

Daniela S. (González) Jones, Ph.D.

Intelligent Data for Energy & Agriculture Logistics & Supply Chains (IDEALS) Lab

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Education

Ph.D. in Biological & Agricultural Engineering, Texas A&M University, College Station, TX 2017
Dissertation Title: The Development of an Economically Viable Biomass Feedstock Supply Chain to Meet the Renewable Fuel Standards.

Concentration: Machine & Energy Systems.

Certificate in Business Management, Texas A&M University, College Station, TX. 2017

M.S. in Industrial Engineering, Mississippi State University, Starkville, MS 2012

Thesis Title: Identifying Factors and Quantifying their Impact on Transportation Costs of Pre-processed Biomass

Concentration: Operations Research.

B.S. in Industrial Engineering, Mississippi State University, Starkville, MS. 2009

Minor in Mathematics, Mississippi State University, Starkville, MS. 2009

Computer programming: C, C++, VBA, Python, ModL, SAS. Visualization and geospatial analytics: ESRI ArcGIS, SAS Visual Analytics. Simulation: ExtendSim. Machine Learning: SAS Visual Analytics. Optimization: SAS/OR.

Academic Appointments

Assistant Professor, Biological & Agricultural Engineering, Mar 2022- Present
, North Carolina State University (NCSU), Raleigh, NC

Joint Appointment, Operations Research and Analysis Group, Idaho National Laboratory, Idaho Falls, ID

Data Science Academy Director of Agricultural Analytics, North Carolina State University, Raleigh, NC

Director, Agriculture Data Science Certificate, North Carolina State University, Raleigh, NC

Graduate Faculty, Operations Research Program, North Carolina State University, Raleigh, NC

Faculty Fellow, Center for Geospatial Analytics, North Carolina State University, Raleigh, NC

Faculty Affiliate, Southeast Climate Adaptation Science Center, North Carolina State University, Raleigh, NC

Faculty Affiliate, Agricultural Biotechnology in Our Evolving Food, Energy, and Water Systems NSF Research Traineeship Program, North Carolina State University, Raleigh, NC

- Develop optimization models to solve large-scale problems in transportation, logistics, and renewable energy systems.
- Apply data analytics to integrate data-driven decisions in precision climate-smart agriculture for food and energy.
- Engage government, industry and academia to help increase the workforce capacity trained in agricultural data science.

Research Assistant Professor, Biological & Agricultural Engineering, NCSU, Raleigh, NC Feb 2019- Feb 2022

Postdoctoral Associate, Duke University, Durham, NC 2018- 2019

- Developed statistical analysis to identify the factors that correlate with successful STEM student-development interventions.
- Championed outreach, recruitment and retention activities for students in the bioscience community.
- Mentored graduate and undergraduate students in the Biosciences Collaborative Research Engagement Program.

Graduate Research Assistant, Texas A&M University, College Station, TX 2012-2017

- Assessed national geospatial metadata for biomass predictions (collaboration with *Oak Ridge National Laboratory*).
- Developed GIS-based heuristics to anticipate the optimal location of the US biomass feedstock supply chain.
- Applied discrete-event simulation to evaluate the performance of an experimental module-based biomass collection system.

Graduate Research Assistant, Mississippi State University, Starkville, MS 2010-2012

- Designed decision support systems and optimization models to design and manage the bioenergy supply chain.
- Formulated data-driven cost functions for intermodal delivery of feedstock in a commodity-scale bioenergy production.

Analyst of Biofuels & Renewable Energy Technology, Idaho National Laboratory, Idaho Falls, ID 2011

- Analyzed the impact of intermodal facilities to the design and management of advanced biomass supply systems.
- Implemented transportation cost functions into Idaho National Laboratory's biomass logistics model.

Graduate Teaching Assistant, Mississippi State University, Starkville, MS 2011

- Assisted with teaching the fundamentals to design, develop and implement decision support and database systems.

- Facilitated laboratory sessions to program Excel applications to support engineering analyses using VBA language.

International Research Assistant, Universidad Carlos III de Madrid (NSF Grant), Madrid, Spain 2007

- Explored new material systems for powder metallurgy.
- Compacted, sintered, heat treated and mechanically tested titanium-iron alloys at varying densities and compaction pressures.

Math and Spanish Tutor, Mississippi State University, Starkville, MS 2006

Industry Experience

Materials Engineer (Internship), Whirlpool Corporation 2006

- Performed efficiency studies on production lines and streamlined them by re-designing the layout.

Peer-Reviewed Journal Articles

^aGraduate student. ^bCorresponding author. ^cImpact Factor 11.2 in 2023.

1. E Pena Martinez, M Kudenov, H Nguyen, **DS Jones**, C Williams. (2024). Evaluating two high-throughput phenotyping platforms at different stages of the post-harvest pipeline of sweetpotatoes. *Smart Agricultural Technology*, 100469. [link](#).
 2. T Hossain^a, **DS Jones**^b, E Godfrey, D Saloni, M Sharara, D Hartley. (2024). Characterizing value-added miscanthus pellet blends with corn stover and switchgrass. *Renewable Energy*, 120494. [link](#)
 3. T Hossain^a, **DS Jones**^b, E Godfrey, D Saloni, M Sharara, D Hartley. (2024). Nth-plant scenario for blended pellets of Miscanthus, Switchgrass, and Corn Stover using Multi-Modal Transportation: Biorefineries and depots in the contiguous US. Accepted in *Biomass and Bioenergy*, 183, 107162. [link](#).
 4. MT Ahmed, NK Wijewardane, Y Lu, **DS Jones**, M Kudenov, C Williams, A Villordon, M Kamruzzaman. (2024). Advancing Sweetpotato Quality Assessment with Hyperspectral Imaging and Explainable Artificial Intelligence. *Computers and Electronics in Agriculture*. Volume 220, 108855. [link](#)
 5. B Lamb, D Hively, J Jennewein, LB Santos^a, A Thieme, **DS Jones**. (2024). Crop residue cover mapping with WorldView-3 imagery. Accepted in *IGARSS 2024 IEEE International Geoscience and Remote Sensing Symposium* on Mar 15, 2024.
 6. L Huezo, **DS Jones**, E Edwards, M Sharara. (2023). Manure Nutrient Cycling in U.S. Animal Agriculture Basins – North Carolina Case Study. *Journal of Environmental Quality*. [link](#)
 7. T Hossain^a, **DS Jones**^b, D Hartley, M Langholtz, M Davis, D Thompson. (2022). Nth-plant scenario for forest resources and short rotation woody crops: biorefineries and depots in the contiguous US. *Applied Energy*^c. Volume 325, 119881. [link](#)
 8. K Grieger, S Zarate, K Barnhill-Dilling, SR Hunt^a, **DS Jones**, J Kuzma. (2022). Fostering Responsible Innovation through Stakeholder Engagement: Case Study of North Carolina Sweetpotato Stakeholders. *Sustainability* 2022, 14(4), 2274. [link](#)
 9. **DS Jones**, DD Gillette, PE Cooper, RY Salinas, JL Hill, SJ Black, DJ Lew, DA Canelas. (2022). Cultivating PhD aspirations during College. *CBE-Life Sciences Education*. [link](#)
 10. M Langholtz, M Davis, L Eaton, M Hilliard, C Brandt, E Webb, C Hellwinckel, N Samu, D Hartley, **DS Jones**. (2021). Nth-plant supply: corn stover supplies and costs in a fleet of biorefineries. *Biofuels, Bioproducts and Biorefining*. [link](#)
 11. CW Forsberg, BE Dale, **DS Jones**, T Hossain^a, ARC Morais, LM Wendt. (2021). Replacing liquid fossil fuels and hydrocarbon chemical feedstocks with liquid biofuels from large-scale nuclear biorefineries. *Applied Energy*^c, 298, 117225. [link](#)
 12. T Hossain^a, **DS Jones**^b, D Hartley, M Griffel, Y Lin, P Burli, D Thompson, M Langholtz, M Davis, C Brandt. (2021). The nth-plant scenario for blended feedstock conversion and preprocessing nationwide: Biorefineries and Depots. *Applied Energy*^c, 294, 116946. [link](#)
 13. C Forsberg, BE Dale, **DS Jones**, LM Wendt. (2021). Replacing All Liquid Fossil Fuels and Hydrocarbon Chemical Feedstocks With Liquid Biofuels Produced from Cellulosic Biomass Using Nuclear Heat and Hydrogen. *Transactions of the American Nuclear Society*, Volume 124. [link](#)
 14. **DS Jones**, SW Searcy, LM Eaton. (2018). Assessment of perennial grass inventories predicted in the Billion-Ton Studies. *ASABE Transactions*, 61(2): 331-340. [link](#)
 15. **DS Gonzales**, SW Searcy. (2017). GIS-based allocation of herbaceous biomass in biorefineries and depots. *Biomass and Bioenergy Journal*, 97, 1-10. [link](#).
 16. AM Acharya, **DS Gonzales**, SD Eksioğlu, S Arora. (2014). An Excel-based decision support system for supply chain design and management of biofuels. *International Journal of Operations Research and Information Systems (IJORIS)*, 5(4), 26-43. [link](#)
 17. **DS Gonzales**, EM Searcy, SD Eksioğlu. (2013). Cost analysis for high-volume and long-haul transportation of densified biomass feedstock. *Transportation Research Part A: Policy and Practice*, Vol. 49, pages 48-61. [link](#)
 18. AM Acharya, **DS Gonzales**, SD Eksioğlu. (2013). A decision support system (DSS) for biomass-to-biofuel supply chain. *Epoka Conference Systems, 1st International Symposium on Computing in Informatics & Mathematics*. [link](#)
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Manuscripts Submitted and Under Review

^aGraduate student. ^bCorresponding author.

