Simerjeet S. Virk

Department of Biosystems Engineering
College of Agriculture
Auburn University, AL
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Current Appointment: Associate Professor & Extension Specialist (75% Extension, 25% Res.)
Graduate Faculty Status: Level 2, doctoral directing

EDUCATION

Ph.D. in Agricultural and Biological Engineering, University of Georgia — July 2020
University of Georgia, Athens, GA
Dissertation: Planter downforce evaluation in variable field conditions
Advisors: Dr. Changying Li and Dr. Wesley Porter

M.S. in Biosystems Engineering, Auburn University — May 2013
Auburn University, Auburn, AL
Thesis: Sensor development to improve poultry litter application
Advisor: Dr. John P. Fulton

B.Tech. in Agricultural Engineering, Punjab Agricultural University — May 2010
Punjab Agricultural University, Ludhiana, Punjab, India
Capstone Advisor: Dr. Anoop K. Dixit

PROFESSIONAL EXPERIENCE

Associate Professor and Extension Specialist — July 2024 - Present
Department of Biosystems Engineering
Auburn University, Auburn, AL

Assistant Professor and Extension Precision Agriculture Specialist — Aug 2020 – July 2024
Department of Crop and Soil Sciences, University of Georgia, Tifton, GA
Courtesy Appointment – College of Engineering

Research Engineer – Precision Ag and Machinery Systems — Nov 2016 - July 2020
Department of Crop and Soil Sciences
University of Georgia, Tifton, GA

Research Engineer II — Aug 2015 - Oct 2016
Department of Biosystems Engineering
Auburn University, Auburn, AL

Product Validation Engineer — May 2014 – July 2015
Hagie Manufacturing (Presently John Deere)
Clarion, IA

Research Engineer I/II — Jan 2013 – April 2014
Department of Biosystems Engineering
Auburn University, Auburn, AL

Graduate Research Assistant — Aug 2010 – Dec 2012
Biosystems Engineering Department
Auburn University, Auburn, AL

HONORS AND AWARDS

- Larry W. Turner Young Extension Professional. 2025. American Society of Agricultural and Biological Engineers.
- Educational and Outreach Material Award, Short Publications Category. 2024. American Society of Agronomy – Extension Education Community.
- Outstanding Manuscript Reviewer, Machinery Systems Technical Community. 2024. American Society of Agricultural and Biological Engineers.
- Junior Scientist. 2023. The University of Georgia Tifton Campus Awards of Excellence.
- Ag Tech Educator and Researcher of the Year 2023. CropLife Awards of Excellence.
- Educational Aid Blue Ribbon Award. 2023. American Society of Agricultural and Biological Engineers
- Outstanding Manuscript Reviewer, Machinery Systems Technical Community. 2023. American Society of Agricultural and Biological Engineers.
- Junior Extension Specialist. 2022. Georgia Association of County Agricultural Agents
- Precision Ag Researcher of the Year 2022. Conservation Systems Conference
- Educational and Outreach Material Award, Digital Communications Category. 2022. American Society of Agronomy – Extension Education Community.
- Outstanding Manuscript Reviewer, Machinery Systems Technical Community. 2022. American Society of Agricultural and Biological Engineers.
- Outstanding Manuscript Reviewer, Machinery Systems Technical Community. 2021. American Society of Agricultural and Biological Engineers.

HONORS AND AWARDS BY STUDENTS SUPERVISED BY DR. VIRK

- Jacob Sizemore, G.O. Motto Outstanding Graduate Student, ASA-CSSA-SSSA 2025
- Jacob Sizemore, 3rd Place, Graduate Student Poster Competition, AETC Meeting 2025
- Louie Harris, 3rd Place, Graduate Student Poster Competition, AETC Meeting 2025
- Cole Byers, G.O. Motto Outstanding Graduate Student, ASA-CSSA-SSSA 2024
- Ashbin Bhat, 2nd Place, Graduate Student Poster Competition, ASA Annual Meeting 2024
- Cole Byers – Outstanding Graduate Student Award, Int. Prec. Ag. Conference 2024
- Cole Byers – 1st Place, Graduate Student Oral Competition, Beltwide Cotton Conferences 2024
- Cole Byers – Outstanding MS Graduate Student, UGA Tifton Campus Awards of Excellence 2023
- Cole Byers – Selected for Gateway to Ag Careers Program 2023
- Amrit Pokhrel – 1st Place, Graduate Student Oral Competition, ASA Annual Meeting 2023
- Cole Byers – 3rd Place, Graduate Student Oral Competition, ASA Annual Meeting 2023
- Cole Byers – Presentation Excellence Award, Graduate Student Oral Competition ASABE AIM 2023
- Matt Tucker – 2nd Place, Graduate Student Poster Competition, Annual APRES Meeting 2023
- Matt Tucker – 2nd Place, Graduate Student Oral Competition, Beltwide Cotton Conferences 2023
- Amrit Pokhrel – 3rd Place, Graduate Student Oral Competition, Beltwide Cotton Conferences 2023
- Amrit Pokhrel – 1st Place, Graduate Student Oral Competition, ASA Annual Meeting 2022
- Matt Tucker – 2nd Place, Graduate Student Oral Competition, ASA Annual Meeting 2022
- Madan Sapkota – 3rd Place, Graduate Student Oral Competition, ASA Annual Meeting 2022
- Madan Sapkota – 1st Place, Graduate Student Poster Competition, ASA Annual Meeting 2022
- Michael Goodnight – 2nd Place, Graduate Student Poster Competition, ASA Annual Meeting 2022
- Matt Tucker – 3rd Place, Graduate Student Poster Competition, ASA Annual Meeting 2022
- Madan Sapkota – 2nd Place, Graduate Student Oral Competition, Annual APRES Meeting 2022
- Amrit Pokhrel – Outstanding Graduate Student Award, Int. Prec. Ag. Conference 2022

- Matt Tucker – Outstanding Graduate Student Award, Int. Prec. Ag. Conference 2022
- Madison Weekley – 2nd Place, UGA Tifton Young Scholar Poster Competition 2022
- Wyatt Beshara et al. – 1st Place, Innovative Design Award, UGA Capstone Showcase 2022
- Madan Sapkota – 1st Place, Graduate Student Poster Competition, ASA Annual Meeting 2021

SCHOLARLY CONTRIBUTIONS

1. TEACHING

A. COURSES TAUGHT: None

B. GRADUATE STUDENTS WHOSE WORK HAS BEEN COMPLETED:

- Coleman Byers, Master of Science, Agricultural and Biological Engineering, University of Georgia. 2022 – 2024. (Major Professor)
- Matthew Tucker, Master of Science, Crop and Soil Sciences, University of Georgia. 2022 – 2024. (Major Professor)
- Amrit Pokhrel, Master of Science, Crop and Soil Sciences, University of Georgia. 2021 – 2023. (Major Professor)
- Madan Sapkota, Master of Science, Crop and Soil Sciences, University of Georgia. 2021 – 2023. (Major Professor)
- Michael Goodnight, Master of Science, Crop and Soil Sciences, University of Georgia. 2020 – 2022. (Major Professor)
- Luke Fuhrer, Master of Science, Crop and Soil Sciences, University of Georgia. 2020 – 2022. (Committee Member)
- Hayden Godwin, Master of Science, Crop and Soil Sciences, University of Georgia. 2020 – 2022. (Committee Member)
- Cody Mathis, Master of Science, Crop and Soil Sciences, University of Georgia. 2022 – 2024. (Committee Member)

C. GRADUATE STUDENTS WHOSE WORK IS IN PROGRESS:

- Jacob Sizemore, Master of Science, Biosystems Engineering, Auburn University. 2024 – Present. (Major Professor)
- Dalton Beasley, Master of Science, Crop, Soil and Environmental Sciences, Auburn University. 2023 – Present. (Co-Major Professor)
- Shubhdeep Singh, Master of Science, Crop, Soil and Environmental Sciences, Auburn University. 2024 – Present. (Major Professor)
- Ravi Meena, Doctor of Philosophy, Agricultural and Biological Engineering, University of Georgia. 2021 – Present. (Major Professor)
- Daniel Jackson, Doctor of Philosophy, Crop and Soil Sciences, University of Georgia. 2021 – Present. (Committee Member)
- Ashbin Bhat, Master of Science, Crop and Soil Sciences, University of Georgia. 2023 – Present. (Co-Major Professor)
- Mohit Khurana, Master of Science, Crop and Soil Sciences, University of Georgia. 2023 – 2024. (Committee Member)
- Hayley Milner, Master of Science, Horticulture, University of Georgia. 2023 – Present. (Committee Member)

D. COURSES AND CURRICULA DEVELOPED:

- Assisted with the development of BATM 5150/6150, Drone Technologies for Agricultural and Biological Systems (3 credit hours) [Course pending approval from curriculum committee)

E. OTHER CONTRIBUTIONS RELATED TO TEACHING:

Guest Lectures

- CSES 5030/6030 – Advanced Crop Science. Auburn University. Topics: Sprayers, precision spray technology, harvesters, yield monitoring, and data management. Oct. 31, 2024. (1 Lecture)
- CSES 5030/6030 – Advanced Crop Science. Auburn University. Topics: Precision soil sampling, Broadcast Fertilizer Spreaders, and Planting Technology. Oct. 17, 2024. (1 Lecture)
- CRSS 8050 – Advanced Crop Production. University of Georgia. Topics: Ag Machinery Setup and Calibration – Planter, Fertilizer Spreader and Sprayer. July 20, 2023. (1 Lecture and 1 Lab)
- AENG 3300 – Precision Agriculture. Abraham Baldwin Agricultural College. Topics: Use of Spray Drones in Agriculture. March 9, 2023. (1 Lecture and 1 Lab)
- CRSS 4060/6060 – Advanced Topics in Precision Agriculture - CRSS 4060/6060. University of Georgia. Topics: Variable-rate technology and applications in precision agriculture. April 4, 6, and 8, 2022. (2 Lectures and 1 Lab)
- AENG 3300 – Precision Agriculture. Abraham Baldwin Agricultural College. Topics: Remote Sensing and UAVs in Agriculture. April 29, 2021 (2 Lectures and 2 Labs)
- AENG 1100 – Intro to Ag Technology and Systems Management. Abraham Baldwin Agricultural College. Topics: Calibration procedures for spinner-disc fertilizer spreaders. Nov. 18, 2020. (1 Lab)
- CRSS 3030 – Principles of Precision Agriculture. University of Georgia. Topics: Variable-rate technology and applications in precision agriculture. Nov. 13, 2020. (1 Lecture and 1 Lab)
- AENG 1100 – Intro to Ag Technology and Systems Management. Abraham Baldwin Agricultural College. Topics: Overview of precision ag technology and data management in agriculture. Oct. 13, 2019. (1 Lecture and 1 Lab)
- CRSS 3060 – Soils and Hydrology. University of Georgia. Topics: Basics of soil moisture sensing and irrigation in row crops. Sept. 17, 2019. (1 Lecture and 1 Lab)
- AENG 3300 – Precision Agriculture. Abraham Baldwin Agricultural College. Topics: Remote Sensing and UAVs in Agriculture. April 18, 2019. (2 Lectures and 2 Labs)
- CRSS 4060/6060 – Advanced Topics in Precision Agriculture. University of Georgia. Topics: Basics of Ag data management and analysis for prescription mapping. Feb. 18, 2018. (1 Lecture and 1 Lab)
- AENG 3300 – Precision Agriculture. Abraham Baldwin Agricultural College. Topics: Remote Sensing and UAVs in Agriculture. March 7, 2018. (2 Lectures and 2 Labs)

Undergraduate Students Advising and Research:

- Jarret Hancock. UGA Tifton Young Scholar Program. May 2023 – July 2023.
- Andrew Sanders, Austin White, William Norwood. Senior Design Capstone Project. Aug. 2023 – April 2024.
- Jarrett Hancock. UGA Tifton Young Scholar Program. May 2022 – July 2022.

