- Faculty Work/Life Advisory Committee, member, 2019-present
- Predictive Plant Phenomics (P3) Program Scholarship Committee, Chair, Spring 2019-present
- Ad Hoc committee on Governance Document, Chair, 2018-present
- Ad Hoc committee on ABET Implementation and Planning, member, 2018-2019
- P&T preliminary review committee, member, Spring 2018
- IMSE department chair search committee, Fall 2015
- Honors Program Committee, College of Engineering, 2014 – 2018
- Graduate committee, IMSE department, 2014 – 2018

- Public Relations committee, IMSE department, 2011 – 2017
- Faculty Advisory Board, Bioeconomy Institute, 2011-2013
- Organizing committee, Energy System Analysis workshop, August 2011
- Organizing committee, Aviation Fuel Initiative, March 2012