1. RS Hunt^a, H Liu, C Yench, K Pecotta, R Mierop, C Williams, **DS Jones**^b. (2024). Analyzing big data generated during sweetpotato production to predict shape features. Submitted to *Computers and Electronics* on Jan 12, 2024. [Preprint link](#).
2. M Carbajal, **DS Jones**, C Williams, N Nelson. (2024). In-season Sweetpotato Yield Forecasting using Multitemporal Remote Sensing Environmental Observations and Machine Learning. Submitted to *Smart Agricultural Technology* on Apr 4, 2024. [Preprint link](#)

Published Technical Reports

^aGraduate student.

1. L Pratt, D Roberts, N Malcolm, B Fisher, K Barnhill, **DS Jones**, M Kudenov. (2024). How Decision Intelligence Integrates Forecasting, AI, and Data into Complex Decisions. *Foresight: The International Journal of Applied Forecasting*, International Institute of Forecasters, (72), 52-57. [link](#)
2. T Hossain^a, P Burli, J Pin^a, **DS Jones**, D Hartley, R Hess. (2023). Deployment of BECCUS value chains in the United States: A case study of sequestering CO₂ from ethanol production-IEA Bioenergy: Task 40. *IEA Bioenergy Technology Collaboration Program*. Jan 2023. [link](#)

Publications in Progress

^aGraduate student. ^bCorresponding author.

1. B Lamb, D Hively, J Jennewein, A Thieme, LB Santos^a, **DS Jones**. (2024). Interannual crop residue cover assessments using WorldView-3 time-series imagery and ground surveys. 98% complete.
2. M Carbajal, **DS Jones**, C Williams, N Nelson. (2024). In-season Sweetpotato Yield Forecasting using Multitemporal Remote Sensing Environmental Observations and Machine Learning. 95% complete.
3. RS Hunt^a, **DS Jones**^b, J Holland, J Gottula. (2024). Environmental Parameterizations for Predictive Agriculture. 85% complete.
4. J Pin^a, **DS Jones**^b, D Hartley, P Burli, M Langholtz, C Hellwinckel, D Thompson. (2024). Nationwide Analysis of an Oilseed Supply Chain for Sustainable Aviation Fuel (SAF). 85% complete.
5. S McDowell^a, **DS Jones**^b, RS Hunt^a, S Carpenter^a, M Kudenov, C Williams. (2024). Using Computer Vision to Assess Root Development and Crop Yield Estimates. 75% complete.
6. S McDowell^a, **DS Jones**^b, RS Hunt^a, M Kudenov, C Williams. (2025). Improving sweetpotato profitability. 40% complete.
7. PE Cooper, EJ Hunsaker, **DS Jones**, DA Canelas (2025). Understanding and optimizing the relationships between undergraduate researchers and graduate/postdoctoral student mentors. 35% complete.
8. M Langholtz, D Hartley, N Samu, **DS Jones**, C Brandt, M Davis, M Hilliard, E Webb, C Hellwinckel, C Daly, M Halbleib. (2025). Nth plant vs. Nth supply: feedstock costs and supply uncertainty as function of number of biorefineries. Manuscript in preparation. 35% complete.
9. LB Santos^a, **DS Jones**^b, BT Lamb, WD Hively, J Jennewein, A Thieme, C Reberg-Horton. (2025). Mapping crop residue cover by integrating satellite time-series imagery and machine learning. 20% complete.
10. J Pin, **DS Jones**^b, F Demarchi Pockrandt. (2025). Geotemporal analysis of sweetpotato crop rotations in North Carolina. Manuscript in preparation. 20% complete.
11. S McDowell^a, **DS Jones**^b, AR de Queiroz. (2025). Stochastic models to understand the variability in sweetpotato shapes and sizes. 10% complete.

Press Releases

^aGraduate student. ^bCorresponding author.

1. NC State University, NC Plant Sciences Initiative. “Third Annual N.C. PSI Hackathon Brings in Record Numbers”. By Sam Jones, Oct 26, 2023. Features Track 1, the visual analytics track led by Dr. Daniela Jones. <https://cals.ncsu.edu/psi/news/third-annual-n-c-psi-hackathon-brings-in-record-numbers/>
2. NC State University, Data Science Academy. “Mini Data Challenge for Rural High School Students”. By Haley Houser, May 8, 2023. Features Shana McDowell, PhD Student in Dr. Daniela Jones’ Lab. <https://datascienceacademy.ncsu.edu/2023/05/08/k-12-mini-challenge/>
3. SAS Inc. “SAS Viya: An Educator’s Perspective”. Apr 4, 2023. Features Dr. Daniela Jones perspective on building student’s skills around analytics, big data, machine learning, and AI. <https://video.sas.com/sharing?videoId=6323954115112>
4. NC State University, CALS Magazine. “Driven by Data”. By Lea Hart. Features Shelly Hunt, MS student alumna in Dr. Daniela Jones’ Lab. <https://magazine.cals.ncsu.edu/shelly-hunt/>

5. NC State University, Data Science Academy. “A Transformative Summer Journey: Exploring Data Science for Social Impact”. By Haley Houser, Aug 17, 2023. Features Shana McDowell, PhD Student in Dr. Daniela Jones’ Lab. <https://datascienceacademy.ncsu.edu/2023/08/17/2023-can-summer-institute/>
6. NC State University, Department of Biological & Agricultural Engineering. “Department Graduates First to Complete the Agricultural Data Science Certificate”. By BAE, Dec 26, 2022. Features the first graduates of the Agriculture Data Science Certificate. <https://www.bae.ncsu.edu/news/2022/department-graduates-first-to-complete-the-agricultural-data-science-certificate/>
7. NC State University, College of Agriculture and Life Sciences News. “Media Advisory: NC State to Dedicate Plant Sciences Building”. By Janine Brumfield, Apr 11, 2022. Features IDEALS graduate student, Shelly Hunt, as a speaker. <https://cals.ncsu.edu/news/media-advisory-nc-state-to-dedicate-plant-sciences-building/>
8. NC State University, College of Agriculture and Life Sciences News. “Sweet-APPS Yielding Sweet Success”. By Emma Macek, Nov 17, 2022. Features the Sweet-APPS project for which Dr. Jones is a co-lead. <https://magazine.cals.ncsu.edu/sweet-apps/>
9. NC State University, College of Agriculture and Life Sciences News. “Enhancing NC State’s Data-Driven, Climate-Smart Agriculture Talent Pool”. By Kristin Sargent, Jan 7, 2022. Features an interview on Dr. Jones’ research. <https://cals.ncsu.edu/news/enhancing-nc-states-data-driven-climate-smart-agriculture-talent-pool/>
10. WATT Ag Net, WATT Poultry. “Identifying best practices for poultry manure processing”. By Elizabeth Doughman, Mar 11, 2022. Features a project for which Dr. Jones is a co-lead. <https://www.wattagnet.com/poultry-future/article/15535371/identifying-best-practices-for-poultry-manure-processing?v=preview>
11. NC State University, News. “Researchers Capture the Beauty of Our Weird, Wonderful World”. By Matt Shipman, Aug 24, 2022. Honorable mention to a research photography submission by Dr. Jones. <https://news.ncsu.edu/2022/08/envisioning-research-winners-2022/>
12. NC State University, College of Agriculture and Life Sciences News. “Bridging the Big Data Divide”. By PJ Bogdan, Jun 4, 2021. Features the Ag Data Science Certificate spearheaded by Dr. Jones. <https://cals.ncsu.edu/news/bridging-the-big-data-divide/>
13. NC State University, College of Agriculture and Life Sciences News. “An Uncommon Thread”. By PJ Bogdan, Jul 21, 2021. Features a MS student from Dr. Jones’s Lab, Shelly Hunt. <https://cals.ncsu.edu/news/an-uncommon-thread/>
14. NC State University, Department of Biological & Agricultural Engineering. “Digging Deep into Interdisciplinary Agricultural Research”. By Laura Riddle, Aug 30, 2021. Features the Sweet-APPS project for which Dr. Jones is a co-lead. <https://www.bae.ncsu.edu/news/2021/digging-deep-into-interdisciplinary-agricultural-research/>
15. NC State University, Department of Biological & Agricultural Engineering. “Student Finds Family and High-Flying Fulfillment in BAE”. By Laura Riddle, Jul 20, 2021. Features a student funded by Dr. Jones’ USDA NNF project and the Sweet-APPS project for which Dr. Jones is a co-lead. <https://www.bae.ncsu.edu/news/2021/student-finds-family-and-high-flying-fulfillment-in-bae/>
16. SAS Inc. “How SAS is saving the Sweet Potato”. Oct 13, 2021. Features Dr. Jones’ MS student, Shelly Hunt. https://blogs.sas.com/content/sascom/2021/10/13/how-sas-is-saving-the-sweet-potato/?utm_source=twitter&utm_medium=social-sprinklr&utm_content=5730189218&utm_term=5730189218
17. NC State University, College of Agriculture and Life Sciences News. “Exploring New Avenues”. By PJ Bogdan, Nov 14, 2021. Features a PhD student from Dr. Jones’s Lab, Shana McDowell. <https://cals.ncsu.edu/news/new-ph-d-student-brings-math-and-clinical-data-science-backgrounds-to-agriculture/>
18. NC State University, Department of Biological & Agricultural Engineering. “Welcome to Dr. Daniela Jones”. By Rebecca Nagy, Feb 19, 2019. Features Dr. Jones in her new role at NC State University. <https://www.bae.ncsu.edu/news/2019/welcome-to-dr-daniela-jones/>
19. NC State University, Department of Biological & Agricultural Engineering. “Introduce a Girl to Engineering Day”. By Rebecca Nagy, Feb 21, 2019. Features Dr. Jones as an engineer. <https://www.bae.ncsu.edu/news/2019/introduce-a-girl-to-engineering-day/>