- Madison Weekley. UGA Tifton Young Scholar Program. May 2022 – July 2022.
- Rickey Duong, Lucas Jackson, Daniel Phillips. Senior Design Capstone Project. Aug. 2021 – April 2022.
- Wyatt Beshara, Sam Gignilliat, Matt Bowen. Senior Design Capstone Project. Aug. 2021 – April 2022.
- Coleman Byers, Engineering Summer Internship. June 2021 – August 2021
- Grant Bryson, Connor Smith, Noah Versluis. Senior Design Capstone Project. Aug 2020 – May 2021.

2. RESEARCH/CREATIVE WORK

A. BOOKS: None

B. ARTICLE-LENGTH PUBLICATIONS:

Book Chapters: (In Preparation)

1. Fulton, J.P., E. Hawkins, **S.S. Virk**, K. Shannon, S. Shajahan. 202X. Precision Agriculture Basics Vol. II, Chapter 3.3, Yield Monitoring and Mapping. John Wiley & Sons. (In editing and revisions)

Refereed Journals Articles:

** Indicates publications by graduate students advised/co-advised by Dr. Virk*

1. **Virk, S.S.**, Tucker, M., Harris, G., Smith, A., Levi, M., & Lessl, J. (2025). Efficacy and Economics of Different Soil Sampling Grid Sizes for Site-Specific Nutrient Management in Southeastern USA. *Agronomy*, *15*(4), 903.
2. *Sapkota, M., **S.S. Virk**, R.C. Kemerait, E.P. Prostko. 2025. Effect of Carrier Volume and Nozzle Type on Spray Deposition within the Canopy, Disease Control and Yield in Peanut. *Crop, Forage & Turfgrass Management.* 11(1): e70028.
3. *Sapkota, M., **S.S. Virk**, E.P. Prostko. 2024. Carrier Volume and Nozzle Type Effects on Spray Coverage, Droplet Density and Weed Control in Peanut. *Peanut Science.* 51(1):106-117.
4. *Meena, R., **S.S. Virk**, G.C. Rains, W.M. Porter. 2024. Comparative Performance of a Sprayer Rate Controller and Pulse Width Modulation (PWM) Systems for Site-Specific Pesticide Applications. AgriEngineering. 6(3):3312-3326.
5. *Byers, C., **S.S. Virk**, G.C. Rains, S. Li. 2024. Spray Deposition and Uniformity Assessment of Unmanned Aerial Application Systems (UAAS) at Varying Operational Parameters. *Frontiers in Agronomy*, 6, 1418623.
6. Fuhrer, L., W. Porter, E.M. Barnes, G.C. Rains, J.L. Snider, **S.S. Virk**, J.K. Ward. 2024. Utilizing John Deere's Harvest Identification System in Cotton Fiber Quality Mapping. *Applied Engineering in Agriculture*. 40(4):377-384.
7. Thapa, S. G.C. Rains, W.M. Porter, G. Lu, X. Wang, C.J. Mwitta, **S.S. Virk**. 2024. Robotic Multi-Boll Cotton Harvester System Integration and Performance Evaluation. *AgriEngineering*. 6(1):803-822.
8. Gimode, D., J. Wallace, C. Holbrook, T.G. Isleib, Y. Chu, **S.S. Virk**, W. Porter, P. Ozias-Akins. 2024. Genomic Selection as an Approach to Selecting for Reduced Aflatoxin Contamination in Peanut Under Terminal Drought Stress. *Peanut Science*. 51(1):18-31.

9. Amissah, S., G. Ankomah, R.D. Lee, C.D. Perry, B.J. Washington, W.M. Porter, **S.S. Virk**, H.Y. Sintim. 2024. Assessing corn recovery from early season nutrient stress under different soil moisture regimes. *Frontiers in Plant Science*, *15*, 1344022.
10. *Pokhrel, A., **S.S. Virk**, J. Snider, G. Vellidis, L. Hand, H. Sintim, V. Parkash, D. Chalise, J. Lee, and C. Byers. 2023. Estimating Yield-Contributing Physiological Parameters of Cotton using UAV-Based Imagery*. Frontiers in Plant Science*, 14:1248152.
11. Virk, G.K., J.L. Snider, P. Chee, **S.S. Virk**, V. Parkash, N. Kaur, and D. Jones. 2023. Physiological contributors to yield in advanced cotton breeding lines. *Crop Science*. 2023:1-13.
12. **Virk, S.S.**, M. Sapkota, C. Byers, G. Morgan and E. Barnes. 2023. Utility of Hooded Broadcast Sprayer in Reducing Herbicide Particle Drift. *Cotton Science*. 27:127-139.
13. *Pokhrel, A.P., J.L. Snider, **S.S. Virk,** H.Y. Sintim, L.C. Hand, G. Vellidis, V. Prakash, D.V. Chalise, and J.M. Lee. 2023. Quantifying Physiological Contributions to Nitrogen-Induced Yield Variation in Field Cotton. *Field Crops.* 299, 108976.
14. *Sapkota, M., **S.S. Virk** and G.C. Rains. 2023. Spray Deposition and Quality at Varying Ground Speeds for an Agricultural Sprayer with and without a Rate Controller. *AgriEngineering*. 5(1):506-519.
15. Virk, G.K., J.L. Snider, P. Chee, **S.S. Virk** and D. Jones. 2023. Impact of Intra-Boll Yield Components on Lint Production Per Boll and Fiber Quality in Advanced Breeding Lines. *Crop Science*. 2023:1-15.
16. **Virk, S.S.** and E.P. Prostko. 2022. Survey of Pesticide Application Practices and Technologies in Georgia Agronomic Crops. *Weed Technology*. 36(5):616-628.
17. **Virk, S.S.**, E.P. Prostko, R.C. Kemerait, M.R. Abney, G.C. Rains, C.T. Powell, D.S. Carlson, J.L. Jacobs, and W.G. Tyson. 2021. On-Farm Evaluation of Nozzle Types for Peanut Pest Management Using Commercial Sprayers. *Peanut Science*. 48(2):87-96.
18. **Virk, S.S.**, W.M. Porter, J.L. Snider, G.C. Rains, C. Li and Y. Liu. 2021. Cotton Emergence and Yield Response to Planter Depth and Downforce Settings in Different Soil Moisture Conditions. *AgriEngineering*. 3(2):323-338.
19. **Virk, S.S.**, W.M. Porter, C. Li, G.C. Rains, J.L. Snider and J. Whitaker. 2021. On-Farm Evaluation of Planter Downforce in Varying Soil Textures. *Precision Agriculture*. 22(1):777-799.
20. Thaper, R.K., J.P. Fulton, **S.S. Virk,** O.O. Fasina, and T.P. McDonald. 2020. Effect of Vane Shape on Fertilizer Distribution for a Dual-Disc Spinner Spreader. *Applied Engineering in Agriculture*. 36(5):743-751.
21. **Virk, S.S.**, W.M. Porter, J.L. Snider and J. Whitaker. 2020. Influence of Seeding Rate, Planter Downforce and Cultivar on Crop Emergence and Yield in Singulated and Hill-Drop Cotton. *Cotton Science*. 24(3):137-147.
22. **Virk, S.S.,** J.P. Fulton, W.M. Porter and G.L. Pate. 2020. Row-Crop Planter Performance to Support Variable-Rate Seeding of Maize. *Precision Agriculture*. 21(3): 603-619.
23. **Virk, S.S.**, W.M. Porter, J.P. Fulton and G.L. Pate. 2019. Field Validation of Seed Meter Performance at Varying Seeding Rates and Ground Speeds. *Applied Engineering in Agriculture*. 35(6): 937-948.
24. Zhang. J, **S.S. Virk.**, W.M. Porter, K. Kenworthy, D. Sullivan and B. Schwartz. 2018. Applications of Unmanned Aerial Vehicle Based Imagery in Turfgrass Field Trials. *Frontiers Plant Sci.* 10(1):279.
25. **Virk, S.S.**, J.P. Fulton, O.O. Fasina, and T P. McDonald. 2013. Capacitance and Near-Infrared Techniques for Real-Time Moisture Measurement in Broiler Litter. *Biosystems Engineering*. 116(4): 357-367.

26. **Virk, S.S.**, D.K. Mullenix, A. Sharda, J.B. Hall, C.W. Wood, O.O. Fasina, T.P. McDonald, G.L. Pate, and J.P. Fulton. 2013. Distribution Uniformity of a Blended Fertilizer Applied using a Variable-Rate Spinner-Disc Spreader. *Applied Engineering in Agriculture*. 29(5): 627-636.
27. Fulton, J.P., T.P. McDonald, C.W. Wood, O.O. Fasina, and **S.S. Virk**. 2013. Optimizing Nutrient Stewardship Using Broadcast Fertilizer Application Methods. *Better Crops*. 97(3): 15-17.
28. **Virk, S.S.**, J. P. Fulton, O.O. Fasina, and T. P. McDonald. 2013. Influence of Broiler Litter Bulk Density on Metering and Distribution for a Spinner-Disc Spreader. *Applied Engineering in Agriculture*. 29(4): 473-482.