External Research Awards

Total \$2,874,430, of which \$876,366 are funded external projects as lead-PI.

External proposals prepared as lead PI, funded (Total: \$876,366)

1. **PI: DS Jones.** *Joint Faculty Appointment with Idaho National Laboratory.* (03/28/2019- 09/30/2024). Battelle Energy Alliance, LLC- Idaho National Laboratory. **\$332,396.**
2. **PI: DS Jones.** **Co-PIs:** C Williams, M Kudenov, K Grieger, A Huseh, A Scafuro, N Nelson, R Dunning, A Graves, R Sozzani, C Yencho, E Lobaton, K Ogan, P Savariappan. *Cultivating A Resilient Workforce By Integrating A Culturally Competent Community Of Scholarship & Data Science in Food & Agricultural Research.* (01/15/2021- 01/14/2025). Department of Agriculture - National Institute of Food and Agriculture- National Needs Fellowship. **\$238,500.** **Link.** **Role:** Project lead responsible for the overall coordination and supervision of all aspects of the study, including coordination with our strategic partners. Advisor to one of the three PhD students funded through this project, mentor to other students.

3. **PI: DS Jones. Co-PIs:** M Chinn, E Godfrey, D Saloni. *Uniform-Format Herbaceous Biomass Feedstock: Value-Added Miscanthus*. (01/01/2021-12/31/2022, no cost extension granted through Dec 2023). North Carolina Department of Agriculture and Consumer Services – Bioenergy Research Initiative. **\$99,000**. [Link](#). **Role:** Project lead responsible for the overall coordination and supervision of all aspects of the study, including coordination with other researchers and advisor for the graduate student funded through this project. Coordinate collaborations with Idaho National Laboratories to develop cost efficient supply chains to deliver on-spec Miscanthus to emerging domestic biofuels and bioproducts producers.
4. **PI: DS Jones. Full-Season sweetpotato data lifecycle analysis: stakeholder engagement, sensors, and yields.** Alfred P. Sloan Foundation Seed Grant. (08/10/2022- 05/31/2023). **\$10,000**. [Link](#). **Role:** Project lead and in charge to collect, process, store, manage, analyze, visualize, and interpret heterogeneous datasets in the data lifecycle of growing sweetpotatoes.
5. **PI: DS Jones. A Review of the State of Technology of Bioenergy Carbon Capture and Storage (BECCS).** (04/01/2022- 05/31/2022). Battelle Energy Alliance, LLC- Idaho National Laboratory. **\$9,430**. **Role:** Create a report of the current state of technology of bioenergy with carbon capture and storage in the US.
6. **PI: DS Jones. Increasing the visibility of the interdisciplinary cutting-edge research performed by the students in the Agricultural & Biological (Ag&Bio) Logistics Laboratory.** (11/01/2021- 5/31/2023). Alfred P. Sloan Foundation- Sloan Scholar Mentoring Network Career Development Grant. **\$7,500**. **Role:** Foster healthy, mutually beneficial research relationships between NCSU and Idaho National Laboratory (INL); and provide students with a long-lasting professional network, exposure to different career opportunities, and hands-on opportunities with the cutting-edge technologies available at INL.
7. **PI: DS Jones. Sloan Scholar Mentoring Network Conference Travel Award.** (2019). Alfred P. Sloan Foundation- Sloan Scholar Mentoring Network Career Development Grant. **\$1,500**.

External proposals prepared as co-PI with research role, funded (Total: \$1,218,064)

1. **PI:** M Kudenov. **Co-PIs:** **DS Jones**, C Williams, J Dunne. *Inventory Technologies: Enhancing Profit for Small and Medium Growers through Consignment Sellers*. (05/16/2024- 05/15/2027). US Dept. of Agriculture - National Institute of Food and Agriculture (USDA NIFA) Foundational and Applied Science Program- Small and Medium-Sized Farms **\$650,000**. **Role:** Responsible for developing predictive models and tools that define post-harvest initial conditions based on field and growth information, incorporating both the insights of experienced employees and quantitative data. This models will be capable of running with a wide variety of input variables, of varying quality, to enable the initial harvest conditions (grade) to be established for order optimization and fulfillment. Additionally, she will assist with eliciting stakeholder mental models using decision intelligence.
2. **PI:** D Roberts. **Co-PIs:** **DS Jones**, C Williams, J Jaret, K Barnhill-Dilling, M Kudenov, N Malcolm, B Fisher, L Pratt. *Decision Intelligence in Supply Chains for Improved Outcomes*. (01/03/2022- 03/29/2024). USDA NIFA Foundational and Applied Science Data Science for Food and Agricultural Systems. **\$649,722**. **Role:** Responsible for interfacing to our domain expertise, including stakeholders' agronomists, to help ascertain and quantify management practices, timing, and supply chain concerns. Dr. Jones also helps identify key supply chain models that can be used as a starting point for the proposed software framework.
3. **PI:** BE Jin. **Co-PIs:** DS Jones, K McKee, EA Hopfer, CL Liang, M Blevins. *Enhancing Entrepreneurial Competencies via 4 Industrial Revolution Technologies and Innovative Business Model: Ecosystem Approach (4IR and IBM)*. (01/01/2024- 12/31/2027). USDA NIFA Higher Education Grant. **\$300,000**. [Link](#). **Role:** Assist with instructional module development and implementation; service learning projects; disseminate instructional materials; help recruit potential module adopters. In addition, Dr. Jones will provide faculty workshops at academic conferences in food and agriculture disciplines.
4. **PI:** M Sharara. **Co-PIs:** **DS Jones**, E Edwards. *A Framework to Enhance NC's Natural Resources through Sustainable Manure Nutrient Cycling and Export*. (01/03/2022- 03/29/2024- extended). North Carolina Department of Justice Environmental Grant. **\$268,342**. [Link](#). **Role:** Spearhead the optimization analysis for locating resource collection facilities and processing facilities for value-added products. Collaborative mentoring of the postdoctoral researcher funded through this grant.

External proposals prepared as co-PI with advisory role, funded (Total: \$780,000)

1. **PI:** M Kudenov. **Co-PIs:** **DS Jones**, C Williams, J Dunne. *Improving the speed of peanut grading at peanut buying stations*. (01/01/2023- 12/31/2023). NC Peanut Growers' Association. Full Proposal Submitted. **\$30,000**. **Role:** Support in the development of automated imaging and weighing technologies that can serve as a bridge, toward more fully automated systems, by addressing key bottlenecks in the existing grading process.
2. **PI:** L Yuzhen. **Co-PIs:** **DS Jones**, M Kudenov, C Williams, A Villordon, N Wijewardane, M Kamruzzaman. *Advancing Optical Technologies for Enhanced Quality Evaluation, Grading and Sorting of Sweetpotato*. (01/01/2023-12/31/2024). US Dept. of Agriculture- Agricultural Marketing Services (AMS)-Specialty Crop Multi-State Program (SCMP). **\$750,000**. **Role:** Collaborative mentoring of the postdoctoral researcher funded through this grant. Assist the project team with assessing and collecting ground truth data related to pertinent environmental and phenotypic parameters.

3. **PI:** M Kudenov. **Co-PIs:** **DS Jones**, C Williams, J Dunne. *Improving the speed of peanut grading at peanut buying stations.* (01/01/2024- 12/31/2024). NC Peanut Growers' Association. Full Proposal Submitted. **\$25,000.**

Internal Research Awards

Total \$171,564, of which \$171,564 are funded internal projects as lead-PI.

Internal proposals prepared as lead PI, funded (Total: \$171,564)

1. **PI:** **DS Jones.** *Cover crop mapping using satellite imagery and machine learning.* (08/01/2023- 05/31/2024). Data Science Academy (DSA) and Precision Sustainable Agriculture (PSA), North Carolina State Univ. **\$169,564** (\$55,117 from DSA and \$114,447 from PSA). **Role:** Project lead and mentor to a PhD student serving as a data science consultant and working with USDA and USGS staff.
2. **PI:** **DS Jones.** *Undergraduate research to identify, aggregate, and curate datasets for simulating the sweetpotato supply chain.* (2020-2021). NCSU's Provost's Professional Experience Program (PEP) for undergraduate researcher: Emory New. **\$2,000.**
3. **PI:** **DS Jones.** *Curate datasets to develop logistic regression models to predict sweetpotato shape and size.* (2020-2021). Funded by the NCSU's Office of Undergraduate Research Federal Work Study Research Assistant Position for undergraduate researcher: Rachelle Shelly Hunt. **\$1,000.**

Internal proposals prepared as lead co-PI with research role, funded (Total: \$556,000)

1. **PI:** C Williams. **Co-PIs:** **DS Jones**, M. Kudenov, M. Boyette, K. Grieger, A. Huseth, A. Scafuro, N. Nelson. *Improving Crop Productivity and Value through Heterogeneous Data Integration, Analytics, and Decision Support Platforms.* (01/06/2020-06/05/2023- extended). Game-Changing Research Incentive Program for the Plant Sciences Initiative (GRIP4PSI), North Carolina State Univ. **\$556,000.** **Role:** Lead translational research activities and the development of the agricultural workforce training opportunities that integrate hands-on learning, cooperative extension, transdisciplinary education, and active stakeholder engagement. Sweetpotatoanalytics.com

Industry In-kind Contributions

Total of ~\$65,000.

1. In-kind contribution from Scott Farms for Precision Agriculture Research Data Collection. ~**\$5,000** in equipment.
2. In-kind contribution from SAS Inc. for MS student. ~**\$45,000** in student stipend.
3. In-kind contribution from Bayer for PhD student. ~**\$15,000** in professional development through FFAR

Honors and Awards as Faculty

Office of Research and Innovation Faculty Fellow, NC State University	2022-Present
Sloan Scholars Mentoring Network Outstanding Mentor Award	2024
ASABE Educational Aids Blue Ribbon Competition Winner	2023
Emerging SAS Educator Award – First runner up link	2023
Honorable Mention – NCSU Envision Research, “NC Farmers’ Complex Soils” picture link	2022
SAS Hackathon Finalist – Mixed/Manufacturing category: Think & Do Smart-Ag Team link	2022
Nominated for the NC State University Goodnight Early Career Award by BAE Dpt Head	2022
SAS Hackathon Winner – Global Sub-Industry category: AgTech–NPK4EVER Team link	2021
SAS Hackathon Winner – Regional category: USA–NPK4EVER Team	2021
SAS Hackathon Finalist – Global category: Data for Good–NPK4EVER Team	2021
Chancellor's Creating Community Award Nomination	2021
American Society of Agricultural and Biological Engineers Superior Paper Award	2019

Graduate and Undergraduate Research Assistant Awards

1. Leticia Santos: Bayer sponsorship for professional development as a FFAR Fellow (\$15,000), 2024-2027.
2. Shana McDowell: CALS Student of the Year nomination by BAE, North Carolina State University, 2024.
3. Carmella Holloway: Purdue Northwest REEU Program Fellowship (+\$3,100), 2024.
4. Carmella Holloway: Year-round Internship with SAS, 2024.
5. Leticia Santos: Robert O. Evans Fellowship, North Carolina Agriculture Foundation (\$3,000), 2023.
6. Juliana Pin: 1st Runner up, Interns Poster Competition, Idaho National Laboratory, 2023.

7. Juliana Pin: Internship (INTERN), Idaho National Laboratory, Idaho Falls, ID, 2023.
8. Shana McDowell: Internship (INTERN), Capacity Accelerator Network's Data Science for Social Impact Summer Research Program, University of Chicago, IL, 2023
9. Shelly Hunt: Internship (INTERN), SAS Inc. Raleigh, NC, 2020-2022.
10. Tasmin Hossain: Internship (INTERN), Idaho National Laboratory, Idaho Falls, ID, 2022.
11. Shelly Hunt: 1st Place, ASABE Info. Tech., Sensors, & Control Sys Oral Competition, 2022.
12. Shelly Hunt: 2nd Place, ASABE Engineering Ethics Oral and Written Competition, 2022.
13. Shelly Hunt: MS Student of the Year, NC State University College of Engineering, (\$750) 2022.
14. Shelly Hunt: MS Student of the Year, NC State University Biological & Agricultural Engineering, 2022.
15. Shelly Hunt: 1st Place NC Sweetpotato Council Picture Competition 1st Place, 2022.
16. Shelly Hunt: Student Keynote Speaker, NC State University Plant Sciences Building Dedication, 2022.
17. Shelly Hunt: Inductee, Alpha Epsilon Biological Engineering Honor Society, 2022.
18. Shana McDowell: Inductee, Alpha Epsilon Biological Engineering Honor Society, 2022.
19. Shana McDowell: Provost Doctoral Fellowship, North Carolina State University, 2021.
20. Tasmin Hossain: 2nd Place, ASABE Boyd-Scott Graduate Research Award, 2021.
21. Tasmin Hossain: NC State University Biological & Agricultural Engineering Johnson Fellowship Award, 2021.

Teaching and Curriculum/Syllabus Development

SAS Inc. Raleigh, NC

- Summer 2023 SAS Certification at North Carolina State Univ. in Agriculture Data Science: Co-developed an online certification (e-badge) for when students take the *Advanced Analytics to Agriculture, Food & Life Sciences Data* and the *Statistical Methods and Computing for Data Science* courses at North Carolina State Univ.

North Carolina State Univ. Raleigh, NC.

- Summer 2024: The videos titled *Data-Driven Decisions for Food and Energy* (in English and Spanish) will be included again in the free 2-credit course offered to incoming NC State undergraduate students, *Wicked Problems, Wolfpack Solutions*. This course aims to encourage students to discover more about various disciplines, to connect with the broader NC State community, and to Think and Do, applying and reflecting upon what they're learning. The course has been approved to count toward the Interdisciplinary Perspectives GEP requirement. DOI: 10.52750/564142. [link](#)
- Spring 2024: The video titled *Data-Driven Decisions for Food and Energy* was re-created in Spanish to reach a broader audience. [link](#)
- Fall 2023 (85 students enrolled): Instructor of record for *E 102: Engineering in the 21st Century*. Course is a 2 credit course for 85 undergraduate students. Number Enrolled
- Fall 2023: Graduated two students from the CALS Graduate Agriculture Data Science Certificate Program: Nick Garrity, and Md Mahfuz Islam.
- Summer 2023: Co-developed the *SAS - North Carolina State University Academic Specialization in Agriculture Data Science*, which is an e-badge for students that pursue the fundamental courses required for the CALS Graduate Agriculture Data Science Certificate Program [link](#).
- Summer 2023: The video titled *Data-Driven Decisions for Food and Energy* was included again in the free 2-credit course offered to incoming NC State undergraduate students, *Wicked Problems, Wolfpack Solutions* titled *Our Health*. This course aims to encourage students to discover more about various disciplines, to connect with the broader NC State community, and to Think and Do, applying and reflecting upon what they're learning. The course has been approved to count toward the Interdisciplinary Perspectives GEP requirement. DOI: 10.52750/564142. [link](#)
- Spring 2023 (77 students enrolled): Instructor of record for *E101: Introduction to Engineering & Problem Solving*, an introduction to the College of Engineering (COE) as a discipline and profession. Emphasis on engineering design, interdisciplinary teamwork, & problem solving from a general engineering perspective. Overview of academic policies affecting undergraduate engineering students. Exposure to COE and university-wide programs and services.
- Spring 2023 (5 students enrolled): Taught the *Advanced Analytics to Agriculture, Food & Life Sciences Data*, a flipped-classroom project-based graduate-level 3 credit course.
- Spring 2023: Graduated two students from the CALS Graduate Agriculture Data Science Certificate Program: Shana McDowell, and Enrique Peña.
- Fall 2022: Graduated three students from the CALS Graduate Agriculture Data Science Certificate Program: Mariella Carbajal-Carrasco, Shelly Hunt, and Tasmin Hossain.