C. TECHNICAL CONFERENCE PROCEEDINGS (FULL-LENGTH ARTICLES):

** Indicates publications by graduate students advised/co-advised by Dr. Virk. These also represent presentations made by the candidate or students at conferences and meetings.*

1. *D. Beasley, **S.S. Virk**, A.V. Gamble, and T.J. Knappenberger. 2025. Implications of Different Soil Sampling Strategies in Cotton Fields with High Nutrient Variability in the Southeastern United States. 2025 Beltwide Cotton Conference, New Orleans, LA.
2. Singh, S. **S.S. Virk**, L.C. Hand. 2025. Spray Deposition and Efficacy of Cotton Harvest-Aid Applications with Spray Drone and Ground Sprayer. 2025 Beltwide Cotton Conference, New Orleans, LA.
3. *D. Beasley, **S.S. Virk**, C. Kamerer, T. Colley, and G. Harris. 2024. Improving Site-Specific Nutrient Management in the Southeastern US: Variable-Rate Fertilization Based on Yield Goal by Management Zone. 16th International Conference on Precision Agriculture. Manhattan, KS.
4. *C. Byers, **S.S. Virk**, and R.C. Kemerait. 2024. Effect of Application Rate and Height on Spray Deposition and Efficacy of Fungicides Applied with a Spray Drone in Corn. 16th International Conference on Precision Ag. Manhattan, KS.
5. **S.S. Virk**, C. Byers, R.K. Meena, J. Kichler, R.C. Kemerait, and L.C. Hand. 2024. Spray Deposition and Efficacy of Pesticide Applications with Spray Drones in Row Crops in the Southeastern US. 16th International Conference on Precision Ag. Manhattan, KS.
6. R.K. Meena, **S.S. Virk** and C. Byers. 2024. Static and In-Field Validation of Application Accuracy of Commercial Spray Drones at Varying Rates and Speeds. 16th International Conference on Precision Ag. Manhattan, KS.
7. R.K. Meena, **S.S. Virk**, C. Byers, and G.C. Rains. 2024. Application Accuracy of Two Different Sprayer Flow Control Systems During Site-Specific Pesticide Applications. 16th International Conference on Precision Ag. Manhattan, KS.
8. *C. Byers, **S.S. Virk**, R.K. Meena and G.C. Rains. 2024. Spray Deposition Characterization of Uniform and Variable-Rate Applications with Spray Drones. 16th International Conference on Precision Ag. Manhattan, KS.
9. *Beasley, D., M. Tucker, **S.S. Virk**, G.M. Harris, M. Levi, J. Lessl. 2024. Potential of Zone Based Soil Sampling Strategies for Site Specific Nutrient Management in Cotton. 2024 Beltwide Cotton Conference, Fort Worth, TX.
10. *Byers, C., **S.S. Virk**, L.C. Hand, R.K. Meena, J.D. Beasley, E. Barnes. 2024. Spray Deposition and Efficacy of Cotton Harvest Aid Applications with a Spray Drone and Ground Sprayer. 2024 Beltwide Cotton Conference, Fort Worth, TX.
11. *Pokhrel, A., **S.S. Virk**, J.L. Snider, G. Vellidis, and V. Prakash. 2023. Using UAS Multispectral Imagery to Estimate Yield-Determining Physiological Parameters of Cotton. 2023 Beltwide Cotton Conference. New Orleans, LA.

12. *Tucker, M., **S.S. Virk**, G. Harris, M. Levi and J. Lessl. 2023. Impact of Soil Sampling Grid Size on Efficacy and Economics of Site-Specific Nutrient Management in Cotton. 2023 Beltwide Cotton Conference. New Orleans, LA.
13. **Virk, S.S.** and E.P. Prostko. 2022. Survey of Pesticide Application Practices and Technologies in Georgia Agronomic Crops. 15th International Conference on Precision Ag. Minneapolis, MN.
14. *M. Tucker, **S.S. Virk**, G. Harris, M. Levi, and J. Lessl. 2022. Effectiveness of Different Precision Soil Sampling Strategies for Site-Specific Nutrient Management in Row-Crops. 15th International Conference on Precision Ag. Minneapolis, MN.
15. *Pokhrel, A., **S.S. Virk**, J.L. Snider, G. Vellidis and V. Prakash. 2022. Potential of UAS Multispectral Imagery for Predicting Yield Determining Physiological Parameters of Cotton. 15th International Conference on Precision Ag. Minneapolis, MN.
16. **Virk, S.S.**, B. Pieralisi**,** W. Porter, J. Register, B. Starr, G. Morgan and E. Barnes. 2021. Evaluation of MagGrow Technology for Defoliating Cotton in Mississippi and Georgia. Annual Beltwide Cotton Conference 2021, National Cotton Council: Cordova, TN.
17. ***Virk, S.S.**, W.M. Porter, J.L. Snider, and J. Whitaker Harris. 2019. Considerations for Planter Downforce and Seeding Rate to Maximize Emergence and Yield in Singulated Versus Hill-Drop Planted Cotton. 2019 Beltwide Cotton Conference. New Orleans, LA.
18. D. Daughtry, W. Porter, G. Harris, R. Noland, J. Snider and **S.S. Virk**. 2018. Correlating Plant Nitrogen Status in Cotton with UAV Based Multispectral Imagery. 14th International Conference on Precision Ag, Montreal, Quebec, Canada.
19. Colley, R.C., Fulton, J.P., **S.S. Virk**, and E.L. Hawkins. 2018. Field Level Management and Data Verification of Variable Rate Fertilizer Application. 14th International Conference on Precision Ag, Montreal, Quebec, Canada.
20. ***Virk, S.S.**, W.M. Porter, J.L. Snider, and J. Whitaker Harris. 2018. Evaluating the Effect of Planter Downforce and Seed Vigor on Crop Emergence and Yield in Cotton. 2018 Beltwide Cotton Conference. San Antonio, TX.
21. **Virk, S.S.**, J.P. Fulton, W.M. Porter and G.L. Pate. 2017. Field Validation of Seed Meter Performance at Varying Seeding Rates and Ground Speeds. In Proceedings of ASABE Annual International Meeting 2017, Spokane, WA.
22. Colley, R., J. Fulton, **S.S. Virk** and E. Hawkins. 2017. Dry Fertilizer Distribution of Two Sources when Applying with VRT Spinner-Disc Spreader. In Proceedings of ASABE Annual International Meeting 2017, Spokane, WA.
23. **Virk, S.S.**, J. P. Fulton. 2014. Row-crop Planter Requirements to Support Variable-Rate Seeding of Maize. 14th International Conference on Precision Agriculture, Quebec, Canada.
24. **Virk, S.S.**, J. P. Fulton, O.O. Fasina, and T. P. McDonald. 2013. Real-Time Moisture Measurement of Broiler Litter Using Capacitance and Near-Infrared Techniques. ASABE Annual International Meeting 2013, Kansas City, MO.
25. **Virk, S.S.**, J. P. Fulton, O.O. Fasina, and T. P. McDonald. 2012. Effect of Litter Bulk Density on Field Application when Using a Variable-Rate Spinner-Disc Spreader. ASABE Annual International Meeting 2012, Dallas, TX.
26. **Virk, S.S.**, D.K. Mullenix, A. Sharda, J.B. Hall, C.W. Wood, O.O. Fasina, T.P. McDonald, G.L. Pate, and J.P. Fulton. 2011. Mass and Nutrient Distribution Uniformity of a Blended Fertilizer Using a Spinner-Disc Spreader Equipped with VRT. ASABE Annual International Meeting 2011, Louisville, KY.

D. PUBLISHED ABSTRACTS:

** Indicates publications by graduate students advised/co-advised by Dr. Virk. These also represent presentations made by the candidate or students at conferences and meetings.*

1. Virk, S.S., E. McGriff and N. McMichen. 2025. Opportunities and Challenges of Utilizing Spray Drones for Cotton Defoliation. 2025 Cotton and Rice Conference, Memphis, TN.
2. **Virk, S.S.,** J.G. Santos, C. Byers, D.J. Beasley and S. Singh. 2024. Performance Evaluation of Dry Material Applications with Drones. 2024 ASA, CSSA, SSSA International Annual Meeting, San Antonio, TX.
3. *Singh, S., **S.S. Virk** and C. Byers. 2024. Assessing Spray Deposition and Canopy Penetration for Fungicide Applications in Corn with Spray Drones. 2024 ASA, CSSA, SSSA International Annual Meeting, San Antonio, TX.
4. *Beasley, D.J., **S.S. Virk**, T. Colley, C. Kamere and A. Gamble. 2024. Potential of Different Soil and Crop Spatial Properties for Zone-Based Precision Soil Sampling. 2024 ASA, CSSA, SSSA International Annual Meeting, San Antonio, TX.
5. *Bhat, A., J.L. Snider, **S.S. Virk**, V. Prakash and J.M. Lee. 2024. Cotton Growth and Yield Response to Different Nitrogen and Plant Growth Management Strategies. 2024 ASA, CSSA, SSSA International Annual Meeting, San Antonio, TX.
6. Kumar, M., **S.S. Virk**, J.L. Snider, S. Singh and V. Prakash. 2024. Effect of Varying Irrigation and N Applications on Various Physiological Parameters and Yield Components in Corn. 2024 ASA, CSSA, SSSA International Annual Meeting, San Antonio, TX.
7. Jakhar, A., **S.S. Virk**, R. Roth, G. Scarpin and L.M. Bastos. 2024. Optimizing In-Season Sensor-Based Nitrogen Management in Corn by Modulating Pre-Planting and Side-Dress Application Rates. 2024 ASA, CSSA, SSSA International Annual Meeting, San Antonio, TX.
8. Kumar, M., **S.S. Virk**, J.L. Snider, J.M. Lee and V. Prakash. 2024. Evaluating the Effect of Thryvon Technology on Cotton Root and Shoot Growth. 2024 ASA, CSSA, SSSA International Annual Meeting, San Antonio, TX.
9. *Bhat, A., **S.S. Virk**, J.L. Snider and C. Byers. 2024. Potential of UAV-Based Imagery to Predict Yield-Driving Physiological Traits in Cotton Under Varying N and PGR Management Regimes. 2024 ASA, CSSA, SSSA International Annual Meeting, San Antonio, TX.
10. Jakhar, A., G. Scarpin, **S.S. Virk**, R. Roth, L.M. Bastos and L.N. Lacerda. 2024. In-Season Sensor-Based Nitrogen Management in Corn Affected by Sensor Type, Vegetation Index and Pre-Planting Nitrogen. 2024 ASA, CSSA, SSSA International Annual Meeting, San Antonio, TX.
11. Jakhar, A., **S.S. Virk**, G. Scarpin, R. Roth and L.M. Bastos. 2024. Optimizing Corn Yield, Nutrient Use Efficiency, and Partial Profit through Side-Dress Nitrogen Timing, Rate, and Sensor-Based Variable Nitrogen Management. 2024 ASA, CSSA, SSSA International Annual Meeting, San Antonio, TX.
12. *Beasley, D.J., **S.S. Virk**, G.M. Harris and L. Bastos. 2024. Evaluation of Different Zone-Based Soil Sampling Strategies for Variable-Rate Lime Application in Peanut Fields. 56th American Peanut Research and Education Society Annual Meeting, Oklahoma City, OK.
13. *Hancock, J.C., **S.S. Virk**, C.W. Byers and R. Meena. 2024. Assessing Spray Deposition and Efficacy of Peanut Fungicide Applications with Drone and Ground Sprayers. 56th American Peanut Research and Education Society Annual Meeting, Oklahoma City, OK.
14. Blaser, M., W.M. Porter, **S.S. Virk**, T. Bourlai and A. Koller. 2024. Utilizing Computer Vision for Laboratory Evaluations of Electric Seed Meters for Peanut Seed Singulation. 56th American Peanut Research and Education Society Annual Meeting, Oklahoma City, OK.
15. **Virk, S.S.,** M. Tucker, J. Beasley, J. Kichler, C. Majeski, L.C. Hand. 2024. On-Farm Evaluation of Variable-Rate Seeding of Cotton in Georgia. 2024 Beltwide Cotton Conference, Fort Worth, TX.
16. *Meena, R.K., C. Byers, **S.S. Virk**, G.K. Virk, L.C. Hand. 2024. Assessing Accuracy and Effectiveness of Variable Rate PGR Applications with Spray Drones in Cotton. 2024 Beltwide Cotton Conference, Fort Worth, TX.