- Fall 2022 (100 students enrolled): Co-instructor of record for *E 102: Engineering in the 21st Century* with Dr. Steve Hall. Course is a 2 credit course for 100 undergraduate students. This interdisciplinary course provides an overview of the fourteen engineering grand challenges of the 21st century and their relationships to all of the separate engineering disciplines in the College of Engineering. The lectures incorporate examples, guests, and specific readings on the challenges in sustainability, health, vulnerability, and the joy of living to advance civilization into the next century. Students gained an appreciation for the methods in which engineers, in each discipline, acquire knowledge and design tools or interdisciplinary solutions essential to meet society's future needs.
- Summer 2022: Developed a video titled *Data-Driven Decisions for Food and Energy* to be included in the free 2-credit course offered to incoming NC State undergraduate students, *Wicked Problems, Wolfpack Solutions* titled *Future of Food* in 2022. This course aims to encourage students to discover more about various disciplines, to connect with the broader NC State community, and to Think and Do, applying and reflecting upon what they're learning. The course has been approved to count toward the Interdisciplinary Perspectives GEP requirement. DOI: 10.52750/564142. [link](#)
- Spring 2022: Instructor of record for the *Advanced Analytics to Agriculture, Food & Life Sciences Data*, a flipped-classroom project-based graduate-level 3 credit course.
- Fall 2021: Successfully developed curriculum, routed for approval by the College of Engineering, College of Agriculture and Life Sciences, College of Science, Graduate School, Provost, Chancellor, Board of Trustees, and implemented the Agricultural Data Science Graduate Certificate at North Carolina State Univ. [Link](#).
- Fall 2021: Co-developed syllabus for the *Statistical Methods and Computing for Data Science*, graduate-level 3-credit course. Course delivered by Dr. Paul Savariappan.
- Spring 2021: Developed and taught *Advanced Analytics to Agriculture, Food & Life Sciences Data*, a flipped-classroom project-based graduate-level 3 credit course. This course introduces students to predictive modeling techniques for applications in large-scale data in Agriculture, Food, and Life Sciences using the SAS environment. The techniques that students are equipped with include: longitudinal data analysis using discrete and continuous responses, data mining, machine learning, data manipulation and resource cost benefits.
- Spring 2020: Developed and taught *Foundation Tools to Agriculture, Food & Life Sciences Data*, a flipped-classroom project-based graduate-level 3 credit course. This course introduces students to the rapidly growing field of data science and the applications of these techniques in large-scale data in Agriculture, Food, and Life Sciences. The course will equip students with techniques to leverage SAS programming to access, explore, validate, prepare, manipulate, analyze and report on data.

Guest Lectures

I created and delivered the following guest lectures:

1. BAE488: Postharvest Engineering, “Sweetpotato Analytics for Produce Provenance and Scanning”, Mar 2023.
2. E101: Introduction to Engineering & Problem Solving, “Networking towards your Engineering Job”, Feb 2021.

Mississippi State Univ. Starkville, NC.

- Fall 2011: Assisted with Information Systems for Industrial Engineering, undergraduate-level 4-credit course.

Research Funding and Fellowship Awards during Academic Training

Association of Energy Engineers Scholarship, Lone Star Chapter (\$500)	2016
Association of Energy Engineers Scholarship, Lone Star Chapter (\$1,000)	2015
Bill and Rita Stout International Graduate Student Achievement Award (\$250)	2015
Three-year Doctoral Fellowship, Texas A&M Univ. (\$81,000)	2012
Three-year Department Graduate Assistantship, Texas A&M Univ. (\$22,700)	2012
Alfred P. Sloan Foundation Minority Ph.D. Fellowship (\$17,000)	2012
College of Agriculture Diversity Excellence Fellowship, Texas A&M Univ. (\$5,000)	2012
Cum Laude, Mississippi State Univ.	2009

Industrial Engineering Senior Award, Mississippi State Univ.	2009
President's Scholar, Mississippi State Univ.	Spring 2008
President's Scholar, Mississippi State Univ.	Fall 2008
Dean's Scholar, Mississippi State Univ.	Fall 2004
Dean's Scholar, Mississippi State Univ.	Spring 2005
Dean's Scholar, Mississippi State Univ.	Fall 2005
Dean's Scholar, Mississippi State Univ.	Spring 2007

Invited Presentations Since Initial Appointment at NC State University – Off-Campus

1. **DS Jones.** *Nationwide Analysis of an Oilseed Supply Chain for Sustainable Aviation Fuel (SAF)*. Presentation of Project Update to the Department of Energy. Virtual Presentation. Jun 2023.
2. **DS Jones.** *Biomass Supply Chain to the Refinery: Transportation from Depot to Biorefinery*. Nuclear Biofuels Workshop. Virtual Presentation. Aug 2021.
3. **DS Jones.** *Decarbonization of the US agricultural and energy sectors*. NC State & Clemson Symposium on Ecological and Environmental Engineering. Aug 2021.
4. **DS Jones.** *Bioenergy Logistics*. Idaho National Laboratory Collaboration Event with National University Consortium and Center for Advanced Energy Studies. Virtual Presentation. Jul 2021.
5. **DS Jones.** *Locating nth-plants for biomass conversion and preprocessing nationwide: biorefineries and depots*. American Institute of Chemical Engineers Annual Meeting. Virtual Presentation. Oct 2020.
6. **DS Jones.** *Locating nth-plants for biomass conversion and preprocessing nationwide: biorefineries and depots*. Presentation to DOE Bioenergy Technologies Office (BETO). Virtual Presentation. Jul 2020.
7. **DS Jones.** *The Development of an Economically Viable Biomass Feedstock Supply Chain to Meet the Renewable Fuel Standards*. ASABE Annual International Meeting. Boston, MA. Jul 2019.
8. **DS Jones, DD Gilette, PE Cooper, RY Salinas, JL Hill, SJ Black, DJ Lew, DA Canelas.** *Cultivating PhD scientists in a pre-med undergraduate environment: creating a community of scholarship and removing institutional barriers*. ASABE Annual International Meeting. Boston, MA. Jul 2019.

Invited Presentations Since Initial Appointment at NC State University – On Campus

1. **DS Jones.** *Data-Driven Decisions for Food and Energy – Spanish Version*. NCSU Wicked Problems, Wolfpack Solutions Course. Video recorded in Jan 2024.
2. **DS Jones.** *NC State's Data Science Academy and Agriculture Analytics*. Animal Science Graduate Seminar, NC State Univ. Oct 2023.
3. **DS Jones.** *Agriculture Analytics to Decarbonize our Food and Energy Needs (3-minute presentation)*. Oak Ridge National Laboratory Visit to NC State Univ. Sep 2023.
4. **DS Jones.** *Agriculture Analytics to Decarbonize our Food and Energy Needs*. Think and Do: Climate Challenges and Solutions- Clean Energy Options. NC State Univ. Sep 2023.
5. **DS Jones.** *Our Health: Data-Driven Decisions for Food and Energy*. NCSU Wicked Problems, Wolfpack Solutions Course. DOI: 10.52750/564142. [link](#). Aug 2023.
6. **DS Jones.** *Developing a Data-Driven and Expert-Driven Workforce for Agriculture*. 2023 SAS Educator Conference. Jul 2023.
7. **DS Jones.** *Agriculture Analytics to Decarbonize our Food and Energy Needs*. Operations Research Program Graduate Seminar, NC State Univ. Sep 2022.
8. **DS Jones.** *Agriculture Analytics to Decarbonize our Food and Energy Needs*. Computer Science Graduate Seminar, NC State Univ. Sep 2022.
9. **DS Jones.** *Future of Food: Data-Driven Decisions for Food and Energy*. NCSU Wicked Problems, Wolfpack Solutions Course. DOI: 10.52750/564142. [link](#). Aug 2022.
10. **DS Jones.** *Data-Decisions in Agriculture for Food and Energy*. American Scientist- Sigma Xi Society. Mar 2022.
11. **DS Jones.** *Precision Agriculture to Decarbonize our National Energy Needs*. Genetic Engineering and Society Center Colloquium, NC State Univ. Oct 2021.
12. **DS Jones.** *Precision Agriculture to Decarbonize our National Energy Needs*. Center for Geospatial Analytics Forum, NC State Univ. Oct 2021.
13. **DS Jones.** *The Development of an Economically Viable Biomass Feedstock Supply Chain to Meet the Renewable Fuel Standards*. Lenovo visit to North Carolina State Univ. Virtual Presentation. Oct 2020.

14. **DS Jones**. *The Development of an Economically Viable Biomass Feedstock Supply Chain to Meet the Renewable Fuel Standards*. Operations Research Program Graduate Seminar. NC State Univ. Virtual Presentation. Oct 2020.
15. **DS Jones**. *The Development of an Economically Viable Biomass Feedstock Supply Chain to Meet the Renewable Fuel Standards*. Forest Biomaterials Department Graduate Seminar, NC State Univ. Virtual Presentation. Sep 2020.

Oral Presentations since Initial Appointment at NC State University (Presentations by students)

^aGraduate student.

1. LB Santos^a, **DS Jones**, BT Lamb, WD Hively, J Jennewein, A Thieme, C Reberg-Horton. *Mapping crop residue cover by integrating satellite time-series imagery and machine learning*. 2024 INFORMS Annual Meeting in the Multi-Objective Decision Support Systems for Coping with Deep Uncertainties session. Seattle, WA. Oct 2024.
2. S McDowell^a, **DS Jones**, RS Hunt^a, S Carpenter^a, Kudenov, M, Williams, C. *The Development of Machine Learning Models for Assessing In-season Sweetpotato Root Growth and Crop Yield Estimates*. 2024 INFORMS Annual Meeting in the Multi-Objective Decision Support Systems for Coping with Deep Uncertainties session. Seattle, WA. Oct 2024.
3. J Pin^a, **DS Jones**, D Hartley. *Optimizing a Nationwide Supply Chain for Oilseeds in Sustainable Aviation Fuel Production under supply and demand uncertainty: Pennycress, Camelina, and Carinata*. 2024 INFORMS Annual Meeting in the Optimization and Data Analytics for Agriculture Operations and Biomass Supply Chains session. Seattle, WA. Oct 2024.
4. J Pin^a, **DS Jones**, D Hartley, P Burli, M Langholtz, C Hellwinckel, D Thompson. *A nationwide Analysis of an Oilseed Supply Chain for Sustainable Aviation Fuel*. ASABE Annual International Meeting. Anaheim, CA. Jul 2024.
5. LB Santos^a, **DS Jones**, BT Lamb, WD Hively, J Jennewein, A Thieme, C Reberg-Horton. *Crop residue mapping using open source satellite and machine learning to improve monitoring of a climate smart agricultural practice*. Emerging Research Showcase: Generative AI in Agriculture & Life Sciences- Two-minute pitch, North Carolina State University. Raleigh, NC. Apr 2024.
6. LB Santos^a, **DS Jones**, BT Lamb, WD Hively, J Jennewein, A Thieme, C Reberg-Horton. *Mapping crop residue cover by integrating satellite time-series imagery and machine learning*. 11th Latin American Student Association, 3 minute thesis competition. NC State University, Raleigh, NC. Mar 2024
7. S McDowell^a. *An Introduction to SAS Visual Analytics using Agricultural*. North Carolina A&T University. Greensboro, NC. Feb 2024.
8. S McDowell^a. *Californians for Pesticide Reform*. Academic Data Science Alliance (ADSA) Annual Meeting. San Antonio, TX. Oct 2023.
9. S McDowell^a. *Californians for Pesticide Reform*. Data Science Institute Summer Internships, University of Chicago. Chicago, IL. Jul 2023.
10. S McDowell^a, **DS Jones**, RS Hunt^a, S Carpenter^a, Kudenov, M. *Using Computer Vision to Assess Root Development and Crop Yield Estimates*. ASABE Annual International Meeting. Omaha, NE. Jul 2023.
11. J Pin^a, **DS Jones**, PH Burli, D Hartley, M Langholtz, CM Hellwinckel, D Thompson. *A Nationwide Analysis of an Oilseeds Supply Chain for Sustainable Aviation Fuel*. ASABE Annual International Meeting. Omaha, NE. Jul 2023.
12. L Huevo, M Sharara, **DS Jones**, E Edward. *Developing a biorefinery approach to manage swine and poultry manures at a watershed level*. ASABE Annual International Meeting. Omaha, NE. Jul 2023.
13. S McDowell^a, **DS Jones**, RS Hunt^a, S Carpenter^a, Kudenov, M. *Using Computer Vision to Assess Root Development and Crop Yield Estimates*. Artificial Intelligence in Agriculture. Orlando, FL. Apr 2023.
14. S Carpenter^a, **DS Jones**, M Kudenov, C Williams. *Sweetpotato Yield Predictions to aid Harvest Timing using High-Throughput Portable Scanner and Machine Learning*. Artificial Intelligence in Agriculture. Orlando, FL. Apr 2023.
15. RS Hunt^a, **DS Jones**, J Holland, J Gottula. *An Approach to Feature Engineering and Comparison of Machine Learning and Statistical Models for Crop Yield Prediction*. Artificial Intelligence in Agriculture. Orlando, FL. Apr 2023.
16. E Pena Martinez^a, M Kudenov, H Nguyen, **DS Jones**, C Williams. *Development and implementation of two high-throughput phenotype scanners in the post-harvest pipeline of sweetpotatoes (Ipomoea batatas)*. National Sweetpotato Collaborators Group Conference. Wilmington, NC. Jan 2023.
17. E Pena Martinez^a, M Kudenov, H Nguyen, **DS Jones**, C Williams. *High-Throughput Imaging to track Sweetpotato values related to growing environment*. Precision Agriculture Scholarship by farms.com. Webinar. Oct 2022.
18. RS Hunt^a, **DS Jones**, J Holland, J Gottula. *An Approach to Feature Engineering and Comparison of Machine Learning and Statistical Models for Crop Yield Prediction*. ASABE Annual International Meeting. Houston, TX. Jul 2022.
19. RS Hunt^a, H Liu^a, C Yencho, K Pecotta, R Mierop, C Williams, **DS Jones**. *On-Farm Precision Agriculture and Big Data Management for Improving Sweetpotato Shape, Size, and Value*. ASABE Annual International Meeting. Houston, TX. Jul 2022.
20. S McDowell^a, **DS Jones**, RS Hunt^a, S Carpenter^a, Kudenov, M. *Using Computer Vision to Assess Root Development and Crop Yield Estimates*. ASABE Annual International Meeting. Houston, TX. Jul 2022.
21. S McDowell^a, **DS Jones**, RS Hunt^a, S Carpenter^a, Kudenov, M. *Using Computer Vision to Assess Root Development and Crop Yield Estimates*. National Sweetpotato Collaborators Group Meeting. New Orleans, LA. Feb 2022.
22. RS Hunt^a, H Liu^a, C Yencho, K Pecotta, R Mierop, C Williams, **DS Jones**. *Analyzing Big Data Generated During Sweetpotato Production*. National Sweetpotato Collaborators Group Meeting. New Orleans, LA. Feb 2022.

23. E Pena Martinez^a, M Kudenov, H Nguyen, **DS Jones**, C Williams. *Statistical Phenotyping of Sweetpotatoes by Imaging Bins: Preliminary Results from a High-Throughput Truck Scanner*. National Sweetpotato Collaborators Group Meeting. New Orleans, LA. Feb 2022.
24. T Hossain^a, **DS Jones**, C Forsberg, C. W., Dale, B. E., Wendt, L. M. *Cellulosic Biorefineries Powered by Nuclear Heat and Hydrogen: A Nationwide Analysis*. AIChE Annual Meeting. Virtual. Nov 2021.
25. T Hossain^a, **DS Jones**, C Forsberg, C. W., Dale, B. E., Wendt, L. M. *Cellulosic Biorefineries Powered by Nuclear Heat and Hydrogen: A Nationwide Analysis*. ASABE Annual International Meeting. Virtual. Jul 2021.
26. T Hossain^a, **DS Jones**, D Hartley, M Griffel, Y Lin, P Burli, D Thompson, M Langholtz, M Davis, C Brandt. *Modeling of Biomass Delivery for Cellulosic-Based Biofuel Production: Field-to-Biorefinery*. ASABE Annual International Meeting. Virtual. Jul 2020.
27. T Hossain^a, **DS Jones**, D Hartley, M Griffel, Y Lin, P Burli, D Thompson, M Langholtz, M Davis, C Brandt. *Cellulosic Biomass Feedstock Logistics for Biofuel Production*. Clean Energy Education & Empowerment (C3E). Virtual. Dec 2020.
28. T Hossain^a, **DS Jones**, D Hartley, M Griffel, Y Lin, P Burli, D Thompson, M Langholtz, M Davis, C Brandt. *Cellulosic Biomass Feedstock Logistics for Biofuel Production*. SAS Optimization Seminar. Virtual. Sep 2020.