17. Kichler, J., **S.S. Virk**, C. Byers, R. Kemerait. 2024. Evaluation of Fungicide Applications with Spray Drone for Managing Foliar Diseases in Cotton. 2024 Beltwide Cotton Conference, Fort Worth, TX.
18. *Bhat, A., C. Byers, **S.S. Virk**, J.L. Snider, L.C. Hand. 2024. Potential of UAV Imagery to Estimate Cotton Harvest Aids Efficacy for Different Application Methods and Carrier Volumes. 2024 Beltwide Cotton Conference, Fort Worth, TX.
19. Kumar, M., G.K. Virk, **S.S. Virk**, J. Snider, J. Lee, V. Parkash. 2024. Evaluating the Effects of ThryvOnTM Technology on Cotton Root and Shoot Growth and Development. 2024 Beltwide Cotton Conference, Fort Worth, TX.
20. *Byers, C., **S.S. Virk**, R. Kemerait, R. Roth, S. Li. 2023. Spray Deposition and Efficiency of Fungicide Applications in Corn with a Spray Drone. 2023 ASA, CSSA, SSSA International Annual Meeting. St. Louis, MO.
21. *Meena, R., **S.S. Virk**, C. Byers, G. Rains. 2023. Performance of Current Spray Technologies for Site-Specific Pesticide Applications. 2023 ASA, CSSA, SSSA International Annual Meeting. St. Louis, MO.
22. *Sapkota, M., **S.S. Virk**, R. Kemerait, E. Prostko, G. Rains. 2023. Spray Deposition and Quality at Varying Ground Speeds for Two Rate Control Systems on Agricultural Sprayers. 2023 ASA, CSSA, SSSA International Annual Meeting. St. Louis, MO.
23. *Pokhrel, A., **S.S. Virk**, J.L. Snider, G. Vellidis, and V. Prakash. 2023. Utilizing UAV based RGB and Multispectral Imagery to Predict Yield Contributing Physiological Parameters of Cotton. 2023 ASA, CSSA, SSSA International Annual Meeting. St. Louis, MO.
24. *Sapkota, M., **S.S. Virk**, R. Kemerait, E. Prostko, G. Rains. 2023. Assessing Fungicide Deposition into Peanut Canopies at Different Carrier Volumes and Droplet Sizes. 2023 ASA, CSSA, SSSA International Annual Meeting. St. Louis, MO.
25. *Meena, R., **S.S. Virk**, C. Byers, G. Rains. 2023. Assessing As-Applied Data Quality and Accuracy of Current Spray Technologies for Site-Specific Pesticide Applications. 2023 ASA, CSSA, SSSA International Annual Meeting. St. Louis, MO.
26. *Byers, C., **S.S. Virk**, R.K. Meena. 2023. Spray Performance Characterization of DJI Agras T30 Drone Sprayer at Varying Heights, Speeds and Nozzle Types. 2023 ASA, CSSA, SSSA International Annual Meeting. St. Louis, MO.
27. *Byers, C., **S.S. Virk**, G. Rains, and S. Li. 2023. Spray Performance Evaluation of DJI Agras T30 UAS Sprayer at Different Application Parameters. 2023 ASABE Annual International Meeting, Omaha, NE.
28. *Tucker, M., **S.S. Virk**, J. Kichler, S. McAllister, J. Hand, S. Carlson, P. Sapp, G. Harris, and A. Smith. 2023. Influence of Soil Sampling Grid Size on Application Accuracy and Economics of Site Site-Specific Soil pH Management in Peanut Fields. 2023 APRES Annual Meeting, Savannah, GA.
29. *Sapkota, M., **S.S Virk**, R. Kemerait, E. Prostko, and G. Rains. 2023. Assessing Fungicide Deposition into Peanut Canopies at Different Carrier Volumes and Droplet Sizes. 2023 APRES Annual Meeting, Savannah, GA.
30. *Sapkota, M., and **S.S. Virk**. 2023. Effect of Carrier Volume and Droplet Size on Coverage, Droplet Density, and Herbicide Efficacy in Peanut. 2023 APRES Annual Meeting, Savannah, GA.
31. **Virk, S.S.**, C. Byers and G. Rains. 2023. Seed Metering Performance of Different Peanut Seed Meters at Varying Seeding Rates and Planting Speeds. 2023 APRES Annual Meeting, Savannah, GA.
32. *Tucker, M., **S.S. Virk**, J. Kichler, C. Majeski and L. Hand. 2023. On-Farm Evaluation of Seeding Rate by Management Zone to Manage Within-Field Cotton Yield Spatial Variability. 2023 Beltwide Cotton Conference. New Orleans, LA.

33. **Virk, S.S.**, M. Tucker and J. Kichler. 2023. In-Field Performance Evaluation of Precision Planting Smart Depth at Varying Seeding Depths. 2023 Beltwide Cotton Conference. New Orleans, LA.
34. **Virk, S.S.**, R. Meena, M. Tucker and G. Rains. 2023. Spray Technology and Application Considerations for Site-Specific Plant Growth and Weed Management in Cotton. 2023 Beltwide Cotton Conference. New Orleans, LA.
35. Thapa, S., G. Rains, W. Porter and S.S. Virk. 2023. Evaluation of an End-Effector Design and Quantification of Vacuum Conveying Systems for Robotic Harvesting. 2023 Beltwide Cotton Conference. New Orleans, LA.
36. **Virk, S.S.**, M. Tucker, J. Kichler and W. Porter. 2023. Should Cotton Yield Mapping Accuracy be Improved Using On-the-Go Calibration. 2023 Beltwide Cotton Conference. New Orleans, LA.
37. *Pokhrel, A., J.L. Snider, **S.S. Virk**, H. Sintim, L. Hand, G. Vellidis, V. Prakash and J. Lee. 2023. Physiological Contributions to Cotton Yield Loss Under Nitrogen Stress. 2023 Beltwide Cotton Conference. New Orleans, LA.
38. McAllister, S.T., R.C. Kemerait, **S.S. Virk**, B.G. Crews and B. Starr. 2023. Evaluating Aerial Fungicide Carrier Rates in Georgia Cotton. 2023 Beltwide Cotton Conference. New Orleans, LA.
39. Virk, G., J.L. Snider, P. Chee, **S.S. Virk**, V. Prakash and N. Kaur. 2023. Assessing Physiological Basis of Genetic Yield Improvement and Seedling Vigor in Advanced Cotton Breeding Lines. 2023 Beltwide Cotton Conference. New Orleans, LA.
40. **Virk, S.S.**, M. Tucker, J. Kichler, S. McAllister, J. Hand, S. Carlson, P. Sapp, G. Harris and A. Smith. 2022. Application Accuracy and Economics of Different Grid Sizes for Precision Soil Sampling in Georgia. 2022 Annual GACAA Meeting, Dalton, GA.
41. **Virk, S.S.**, M. Tucker, C. Mathis and W. Porter. 2022. Field Performance of a Precision Seed Metering and Delivery System for Variable-Rate Seeding Applications. 2022 ASA, CSSA, SSSA Annual Meeting. Baltimore, MD.
42. *M. Tucker, **S.S. Virk**, G. Harris, M. Levi and J. Lessl. 2022. Comparative Analysis of Precision Soil Sampling Strategies for Mapping Soil Nutrient Variability and Application Accuracy. 2022 ASA, CSSA, SSSA Annual Meeting. Baltimore, MD.
43. *M. Tucker, **S.S. Virk**, G. Harris, M. Levi and J. Lessl. 2022. Economic Analysis of Different Precision Soil Sampling Strategies in the Southeastern US. 2022 ASA, CSSA, SSSA Annual Meeting. Baltimore, MD.
44. *Goodnight, M., **S.S. Virk**, C. Bryant, G. Harris and W. Porter. 2022. Corn Growth and Yield Response to Different Pre-Plant Dry Fertilizer Application Methods. 2022 ASA, CSSA, SSSA Annual Meeting. Baltimore, MD.
45. *Goodnight, M., **S.S. Virk**, C. Bryant, G. Harris and W. Porter. 2022. Effect of Non-Uniform Pre-Plant Dry Fertilizer Application on Corn Growth and Yield. 2022 ASA, CSSA, SSSA Annual Meeting. Baltimore, MD.
46. *Sapkota, M., **S.S. Virk**, G.C. Rains, E.P. Prostko and R.C. Kemerait. 2022. Fungicide Spray Coverage and Penetration into Peanut Canopies at Different Application Volumes and Droplet Sizes. 2022 ASA, CSSA, SSSA Annual Meeting. Baltimore, MD.
47. *Sapkota, M., **S.S. Virk**, G.C. Rains, E.P. Prostko and R.C. Kemerait. 2022. Spray Deposition and Quality Assessment at Different Ground Speeds for a Boom Sprayer with and without a Rate Controller. 2022 ASA, CSSA, SSSA Annual Meeting. Baltimore, MD.
48. *Pokhrel, A., J.L. Snider, **S.S. Virk**, H. Sintim, L. Hand, G. Vellidis, V. Prakash and J. Lee. 2022. Quantifying Yield Loss Contributions of Physiological Parameters under Nitrogen Stress in Cotton. 2022 ASA, CSSA, SSSA Annual Meeting. Baltimore, MD.
49. *Pokhrel, A., **S.S. Virk**, J.L. Snider, G. Vellidis and V. Prakash. 2022. Predicting Yield-Driving Physiological Parameters of Cotton from UAS Multispectral Imagery. 2022 ASA, CSSA, SSSA Annual Meeting, Baltimore, MD.

50. **Virk, S.S.**, M. Tucker and G. Harris. 2022. Evaluating Accuracy and Distribution Uniformity of Gypsum Application in Peanut for Broadcast Spreader. 2022 Annual APRES Meeting, Dallas, TX.
51. *Tucker, M., **S.S. Virk** and G.H. Harris. 2022. Efficacy and Economics of Precision Soil Sampling Strategies for Site-Specific Soil pH Management in Peanut. 2022 Annual APRES Meeting, Dallas, TX.
52. *Tucker, M., **S.S. Virk**, G.H. Harris, J.T. Hand and A.R. Smith. 2022. Influence of Within-Field Soil pH Variability on Peanut Growth and Yield. 2022 Annual APRES Meeting, Dallas, TX.
53. *Sapkota, M., **S.S. Virk**, E.P. Prostko, R.C. Kemerait and G.C. Rains. 2022. Influence of Application Volume and Droplet Size on Spray Penetration into Peanut Canopy. 2022 Annual APRES Meeting, Dallas, TX.
54. *Sapkota, M., **S.S. Virk**, E.P. Prostko, R.C. Kemerait and G.C. Rains. 2022. Spray Deposition and Quality as Affected by Ground Speed for a Boom Sprayer without a Rate Controller. 2022 Annual APRES Meeting, Dallas, TX.
55. *Tucker, M., **S.S. Virk**, J. Kichler, C. Majeski and L. Hand. 2022. On-Farm Evaluation of the Potential of Rank Growth as Influenced by Seeding Rate and Soil Type in Georgia. 2022 Beltwide Cotton Conference, San Antonio, TX.
56. **Virk, S.S.**, M. Sapkota, M. Goodnight, S. Culpepper and L. Hand. 2022. Effect of Hooded Sprayer and Spray Quality on Herbicide Particle Drift. 2022 Beltwide Cotton Conference, San Antonio, TX.
57. *Pokhrel, A., J.L. Snider, **S.S. Virk**, H. Sintim, L. Hand, G. Vellidis, V. Prakash and J. Lee. 2022. Physiological Contributions to Cotton Yield Loss Under Nitrogen Stress. 2022 Beltwide Cotton Conference, San Antonio, TX.
58. **Virk, S.S.**, M. Sapkota, R. Kemerait, E. Prostko. 2021. Effect of Spray Volume and Droplet Size on Coverage and Canopy Penetration in Peanut. 2021 ASA, CSSA, SSSA International Annual Meeting, Salt Lake City, UT.
59. *Goodnight, M., **S.S. Virk**, C. Bryant, G. Harris. 2021. Effect of Dry Fertilizer Application Methods on Corn Growth and Yield. 2021 ASA, CSSA, SSSA International Annual Meeting, Salt Lake City, UT.
60. *Sapkota, M., **S.S. Virk**, G. Rains, W. Porter, E. Prostko. 2021. Influence of Ground Speed on Spray Quality and Coverage for a Conventional Boom Sprayer without a Rate Controller. 2021 ASA, CSSA, SSSA International Annual Meeting, Salt Lake City, UT.
61. Fuhrer, L., W.M. Porter, J.L. Snider, G. Rains, **S.S. Virk**. 2021. Utilization of John Deere's HID System to Aid Production Decisions. 2021 ASA, CSSA, SSSA International Annual Meeting, Salt Lake City, UT.
62. Russel, A., W.M. Porter, C.J. Bryant, **S.S. Virk**. 2021. Relationships between Advanced Planter Components and Speed and How they Effect Stand Uniformity and Yield in Corn. 2021 ASA, CSSA, SSSA International Annual Meeting, Salt Lake City, UT.
63. **Virk, S.S.,** E.P. Prostko, R.C. Kemerait, M.R. Abney, G.C. Rains, C.T. Powell, D.S. Carlson, J.L. Jacobs and W.G. Tyson. 2021. On-Farm Evaluation of Nozzle Types for Peanut Pest Management Using Commercial Sprayers. Abstract. America Peanut Research and Education Society Annual Virtual Meeting 2021.
64. **Virk, S.S.**, W.M. Porter and C. Bryant. 2020. Field Performance of Two Different Planter Systems at Multiple Ground Speeds in Corn. Abstract. 2020 ASA, CSSA, SSSA International Annual (Virtual) Meeting.
65. **Virk, S.S.,** W.M. Porter, S. Monfort and C. Pilon. 2020. Crop Emergence and Yield Response at Different Seeding Depths and Planter Downforces for Peanuts Planted in Loamy Sand Soils. Abstract. 2020 America Peanut Research and Education Society Annual Virtual Meeting.

66. **Virk, S.S.**, W.M. Porter, J.L. Snider, J. Whitaker and C. Li. 2020. Evaluation of Seeding Depth and Planter Downforce for Planting Cotton in Diverse Field Conditions. 2020 Beltwide Cotton Conference, Austin, TX.
67. **Virk, S.S.**, W.M. Porter, P. Sapp, R. Barrentine, S. Hollifield and J. Porter. 2020. On-Farm Evaluation of Planter Downforce in Varying Soil Textures for Improving Cotton Emergence. Abstract. 2020 Beltwide Cotton Conference, Austin, TX.
68. J. Kichler, W.M. Porter and **S.S. Virk**. 2020. Evaluation of John Deere Module Weighing System for Use in On-Farm Research Trial Evaluation. 2020 Annual Beltwide Cotton Conference, Austin, TX.
69. **Virk, S.S**., W. Porter, K. Fue, J. Snider and J. Whitaker. 2019. Considerations for Planter Downforce and Seeding Rate to Maximize Emergence in Singulated versus Hill-Drop Planted Cotton. 2019 Beltwide Cotton Conference, New Orleans, LA.
70. Liu, Y., **S.S. Virk**, W. Porter, J. Whitaker and J. Snider. Economic Analysis of Seeding Rate and Planter Downforce in Singulated and Hill-Drop Planted Cotton. 2019 Beltwide Cotton Conference, New Orleans, LA.
71. Daughtry, D., **S.S. Virk**, G. Harris, J. Snider, R. Noland and W. Porter. 2018. Collection, Processing and Analysis of In-Season Cotton Multispectral and Fertility Data utilizing Unmanned Aerial Systems. 2018 ASA, CSSA, SSSA International Annual Meeting, Baltimore, MD.
72. Porter, W., **S.S. Virk**, J. Snider, J. Whitaker, and W. Monfort. 2018. The Importance of Planter Depth, Downforce, and Seedling Vigor on Crop Emergence and Yield. 2018 ASA, CSSA, SSSA International Annual Meeting, Baltimore, MD.
73. Zhang, J., **S.S. Virk**, W. Porter, K. Kenworthy and B. Schwartz. 2018. Application of Unmanned Aerial Vehicle Based Imagery in Turfgrass Variety Trials. Abstract. 2018 ASA, CSSA, SSSA International Annual Meeting, Baltimore, MD.
74. **Virk, S.**, W. Porter, S. Monfort and C. Pilon. 2018. Investigation of Planter Parameters for Maximizing Peanut Emergence. Abstract. 2018 America Peanut Research and Education Society Annual Meeting, Williamsburg, VA.

E. Presentations at Professional Conferences and Meetings

** Indicates presentations by graduate students advised/co-advised by Dr. Virk. Only include presentations not listed earlier in sections C and D for conciseness.*

1. Sizemore, J., **Virk, S.S.**, S. Li, A.V. Gamble. 2025. Application Rate and Uniformity Assessment for Cover Crop Seeding with Drones. 2025 Agricultural Equipment Technology Conference, Louisville, KY. (Poster)
2. Harris, L., T. Rehman, **S.S. Virk**, D. Russel, K. Balkcom. 2025. Weed Detection in Vegetable Crops using Yolo: A Performance Analysis Under Different Conditions and Settings. 2025 Agricultural Equipment Technology Conference, Louisville, KY. (Poster)
3. **Virk, S.S.,** J.G. Santos, C. Byers, D.J. Beasley and S. Singh. 2024. Performance Evaluation of Dry Material Applications with Drones. 2024 ASABE Annual International Meeting, Anaheim, CA. (Oral)
4. *Meena, R., **S.S. Virk**, C. Byers, G.C. Rains and W.M. Porter. 2024. Field Performance Validation of Rate Control Systems on Agricultural Sprayers for Site-Specific Pesticide Applications. 2024 ASABE Annual International Meeting, Anaheim, CA. (Oral)
5. *Byers, C., **S.S. Virk**, R. Meena and G.C. Rains. 2024. Spray Deposition and In-Swath Uniformity of Unmanned Aerial Application Systems (UAAS) equipped with Rotary Atomizers at Varying Operational Parameters. 2024 ASABE Annual International Meeting, Anaheim, CA. (Oral)

6. Thapa, S., G.C. Rains, W.M. Porter, G. Lu, X. Wang, C. Mwitta and **S.S. Virk**. 2024. Harvesting Performance of a Robotic Multi-Boll Cotton Harvester. 2024 ASABE Annual International Meeting, Anaheim, CA. (Oral)
7. Blaser, M., W.M. Porter, **S.S. Virk**, G.C. Rains, T. Bourlai and A. Koller. 2024. Performance Monitoring of Peanut Seed Meters with Computer Vision for State-of-the-Art Vacuum Seed Meters. 2024 ASABE Annual International Meeting, Anaheim, CA. (Oral)
8. Ngimbwa, P., C. Mwitta, W.M. Porter, **S.S.** Virk, M. Velni and G.C. Rains. 2024. Harnessing Stereo Vision Systems on a Multipurpose Intelligent Ground Rover for Precision Cotton Growth Monitoring. 2024 ASABE Annual International Meeting, Anaheim, CA. (Oral)
9. *Byers, C., **S.S. Virk**, and R.C. Kemerait. 2024. Spray Performance Assessment of a DJI T30 Spray Drone to Optimize Application Efficiency. 2024 Agricultural Equipment & Technology Conference, Louisville, KY. (Poster)
10. *Meena, R., **S.S. Virk**, C. Byers and G. Rains. 2024. Field Performance of Modern Spray Technologies on Agricultural Sprayers for Site-Specific Pesticide Applications. 2024 Agricultural Equipment & Technology Conference, Louisville, KY. (Poster)
11. **Virk, S.S.**, M. Tucker and J. Kichler. 2023. Precision Planting SmartDepth Evaluation for Assessing Seeding Depth Accuracy and Row Row-to -Row Variability. 2023 ASABE Annual International Meeting. Omaha, NE. (Oral)
12. **Virk, S.S.**, G. Harris and M. Tucker. 2023. Evaluating Precision Dry Fertilizer Placement to Improve Nutrient Use Efficiency and Corn Yield in the Southeastern US. 2023 ASABE Annual International Meeting. Omaha, NE. (Oral)
13. *Sapkota, M., **S.S. Virk**, E. Prostko, R. Kemerait and G. Rains. 2023. Spray Deposition and Quality Assessment at Varying Ground Speeds for a Boom Sprayer with and without a Rate Controller. 2023 IIPA Conference, Athens, GA. (Poster)
14. *Meena, R. and **S.S. Virk**. 2023. Assessing Spray Droplet Spectra to Develop Spray Technologies for Precision Pesticide Applications. 2023 IIPA Conference, Athens, GA. (Poster)
15. *Byers, C., **S.S. Virk**, G. Rains and S. Li. 2023. Spray Performance Assessment of a DJI T30 Spray Drone to Optimize Application Efficiency. 2023 IIPA Conference, Athens, GA. (Poster)
16. **Virk, S.S.**, M. Goodnight, C. Bryant and G. Harris. 2022. Evaluating Corn Growth and Yield Response to Non-Uniform Dry Fertilizer Applications. 2022 ASABE Annual International Meeting, Houston, TX.
17. **Virk, S.S.**, M. Tucker, C. Hand, J. Kichler and C. Majeski. 2022. Potential of Variable-Rate Seeding for Site-Specific Plant Growth Management in Cotton. 2022 ASABE Annual International Meeting, Houston, TX. (Oral)
18. *Meena, R., **S.S. Virk**, G. Rains and W. Porter. 2022. Performance Evaluation of a Spray Control System for Site-Specific Applications. 2022 ASABE Annual International Meeting, Houston, TX. (Oral)
19. *Byers, R., **S.S. Virk**, R. Meena and G. Rains. 2022. Optimization of Spray Parameters to Maximize Application Efficiency of a UAV Sprayer. 2022 ASABE Annual International Meeting. Houston, TX. (Oral)
20. **Virk, S.S.**, M. Tucker, J. Hand, G. Harris. A. Smith. 2021. A Case Study Demonstrating the Benefits of Variable-Rate Lime Applications in Peanut Production. 2021 Annual GACAA Meeting, Tifton, GA. (Poster)
21. **Virk, S.S.,** J. Kichler, W. Porter and J. Whitaker. 2020. John Deere Cotton Picker Onboard Module Weighing System for On-Farm Research Implementation. Abstract. 2020 ASABE Annual International Virtual Meeting. (Oral)
22. **Virk, S.S.**, W.M. Porter, J.L. Snider and J. Whitaker. 2020. Influence of Seeding Rate, Planter Downforce, and Cultivar on Crop Emergence and Yield in Singulated and Hill-drop Planted