Poster Presentations since Initial Appointment

^aGraduate student.

1. LB Santos^a, **DS Jones**, BT Lamb, WD Hively, J Jennewein, A Thieme, C Reberg-Horton. *Mapping crop residue cover by integrating satellite time-series imagery and machine learning*. ASABE Annual International Meeting. Anaheim, CA. Jul 2024.
2. S McDowell^a, **DS Jones**, RS Hunt^a, S Carpenter^a, Kudenov, M, Williams, C. *The Development of Machine Learning Models for the Assessment of In-season Sweetpotato Root Growth and Crop Yield Estimates*. ASABE Annual International Meeting. Anaheim, CA. Jul 2024.
3. LB Santos^a, **DS Jones**, BT Lamb, WD Hively, J Jennewein, A Thieme, C Reberg-Horton. *Mapping crop residue cover by integrating satellite time-series imagery and machine learning*. SAFTS Sustainable Agri-Food Technology Summit. NC State University, Raleigh, NC. May, 2024.
4. LB Santos^a, **DS Jones**, BT Lamb, WD Hively, J Jennewein, A Thieme, C Reberg-Horton. *Mapping crop residue cover by integrating satellite time-series imagery and machine learning*. Artificial Intelligence in Agriculture and Natural Resources Conference. College Station, TX. Apr 2024.
5. J Pin^a, **DS Jones**, D Hartley, P Burli, M Langholtz, C Hellwinckel, D Thompson. *Nationwide Analysis of an Oilseed Supply Chain for Sustainable Aviation Fuel (SAF)*. INFORMS Annual Meeting. Phoenix, AZ. Oct 2023.
6. J Pin^a, **DS Jones**, D Hartley, P Burli, M Langholtz, C Hellwinckel, D Thompson. *Nationwide Analysis of an Oilseed Supply Chain for Sustainable Aviation Fuel (SAF)*. Interns Poster Competition, Idaho National Laboratory. (First runner up). Idaho Falls, ID. Jul 2023. [link](#)
7. J Pin^a, **DS Jones**, V Duraes de Faria, F Pockrandt. *Predicting the Rotation for Sweetpotato Crops in North Carolina*. Artificial Intelligence in Agriculture. Orlando, FL. Apr 2023.

Oral Presentations Prior to Initial Appointment

1. **DS Jones**. *The Development of an Economically Viable Biomass Feedstock Supply Chain to Meet the Renewable Fuel Standards*. Auburn Univ. Auburn, AL. Feb 2019.
2. **DS Jones**. *The Development of an Economically Viable Biomass Feedstock Supply Chain to Meet the Renewable Fuel Standards*. Biological & Agricultural Engineering, NC State University. Raleigh, NC. Nov 2018.
3. **DS Jones**. *The Development of an Economically Viable Biomass Feedstock Supply Chain to Meet the Renewable Fuel Standards*. Oak Ridge National Laboratory. Oak Ridge, TN. Nov 2018.
4. **Jones**. *The Development of an Economically Viable Biomass Feedstock Supply Chain to Meet the Renewable Fuel Standards*. Institute on Teaching and Mentoring. Arlington, VA. Oct 2018.
5. **DS Jones**, S Searcy. *Analysis of a module-based biomass collection system for corn stover and switchgrass*. ASABE Annual International Meeting. Detroit, MI. Jul 2018.
6. **DS Jones**, S Searcy. *GIS-Based Allocation of Lignocellulosic Biorefineries and Depots*. Oak Ridge National Laboratory. Oak Ridge, TN. Aug 2016.
7. **DS Jones**, S Searcy. *GIS-Based Allocation of Lignocellulosic Biorefineries and Depots*. ASABE Annual International Meeting. Orlando, FL. Jul 2016.
8. **DS Jones**, S Searcy. *GIS-Based Allocation of Lignocellulosic Biorefineries and Depots*. Clemson Doctoral Pathfinder Program, Clemson Univ. Clemson, SC. Apr 2016.
9. **DS Jones**, S Searcy. *GIS-Based Allocation of Lignocellulosic Biorefineries and Depots*. ASABE Annual International Meeting. New Orleans, LA. Jul 2015.
10. **DS Jones**, S Searcy, L Eaton. *Assessment of the Predicted Biomass Production in the Billion Ton Study Update*. ASABE Annual International Meeting. New Orleans, LA. Jul 2015.

11. **DS Jones**, S Searcy. *GIS-Based Allocation of Lignocellulosic Biorefineries and Depots*. INFORMS Annual Meeting. Philadelphia, PA. Nov 2015.
12. **DS Jones**, S Searcy. *GIS-Based Allocation of Lignocellulosic Biorefineries and Depots*. Evening of Energy. College Station, TX. Nov 2014.
13. **DS Jones**, S Searcy. *GIS-Based Allocation of Lignocellulosic Biorefineries and Depots*. ASABE Annual International Meeting. Montreal, Canada. Jul 2014.
14. **DS Jones**, S Searcy. *GIS-Based Allocation of Lignocellulosic Biorefineries and Depots*. Univ. of British Columbia. Vancouver, Canada. Jun 2014.
15. **DS Gonzales**, EM Searcy, SD Ekşioğlu. *Analyzing the Cost of Rail and Truck Transportation of Densified Biomass for Bioenergy Production*. INFORMS International. Beijing, China. Jun 2012.
16. **DS Gonzales**, EM Searcy, SD Ekşioğlu. *Analyzing the Cost of Rail and Truck Transportation of Densified Biomass for Bioenergy Production*. MSU Biofuels Conference. Starkville, MS. Oct 2011.
17. **DS Gonzales**, AM Acharya, SD Eksioğlu, S Arora. *An Excel-based Decision Support System for Supply Chain Design and Management of Biofuels*. Transportation, Supply Chain and Logistics Workshop. Starkville, MS. Mar 2011.
18. **DS Gonzales**, AM Acharya, SD Eksioğlu, S Arora. *An Excel-based Decision Support System for Supply Chain Design and Management of Biofuels*. INFORMS Annual Meeting. Austin, TX. Nov 2010.
19. **DS Gonzales**, AM Acharya, SD Eksioğlu, S Arora. *Heuristic Procedures for Biomass-to-Biorefinery Supply Chains*. INFORMS Annual Meeting. Austin TX. Nov 2010.
20. **DS Gonzales**, AM Acharya, SD Eksioğlu, S Arora. *An Excel-based Decision Support System for Supply Chain Design and Management of Biofuels*. Design & Management of Biofuels. MSU Biofuels Conference. Jackson, MS. Aug 2010.

Teaching and Mentoring

1. Committee Memberships

Ph.D. completed as Chair (Total = 1)

1. Tasmin Hossain, Biological and Agricultural Engineering, 2019 – 2022, *Biomass Supply Chain Modeling and Development for Cellulosic Based Biofuel Production*.

M.S. completed as Chair (Total = 1)

1. Rachele Shelly Hunt, Biological and Agricultural Engineering, 2020 – 2022, *A Data Processing, Feature Engineering, Variable Selection, and Machine Learning Modeling Framework for Predictive Agriculture*.

Ph.D. in progress as Chair or Co-Chair (Total = 3)

1. Juliana Pin, Operations Research, 2019 – 2024, *Optimizing the Supply Chain of Oilseeds for Sustainable Aviation Fuel Production*.
2. Shana McDowell, Biological and Agricultural Systems Analysis, 2021 – 2024, *Optimizing the NC Sweetpotato supply chain: Development of Optimization and ML Models to improve SP Yield*.
3. Leticia Santos, Biological and Agricultural Systems Analysis, 2023 – 2026, *Mapping crop residue cover by integrating satellite time-series imagery and machine learning*.

M.S. in progress as Chair or Co-Chair (Total = 1)

1. Scott Carpenter, Biological and Agricultural Systems Analysis, 2022 – 2025, *Evaluation of Environmental Factors that contribute to Predicting Sweetpotato Growth for Commercial Production*.

Ph.D. in progress as Committee Member (Total = 4)

1. Nnamdi Osakwe, Bioinformatics, 2019 – 2024
2. Ece Ari Akdemir, Forestry and Environmental Resources, 2020 – 2024
3. Enrique Peña, Electrical & Computer Engineering, 2021 – 2024
4. Randi Butler, Geospatial Analytics, 2020 – 2024

Ph.D. completed as Committee Member (Total = 7)

1. Mariella Carbajal, Biological and Agricultural Engineering, 2019 – 2023, *Integrating big data across the sweetpotato supply chain*.

2. Yixuan (Wendy) Wang, Civil Engineering, 2017 – 2021, *Improving Life Cycle Assessments for Sustainable Municipal Solid Waste Management Decision Making*.

Ph.D. completed as Graduate School Representative (Total = 1)

1. Hannah Peel, Soil Science, 2019 – 2024, *Influence of Mn and Fe on the Chemistry of As Mobilization in North Carolina Piedmont Aquifer Sediments*.

M.S. completed as Committee Member (Total =1)

1. Somayeh Khanpour Aghdam, Biological & Agricultural Engineering, 2020 – 2021. *Environmental impact assessment (LCA) and techno-economic assessment (TEA) of struvite recovery in swine manure*.

M.S. (non-thesis) completed as Advisor (Total = 1)

1. Juliana Pin, Operations Research, 2019 – 2022.

2. Mentoring Activities

Undergraduate research advising: Carly Graves, Biological & Agricultural Engineering, Fall 2020. Emory New, Biological & Agricultural Engineering, Fall 2020. Jason Oliva Milla, Electrical & Computer Engineering, Fall 2021-Spring 2022. Lily Averette, Biological & Agricultural Engineering, Sum 2021- Spring 2022. Chris Mulvey, Electrical & Computer Engineering, Spring 2022. Carmella Holloway, Computer Science, Sum 2023- Present.

Undergraduate career advising: Brendon Sadlowski, Biological & Agricultural Engineering, Fall 2021-Fall 2022. Costas Pieri, Biological & Agricultural Engineering, Fall 2021-Fall 2022. Paige Seibert, Biological & Agricultural Engineering, Fall 2021-Fall 2022. Sophia Hasapis, Biological & Agricultural Engineering, Fall 2022. Becky Silhy, Biological & Agricultural Engineering, Fall 2022. Lauren Brumley, Biological & Agricultural Engineering, Fall 2022.

Special program mentoring: Fernando Demarchi Pockrandt, Visiting Scholar from Pontificia Universidade Católica do Paraná, Department of Agricultural Engineering, Fall 2021.

Student organization advising: NC State University's Biological and Agricultural Engineering STEM Program to Reach Our Underrepresented Teens (SPROUTS)- Co-advisor.

Synergistic Activities: Outreach and Service to Profession

1. Presenter for professional development and/or outreach events

- Presenter *Building Future Faculty Panel- Professional Development Workshop*. Auburn University. Nov 2023.
- Presenter *What makes me a scientist?- Professional Development Workshop*. Biosciences Collaborative Research Engagement. Duke Univ. Mar 2023.
- Presenter *Networking and Creating a Research Identity- Professional Development Workshop*. NC State University, BAE Graduate Conversations. June 2021.
- Presenter *Science Outreach: Feeding your car with corn*. Flat Rock Middle School. Virtual classroom. Apr 2021.
- Presenter *Mini Academy of Science & Technology Peru: Feeding your car with corn*. Virtual presentation. Oct 2020
- Presenter *Data Management 101*. North Carolina State Univ. Raleigh, NC. Nov 2019.
- Presenter *Effective poster and oral presentations*. Auburn Univ. Auburn, AL. Feb 2019.
- Presenter *Science Match for Middle School Classes: Feeding your car with corn*. PreEminent Charter School. Raleigh, NC. Feb 2019.
- Presenter *Science Day: Feeding your car with corn*. NC School of Science & Mathematics. Durham, NC. Sep 2018.
- Presenter *Communicating with your PI*. Duke Univ. Durham, NC. Feb 2018.

2. Judge/ Reviewer/ Committee Member

- Judge North Carolina Youth Institute Student Paper and Round Table Discussion. 2022.
- Reviewer *Current Opinion in Environmental Sustainability*. 2022.
- Reviewer USDA National Institute of Foods and Agriculture funding programs. 2021-Present.
- Reviewer *Biofuels, Bioproducts and Biorefining Journal*. 2020-Present.
- Judge North Carolina Science and Engineering Fair. Feb 2022.
- Search committee member for CALS Artificial Intelligence Faculty Position at NCSU. 2022-2023.
- Search committee member for two postdoctoral positions in the Data Science Academy at NCSU. 2021.

- Search committee member for one lecturer position in the Data Science Academy at NCSU. 2022-2025.
- Judge conference papers. 2020 American Society for Eng. Education Southeastern Section. Dec 2019.
- Judge written papers and oral presentations, ASABE Boyd-Scott Grad Research Award. Jul 2019, Jul 2020.
- Judge SACNAS: National Diversity in STEM Conference Research Presentation Competition. Sep 2018.

3. Symposium/conference/Workshop Chair/ Co-Chair

- Chair *How to Earn your Worth, A Professional Development Workshop*, North Carolina State Univ. Nov 2023.
- Chair *Visual Analytics Track, NC Plant Science Initiative Hackathon*, North Carolina State Univ. Oct 2023.
- Co-Chair & Trainer *Continuing Professional Development Course, ModelOps: Created a Machine Learning Model. What now?.* ASABE Annual International Meeting. Omaha, NE. Jul 2023.
- Co-chair *Ag Data Optimization Workshop*, North Carolina State Univ. Nov 2022.
- Chair *Agricultural Analytics and Bioprocess, Biofuels and Bioproducts, Enabling New Research Collaborations between Idaho National Laboratory and North Carolina State Univ.*, North Carolina State Univ. Sep 2022.
- Chair *Agricultural Data Science Jam*, North Carolina State Univ. Sep 2022.
- Co-chair *Bioenergy Sustainability Conference*. Dec 2021. [Link](#).
- Co-chair for the *Biofuels Workshop: Can a Nuclear Biofuels System Enable Liquid Biofuels as the Economic Low-carbon Replacement for All Liquid Fossil Fuels and Hydrocarbon Feedstocks and Enable Negative Carbon Emissions?* Lead by the Idaho National Laboratory National Univ. Consortium. Aug 2021. [Link](#).
- Co-chair *Biosciences Collaborative Research Engagement Symposium*. Duke Univ. Jul 2018.
- Chair *Office of Biomedical Graduate Diversity Retreat*. Jun 2018.
- Co-chair *MAPRS (Mid-Atlantic PREP/IMSD Research Symposium)*. Duke Univ. May 2018.

4. Panelist

- *Professional Development Roundtable*. ASABE Annual International Meeting. Boston, MA. Jul 2019.
- *8th Annual NC State Univ. Postdoctoral Research Symposium*. Durham, NC. May 2019
- *Lean In, Women in Science*. NC School of Science and Mathematics. Durham, NC. Apr 2019
- *Mentoring and Graduate Student Success Workshop for Incoming Doctoral Students*. Graduate Student Professional Development, The Graduate School. Duke Univ. Durham, NC. Aug 2018.
- *Choosing a Postdoc Position*. Duke Univ. Durham, NC. Apr 2018
- *Transitioning from Undergraduate to Graduate School*. Eng. Academic & Student Affairs Office, Texas A&M Univ. May 2014.

5. Workshops/Trainings Attended

- Trainee *Building Interdisciplinary Collaborations to Transform Food and Agriculture into Circular Systems: A Mid-Career Mentoring Workshop*. Agricultural & Applied Economics Assoc. Kansas City, MO. Jun 2022.

Other Leadership Roles

Data Science Advisory Board , North Carolina State Univ.	2020-Present
Inclusion, Diversity, Equity, and Access Committee Member , ASABE	2019-Present
BAE Student Retention and Inclusion Committee Member , North Carolina State Univ.	2022-Present
BAE Public Relations and Recruitment Committee Member , North Carolina State Univ.	2020-2022
President of BAEN Graduate Student Association , Texas A&M Univ.	2014-2015
Chair of Multicultural & Diversity Affairs , Graduate Student Council, Texas A&M Univ.	2014-2015
Chair of Travel Award Committee , BAEN Graduate Student Association, Texas A&M Univ.	2013-2014
President & Chapter Founder , SHPE, Mississippi State Univ.	2009, 2011
Vice President of Membership and Recruitment , INFORMS, Mississippi State Univ.	2010, 2011
President & Secretary , Alpha Pi Mu Honor Society for Industrial Engineers	2008, 2011

Professional Memberships

American Society of Agricultural and Biological Engineers (ASABE)
 Institute for Operations Research and the Management Sciences (INFORMS)
 Sloan Scholars Mentoring Network. Sloan Foundation.

American Institute of Chemical Engineers (AIChE)

Society for Advancement of Chicanos and Native Americans in Science (SACNAS)

Society of Hispanic Professional Engineers (SHPE)

Association of Energy Engineers (AEE)

Alpha Epsilon Honor Society of Agricultural, Food and Biological Engineering

Gamma Sigma Delta, Honor Society of Agriculture, Leadership & Development for Success Steering Committee.

Hispanic Leaders in Agriculture and Environment. National Society of Collegiate Scholars.