Cotton. Abstract. 2020 Agricultural Equipment & Technology Conference, Louisville, KY. (Poster)

23. **Virk, S.S.**, W.M. Porter, J.L. Snider and J. Whitaker. 2019. Considerations for Planter Downforce, Seeding Rate and Seed Vigor for Maximizing Emergence and Yield in Cotton. Georgia County Association of Extension Agents Annual Meeting, Dublin, GA. (Poster)
24. Sapp, P., **S.S. Virk**, W.M. Porter, R. Barrentine, S. Hollifield and J. Porter. 2019. Evaluating Planter Downforce in Varying Soil Textures for Maximizing Crop Emergence in Cotton. Georgia County Association of Extension Agents Annual Meeting, Dublin, GA. (Poster)
25. **Virk, S.S.**, W.M. Porter, J.L. Snider and J. Whitaker. 2019. Considerations for Planter Parameters, Seed Vigor and Field Conditions for Improving Crop Emergence and Yield in Cotton. 2019 ASABE Annual International Meeting, Boston, MA. (Oral)
26. **Virk, S.S.**, W.M. Porter, P. Sapp, R. Barrentine, S. Hollifield and J. Porter. 2019. Evaluating Planter Downforce in Varying Soil Textures for Maximizing Crop Emergence in Cotton. UGA Tifton Poster Symposium, Tifton, GA. (Poster)
27. **Virk, S.S.**, W.M. Porter, P. Sapp, R.M. Barrentine, S.M. Hollifield and J.W. Porter. 2018. On-Farm Evaluation of Soil EC versus Planter Downforce for Maximizing Crop Emergence. 2018 ASABE Annual International Meeting, Detroit, MI. (Oral)
28. Porter, W., **S.S. Virk**, J. Snider, and J. Whitaker. 2018. The Effects of Planter Parameters on Cotton Emergence, Growth and Yield: Year 2. 2018 Annual Beltwide Cotton Conference, San Antonio, TX. (Oral)
29. **Virk, S.S.**, J.P. Fulton, and G.L. Pate. 2017. Understanding and Evaluating As-Planted Data Accuracy during VR Seeding Operations. 2017 ASABE Annual International Meeting, Spokane, WA. (Oral)
30. **Virk, S.S.**, W.M. Porter, C.J. Brodbeck and G.L. Pate. 2017. A Two-year Review of UAV Imagery for Agricultural Applications. Abstract. 2017 ASABE Annual International Meeting, Spokane, WA. (Oral)
31. **S.S. Virk** and W.M. Porter. 2017. Effect of Planter Downforce on Crop Emergence and Yield in Cotton and Peanuts. 2017 Annual AETC Meeting, Louisville, KY. (Oral)

F. INVITED PRESENTATIONS

1. Current Status of Pesticide Application Technologies and Opportunities for Advancing Precision Pest Management. Department of Entomology, Seminar Series, Auburn, AL. February 24, 2025.
2. Opportunities and Challenges of Utilizing Spray Drones for Cotton Defoliation. 2025 Cotton and Rice Conference, Memphis, TN. February 28, 2025.
3. Spray Drone Applications in Agriculture. South Carolina Young Farmers and Growers Conference, Hilton Head, SC. February 8, 2025.
4. Drone Sprayer Applications and Updates. Delaware Ag Week. January 15, 2025. (Virtual)
5. Driving Planter Technology Forward: Technology Considerations for Maximizing Planter Performance. 2025 Southern Agronomy Summit, Nashville, TN. January 8, 2025.
6. Drone Spray and Seeding Update – Current Research, Opportunities and Challenges. Iowa State University Extension and Outreach CropsTV. (Virtual). December 16, 2024.
7. Deposition and In-Swath Uniformity of Liquid and Dry Material Applications with Remotely Piloted Aerial Application Systems (RPAAS). 2024 RPAAS Workshop, Hilo, HI. November 6, 2024.

8. Application of Unmanned Aerial Systems (UAS) in Precision Agriculture and Forestry. STROMX Aerospace Meeting. Auburn, AL. October 22, 2024.
9. Advanced Machinery Systems and Precision Technologies for Sustainable Crop Production. SG College of Engineering Faculty Colloquium. Auburn, AL. September 11, 2024.
10. Precision Ag Technology Applications in Row Crops. Visiting Faculty – University of Ghana. Auburn, AL. September 27, 2024.
11. Precision Ag Technology Adoption in the Southeastern United States. G-CIA: Federal University of Lavras (UFLA), Lavras, Brazil. (Virtual) August 21, 2024.
12. Precision Soil Sampling Approaches for Site-Specific Nutrient Management. GROW – Plant Health Exchange. Focus on Cotton Series. (Virtual). August 6, 2024.
13. Spray Drone Applications and Considerations in Agronomic Crops. United States Department of Agriculture – Natural Conservation Planning Partnership, Technical Training Series. (Virtual). April 29, 2024.
14. Current Status of Pesticide Application Technologies and Opportunities for Advancing Precision Pest Management. Georgia Entomological Society Annual Meeting, Jekyll Island, GA. April 4, 2024.
15. Improving Profitability with Precision Agriculture. Georgia Crop Improvement Association Annual Meeting, Athens, GA. March21, 2024.
16. Pesticide Application Technology – Ground and Drone Sprayers. Minas Precision Agriculture Meeting – EMAP. Lavras, Brazil. March 7, 2024.
17. Spray Deposition Uniformity and Efficacy of Pesticide Applications with Spray Drones. 2nd Spray Drone End User Conference, Gulf Shores, AL. February 27, 2024.
18. New Precision Ag Technologies in Peanut Production. National Peanut Buying Points Association, Annual Winter Conference. Savannah, GA. February 18, 2024.
19. Spray Deposition Uniformity and Efficacy of Pesticide Applications with Spray Drones. Agricultural Equipment Technology Conference, Louisville, KY. February 13, 2024.
20. Precision Ag Technology Applications and Considerations in Row Crops. GA AL Consultants Meeting, Eufaula, AL. February 6, 2024.
21. Emerging technologies and Autonomous Applications in Precision Agriculture. Research Station Administrators Meeting, Atlanta, GA. February 5, 2024.
22. Grid and Zone-based Soil Sampling Considerations for Site-Specific Nutrient Management in Row Crops. Southern Agronomy Summit. February 1, 2024.
23. Precision Ag Technologies to Improve Cotton Production and Profitability. Georgia Cotton Commission Annual Meeting & Cotton Production Workshop, Tifton, GA. January 31, 2024.
24. Precision Agriculture Technology and Data Applications to Improve Cotton Production and Profitability in the Southeastern US. Cotton and Rice Conference, Jonesboro, AR. January 30, 2024.
25. Spray Drone Technology – Applications and Considerations in Agronomic Crops. GA Plant Food Educational Society Winter Meeting, Tifton, GA. Jan. 9, 2024.
26. Use of Drones for Improving Crop Management and Profitability. Alabama Row Crops Short Course, Auburn, AL. Dec. 14, 2023.
27. Spray Drone Research at University of Georgia. Remotely Pilot Aerial Application Systems Workshop, UC Davis, CA. Oct. 15, 2023.

28. Advances in Precision Agriculture for Peanut Production. Georgia Peanut Tour, Bainbridge, GA. Sept. 12, 2023.
29. Precision Soil Sampling Considerations for Variable-Rate Fertilization in Georgia Row Crops. Georgia Plant Food Educational Society Summer Meeting, Jekyll Island, GA. July 26, 2023.
30. Building on the Strengths in Precision Agriculture to Advance Peanut Production. Southern Peanut Growers Conference, Destin, FL. July 28, 2023.
31. Role of Drones and Precision Ag in Improving Crop Management and Profitability. Georgia and Alabama Seed Associations Conference, St. Simons, GA. July 25, 2023.
32. Investigating Different Soil Sampling Grid Sizes for Site-Specific Nutrient Management in Georgia. . SERA-6 Conference, Auburn, AL. June 6, 2023
33. Spray Considerations and Technologies for Precision Pesticide Applications. USDA-NRCS, Reinvigorating Conservation Planning in Georgia (Virtual). June 5, 2023.
34. Spray Drone Research and Applications in the Southeastern US. Spray Drone Seminar and Conference, Dayton, OH. May 24, 2023.
35. Considerations for Selecting Optimal Application Parameters for Spray Drones. AU/ACES Spray Drone End User Conference, Auburn, AL. March 19, 2023.
36. Planter Setup and Technology Considerations for Planting in Cover Crops. Cover Crop and Conservation Tillage Workshop and Field Day, Statesboro, GA. March 8, 2023.
37. Planter Technology Considerations to Improve Field Performance and Crop Emergence. Alabama Precision Ag Workshop, Dothan, AL. February 28, 2023.
38. Impact of Soil Sampling Strategy on Application Accuracy and Economics of Site-Specific Applications. Cotton and Rice Conference, Baton Rouge, LA. January 31, 2023.
39. Regulations and Application Considerations for Spraying with UAS. Southeast Fruit and Vegetable Conference. Savannah, GA. January 7, 2023.
40. Technology Considerations to Improve Planter Performance and Crop Emergence. 2022 Indiana CCA Conference. Indianapolis, IN. December 14, 2022.
41. Planter Technologies and Considerations to Improve Field Performance and Productivity. 2022 Mid-Atlantic Crop Management School. Ocean City, MD. November 17, 2022.
42. Application Performance of Unmanned Aerial Spray Systems. Remotely Piloted Aerial Application System Workshop, Kelowna, British Columbia, Canada. October 5, 2022. (Virtual)
43. Maximizing the Value of Yield Maps. Farm Progress 365 – Virtual Sessions. September 27, 2022.
44. Utilizing Precision Ag Technology in Peanuts. Chef & Food Bloggers Tour. Tifton, GA. September 27, 2022.
45. Utilizing Drones for In-Season Crop Management in Pecans. Georgia Pecan Field Day. Tifton, GA. September 8, 2022.
46. Precision ag technology update. Georgia Plant Food Educational Society. Summer Meeting. Amelia Island, GA. July 27, 2022.
47. Precision ag technology and applications in crop production. Tri-State Crop Scout School. Virtual. September 26, 2022.
48. Precision Ag Technology in Peanuts. Georgia Peanut Tour. Tifton, GA. September 14, 2022.
49. Ag Technology Trends Update. Georgia Banker's Association. 2022 Rural Development & Lending Conference. Saint Simons, GA. May 21, 2022.

50. Pesticide Application Technologies. GROW - Plant Health Exchange. Focus on Cotton Series. April 21, 2022. (virtual)
51. Field Performance of Precision Ag Technologies. AgTech Summit. Tifton, GA. March 2, 2022.
52. Variable Rate Technology and Applications. Topcon Precision Ag Clinic. Perry, GA. February 16, 2022.
53. Precision Ag Technologies that can Make a Difference. Machinery Series – From Basics to Planting. Citra, FL. January 24, 2022.
54. Precision Ag for Better ROI. Georgia Plant Food Educational Society. Winter Meeting, UGA Tifton Conference Center, Tifton, GA. January 12, 2022.
55. Applying Ag Technology to Vegetable and Specialty Crops. Southeast Fruit and Vegetable Conference. Savannah, GA. January 8, 2022.
56. How Technology and Big data are Driving Precision Ag Today and Into the Future. October 21, 2021. Sigma-Xi Seminar Series, Tifton, GA.
57. Precision Ag Research and Extension Activities at the University of Georgia. October 25, 2021. Georgia Crop Production Alliance Meeting, Tifton, GA.
58. Data-Driven Technologies for Integrative Precision Agriculture. Sept. 17, 2021. Phenomics and Plant Robotics Center - Fall Symposium, Athens, GA.
59. On-Farm Precision Ag Research to Advance Technology Adoption. July 28, 2021. Georgia Plant Food Educational Society Summer Meeting, Amelia Island, GA.
60. Precision Ag Technology Trends Shaping Agribusiness. May 20, 2021. Georgia Business Development and Lending Conference, St. Simons, GA.

G. CONTRACTS AND GRANTS

Total Extramural Funds: $6,663,285 ($1,487,070 as PI)

Total Industry Contracts and Gifts: $266,000

Funded:

- **$30,000**. (PI) Quantifying Spray Particle Drift from Pesticide Applications with UAVs. 2025. Cotton Incorporated.
- **$20,000**. (PI) Phosphorus Calibration Trials for FRST Database. 2025. OCPNA.
- **$20,000**. Evaluation (Economic Benefits, Challenges, and Optimization) of See & Spray Technology in Cotton. 2025. Cotton Incorporated.
- **$30,000**. (PI) Spray Deposition and Efficacy of Cotton Harvest-Aid Applications with Unmanned Aerial Vehicles. 2025. Cotton Incorporated.
- **$15,000**. (PI) Investigating Precision Ag Practices and Technologies to Improve Soybean Production and Profitability in Alabama. 2025. Alabama Soybean Producers.
- **$25,000**. (PI) Advancing Precision Ag Practices and Technologies in Alabama Cotton Production. 2025. Alabama Cotton Commission.
- **$40,000**. (PI) Exploring Novel Precision Ag Practices and Technologies to Improve Corn Yield and Profitability in Alabama. 2025. Alabama Wheat and Feed Grain Producers.
- **$20,000.** (PI) Quantifying Harvest Losses Under Different Field Conditions and Equipment Settings to Improve Harvest Efficiency. 2024. Alabama Peanut Producers Association.

- **$15,000**. (PI) Investigation of Precision Technologies to Improve Peanut Planting Performance and Emergence. 2025. National Peanut Board – Southern Peanut Research Institute.
- **$20,000**. (PI) Spray Deposition and Efficacy of Cotton Harvest Aid Applications with Unmanned Aerial Vehicles. 2024. Cotton Incorporated.
- **$25,000.** (PI) Precision Pest Management in Peanut Utilizing Latest Ground and Aerial Application Technologies. 2024. National Peanut Board – Southern Peanut Research Institute.
- **$20,000.** (PI) To Evaluate the Effect of Phosphorus Source and Timing on Optimum Phosphorus Rate in No-Till Corn. 2024-2025. OCP North America
- **$75,000.** (PI) To Evaluate Soil P Variability and Investigate the Influence of Different P Sources and Rates on Soil P, Crop Uptake, and Corn Yield. 2024-2025. OCP North America.
- **$20,000.** (PI) Peanut harvest loss estimation and monitoring using AI-assisted Technologies. 2024 - 2025. Georgia Commodity Commission for Peanuts.
- **$30,000.** (PI) Evaluating Spray Performance and Efficacy of Aerial Fungicide Applications with Spray Drones. 2024. Georgia Commodity Commission for Corn.
- **$169,858.** (Co-PI) Using precision agriculture technologies to improve pest diagnosis and pesticide applications to address pest challenges facing key fruit crops in Georgia. 2024 – 2025. UGA Presidential Seed Grant. [$30,000 to Dr. Virk's program]
- **$40,000.** (PI) Variable Rate Application of Crop Inputs to Improve Cotton Production Efficiency and Profitability in Georgia. 2024. Georgia Commodity Commission for Cotton.
- **$3,999,359**. (Co-PI) The Digital and Data-Driven Demonstration Farm (4-D Farm): Juxtaposition of Climate-Smart and Circular Innovations for Future Farm Economies. 2023-2027. USDA-NIFA.
- **$49,892**. (Co-PI) Integrating precision nutrient practices and biofertilizer to advance corn production systems in Brazil and the USA. 2023-2024. USDA Foreign Ag Service.
- **$25,000.** (PI) On-Farm Evaluation of Dry Pre-Plant Fertilizer Application Method to Improve Nutrient Efficiency and Corn Yield. 2023. Georgia Commodity Commission for Corn.
- **$17,000.** (PI) Evaluating Spray Performance and Efficacy of Aerial Fungicide Applications with Spray Drones. 2023. Georgia Commodity Commission for Corn.
- **$28,000.** (PI) Investigating Precision Spray Technologies for Fungicide Applications in Peanut. 2023. Georgia Commodity Commission for Peanut.
- **$15,000.** (PI) Evaluating Efficient and Cost-Effective Precision Soil Sampling Strategies for Nutrient Management in Peanut. 2023. Georgia Commodity Commission for Peanut.
- **$36,575.** (PI) Investigating Zone-based Management Strategies for Variable-Rate Lime and Fertilizer Applications in Cotton. 2023. Georgia Commodity Commission for Cotton.
- **$20,000**. (PI) Spray Deposition and Efficacy of Cotton Harvest Aid Applications with Unmanned Aerial Vehicles. 2023. Cotton Incorporated.
- **$20,400.** (PI) Utilizing Artificial Intelligence to Improve Harvest Efficiency in Peanut and Cotton. 2022-23. Institute for Integrative Precision Agriculture Seed Grant.
- **$299,435.** (PI) Advancing Precision Spraying through Utilization and Testing of Latest Application Technologies on High-Clearance Self-Propelled Agricultural Sprayer. 2022-23. Georgia Research Alliance and IIPA/CAES Equipment Seed Grant.
- **$13,000.** (Co-PI) Development and Evaluation of a Precision Seed Metering System for Uniform Seed Singulation. 2022-23. Institute for Integrative Precision Agriculture Equipment Seed Grant.

- **$38,500.** (Co-PI) Real Time Stress-Risk Mapping for Agricultural Communities: The Precision Agriculture Stress Support (PASS) Initiative. 2022-23. Integrative Precision Ag Seed Grant.
- **$20,000.** (PI) Utilizing Artificial Intelligence to Improve Harvest Efficiency in Peanut and Cotton. Institute for Precision Agriculture. 2022-23. UGA Cooperative Extension.
- **$16,480.** (PI) Identifying Cost-Effective Soil Sampling Strategies for Variable-Rate Liming and Fertilization in Georgia Row Crops. 2022. Georgia Farm Bureau.
- **$50,000.** (PI) Evaluating Precision Spray Technologies to Improve Herbicide Coverage and Efficacy in Peanuts – Year 3. 2023. National Peanut Board – Southern Peanut Research Institute.
- **$150,000.** (Co-PI) Utilizing Precision Technologies to Improve Cotton Fiber Quality during Production, Harvest and Ginning. 2022. USDA-ARS.
- **$12,500.** (PI) Influence of Hooded Boom on Spray Deposition and Drift during Pesticide Applications in Cotton. 2022. Bayer CropScience.
- **$36,575.** (PI) Investigating Zone-based Management Strategies for Variable-Rate Lime and Fertilizer Applications in Cotton. 2022. Georgia Commodity Commission for Cotton.
- **$30,000.** (Co-PI) Precision Peanut Planter Kit to Improve Seed Metering and Placement. 2022-2023. Georgia Commodity Commission for Peanuts.
- **$12,000.** (PI) Implementing Precision Ag Practices for Site-Specific Nutrient Management in Peanuts. 2022-2023. Georgia Commodity Commission for Peanuts.
- **$20,000**. (PI) Investigating Different Application Strategies to Reduce Spray Drift from Pesticide Applications in Cotton. 2022. Cotton Incorporated.
- **$20,000**. (Co-PI) Multi-Pronged Cotton Weed Management. 2022. Cotton Incorporated.
- **$28,000.** (PI) Investigating Spray Parameters and Precision Technologies to Improve Fungicide Applications in Peanuts. 2022-23. Georgia Commodity Commission for Peanuts.
- **$22,000.** (Co-PI) Investigation of Individual Planter Components for Improving Seed Placement, Crop Emergence, and Yield in Corn. 2022. Georgia Cotton Commission.
- **$29,688**. (Co-PI) Fertilizer and Irrigation Scheduling Effects on Corn Productivity. 2022. Georgia Commodity Commission for Corn.
- **$38,575.** (PI) Evaluation of Broadcast versus Banding Dry Fertilizer Application Methods to Improve Corn Yield. 2022. Georgia Commodity Commission for Corn.
- **$60,000**. (Co-PI) Developing Practical Agricultural Engineering Solutions to Planting, Irrigation Management, and Fiber Quality during Harvest of Cotton for Georgia Producers. 2022. Georgia Commodity Commission for Cotton.
- **$50,000.** (Co-PI) Cotton Boll Classification for Robotic Harvesting. 2022. Cotton Incorporated.
- **$50,000.** (PI) Evaluating Precision Spray Technologies to Improve Herbicide Coverage and Efficacy in Peanuts – Year 2. Nation5al Peanut Board – Southern Peanut Research Institute. 2022.
- **$12,500.** (PI) Influence of Hooded Boom on Spray Deposition and Drift during Pesticide Applications in Cotton. Monsanto. 2021.
- **$36,575.** (PI) Investigating Zone-based Management Strategies for Variable-Rate Lime and Fertilizer Applications in Cotton. 2022. Georgia Commodity Commission for Cotton.

- **$16,500.** (Co-PI) Precision Peanut re-planting with a Small Multi-Purpose Autonomous Rover. 2021-22. Georgia Commodity Commission for Peanuts.
- **$20,000.** (PI) Implementing Precision Ag Practices for Site-Specific Nutrient Management in Peanuts. 2021-22. Georgia Commodity Commission for Peanuts.
- **$20,000.** (PI) Investigating Different Application Strategies to Reduce Spray Drift from Pesticide Applications in Cotton. 2021. Cotton Incorporated.
- **$21,000.** (Co-PI) Evaluation of Soil Texture versus Planter Parameters for Uniform Crop Emergence in Peanuts. 2021-22. Georgia Commodity Commission for Peanuts.
- **$11,680.** (Co-PI) The Effect of Speed on Planter Performance for Furrow Depth and Seed Placement. 2021-22. Georgia Commodity Commission for Peanuts.
- **$49,574.** (Co-PI) Utilizing Precision Agriculture Technologies to Improve Financial Resources and Reduce Production Risks. 2021-2022. Southern Risk Management Education Center.
- **$28,000.** (PI) Investigating Spray Parameters and Precision Technologies to Improve Fungicide Applications in Peanuts. 2021-22. Georgia Commodity Commission for Peanuts.
- **$22,000.** (Co-PI) Investigating Individual Planter Components for Improving Seed Placement, Crop Emergence, and Yield in Corn. 2021. Georgia Cotton Commission.
- **$25,584**. (Co-PI) Irrigation and Nutrient Scheduling Effects on Corn Productivity. 2021. Georgia Commodity Commission for Corn.
- **$50,000.** (PI) Evaluating Precision Spray Technologies to Improve Herbicide Coverage and Efficacy in Peanuts. 2021. National Peanut Board – Southern Peanut Research Institute.
- **$150,000**. (Co-PI) Utilizing Precision Technologies to Improve Cotton Fiber Quality during Production, Harvest and Ginning. 2021. United State Department of Agriculture – Agriculture Research Service.
- **$32,000**. (Co-PI) Poultry Litter Injector Redesign. 2021. United State Department of Agriculture – Agriculture Research Service.
- **$60,000**. (Co-PI) Applying Practical Agricultural Engineering Solutions to Planting, Irrigation Management, and Fiber Quality during Harvest of Cotton for Development Recommendations for Georgia Producers. 2021. Georgia Commodity Commission for Cotton.
- **$36,000**. (PI) Evaluation of Broadcast versus Banding Dry Fertilizer Application Methods to Improve Corn Yield. 2021. Georgia Commodity Commission for Corn.
- **$20,000**. (Co-PI) On-Farm Evaluation of Soil Texture versus Planter Downforce for Uniform Crop Emergence. 2020. Georgia Commodity Commission for Peanuts.
- **$27,060**. (Co-PI) Investigation of Individual Planter Components for Improving Seed Placement, Crop Emergence, and Yield in Corn. 2020. Georgia Cotton Commission.
- **$75,000**. (Co-PI) Applying Practical Agricultural Engineering Solutions to Planting, Irrigation Management, and Fiber Quality during Harvest of Cotton for Development Recommendations for Georgia Producers. 2020. Georgia Commodity Commission for Cotton.

<u>Proposals Not Funded</u>:

- **$489,889**. (Co-PI). Climate-Smart Camelina Expansion. 2025 – 2028. Department of Energy.

Industry Contracts and Gifts:

- **$25,000.** 2025**.** Mosaic.
- **$15,000.** 2024. RW Griffin.
- **$10,000**. 2024. Bayer CropScience.
- **$1,500.** 2024. BASF.
- **$10,000.** 2024. Agrasyst Inc.
- **$25,000**. 2024. OCP North America.
- **$10,000**. 2023. RW Griffin.
- **$15,000**. 2023. Helena Ag.
- **$100,000**. 2023. OCP North America.
- **$18,000**. 2023. MagrowTec.
- **$10,000**. 2022. Precision AI.
- **$8,500**. 2022. Mahindra India.
- **$12,500.** 2022. Bayer CropScience.
- **$5,000.** 2022. RW Griffin.
- **$10,000.** 2021. Vantage Southeast.
- **$12,500.** 2021. Monsanto.
- **$8,000.** 2021. Case IH.
- **$5,000.** 2020. Corteva AgriScience.

3. EXTENSION

A. Activities and Products

1. Instructional Activities

In-Service Trainings:

1. GPS Guidance Systems for Hay Fields and Pastures. Auburn, AL. ACES Agronomic Crops Extension Agent Training. May 1, 2025.
2. Precision Soil Sampling and Variable-Rate Fertilizer Application Considerations. ACES Animal and Forage Extension Agent Training. Auburn, AL. February 7, 2025.
3. Ag Industry Update. Alabama Extension Agronomic Crops Meeting. Auburn, AL. Dec. 13, 2024. (Co-organizer).
4. Precision Ag Tools for Crop Management. Alabama Crop Management Association – Certified Crop Advisor Training. Auburn, AL. December 11, 2024.
5. Precision Ag Technologies for In-Season Crop Management. Agronomic Agent Training, Tifton, GA. June 6, 2024.
6. Spray Deposition Uniformity and Efficacy of Pesticide Applications with Spray Drones. In-Service Drone Training, Ohio State University Extension (Virtual). March 28, 2024.
7. Spray Drone Research Update and Demonstration. SE District Extension Agent Training. Midville, GA. March 14, 2024.
8. Precision Ag Technologies in Row Crop Production. ANR Foundations Training, Tifton, GA. March 13, 2024.
9. Spray Drone Research Update and Demonstration. SW District Extension Agent Training. Tifton, GA. March 12, 2024.

10. Precision Ag Update. Cotton Production Agent Training. SE District. Reidsville, GA. January 10, 2024.
11. Precision Ag Update. Cotton Production Agent Training. SW District. Tifton, GA. January 9, 2024.
12. Precision Ag Update. Peanut Production Agent Training. SE District. Lyons, GA. December 12, 2023.
13. Harvest Equipment Setup and Operational Considerations. Precision Ag & Machinery Systems Agent Training. SE District Extension Agent Training. Tifton, GA. August 31, 2023.
14. Harvest Equipment Setup and Operational Considerations. Precision Ag & Machinery Systems Agent Training. SW District Extension Agent Training. Midville, GA. August 29, 2023
15. Precision Planting and Spray Considerations. Agronomic Agent Training, Tifton, GA. June 8, 2023.
16. Precision Ag Technologies in Agriculture. ANR Foundations Training, Tifton, GA. March 7, 2023.
17. Planter, Fertilizer Spreader and Sprayer Setup. Precision Ag & Machinery Systems Agent Training. SE District Extension Agent Training. Midville, GA. March 16, 2023.
18. Planter, Fertilizer Spreader and Sprayer Setup. Precision Ag & Machinery Systems Agent Training. SW District Extension Agent Training. Adel, GA. March 14, 2023.
19. Precision Ag Update. Cotton Production Agent Training. SW District. Tifton, GA. January 19, 2023.
20. Precision Ag Update. Peanut Production Agent Training. SE District. Lyons, GA. January 18, 2023.
21. Precision Ag Research Update. Peanut Production Agent Training. Tifton, GA. December 13, 2022.
22. Peanut and Cotton Harvest Equipment Setup and Operational Considerations. Precision Ag & Machinery Systems. SE District Extension Agent Training. Tifton, GA. September 1, 2022.
23. Peanut and Cotton Harvest Equipment Setup and Operational Considerations. Precision Ag & Machinery Systems SW District Extension Agent Training. Midville, GA. August 31, 2022.
24. Drones – Regulations and Flying Considerations. UGA Emergency Preparedness Team Training. Tifton, GA. August 18, 2022.
25. Precision Ag Research Update. UGA Extension ANR Agent Field Day. Tifton, GA. June 9, 2022.
26. Using Spot-On Meter for Sprayer Calibration. UGA Extension SE District ANR Update. McRae, GA. May 19, 2022.
27. Planter and Spray Technologies. ANR Foundations Training. Tifton, GA. March 16, 2022.
28. Planter and Fertilizer Spreader Setup and Considerations. Precision Ag and Machinery Systems Agent Training. Tifton, GA. March 15, 2022.
29. Soil Fertility and Variable-Rate Fertilizer Application. UGA Extension SW District Agent Training. March 3, 2022.
30. Drone Applications in Agriculture. UGA Extension SW District ANR Update. Tifton, GA. February 8, 2022.
31. Precision Ag Technologies in Cotton Production. UGA Extension Agent Cotton Production Training – SW District. January 18, 2022.
32. Precision Ag Technologies in Cotton Production. UGA Extension Agent Cotton Production Training – SE District. January 19, 2022.
33. Basic Precision Ag Technologies for Small-Scale Farms. Northeast District Extension ANR Update. September 16, 2021.

34. Harvest Equipment Preparation for Quality Yield Data. Southwest District ANR Update. August 2, 2021.
35. Precision Ag Technology and In-season Considerations. Agronomic Field Crops Agent Training. June 10, 2021.
36. Spray Application Equipment and Technology. UGA Extension Agent Training. May 5 & June 16, 2021.
37. Precision Agriculture Technology and Applications. Agriculture and Natural Resources Foundations Training for Extension Agents. March 30, 2020.
38. Basics of Soil Sampling and Mapping for Precision Agriculture. UGA Extension Agent Training (Virtual). February 2, 2021.
39. Precision Ag Technologies in Cotton Production. UGA Extension Agent Cotton Production Training. January 13, 2021.
40. Planting and Spray Technologies in Peanut Production. UGA Extension Agent Training. Tifton, GA. December 9, 2020.
41. Basic Principles of Precision Soil Sampling. UGA Extension Agent Training. November 17, 2020.
42. Precision Planter Technologies: Setup and Field Demonstration: Southwest District Agent Training. Planter Technology and Research Update. Midville, GA. March 5, 2020.
43. Precision Planter Technologies: Setup and Field Demonstration: Southeast District Agent Training. Planter Technology and Research Update. Tifton, GA. March 3, 2020.
44. Cotton Precision Planter Considerations. UGA Cotton Production Workshop – 2020. UGA Tifton Conference Center, Tifton, GA. January 29, 2020
45. Advanced Sprayer Technologies: North Georgia Agent Training. Sprayer Calibration and Technology Demonstration. UGA Iron Horse Farm, Watkinsville, GA. November 19, 2019.
46. Advanced Sprayer Technologies: South Georgia Agent Training. Sprayer Calibration and Technology Demonstration. Atlantic & Southern Equipment, Tifton, GA. November 21, 2019.
47. Precision Agriculture and Planting Technology Overview. ANR Foundations Training, UGA RDC Farm, Tifton, GA. March 26, 2019.
48. Set-Up and Calibration of Spinner-Disc Spreaders: North Georgia Agent Training. (Administrator). J. Phil. Campbell R&E Center, Watkinsville, GA. March 14, 2019.
49. Set-Up and Calibration of Spinner-Disc Spreaders: South Georgia Agent Training. (Administrator). UGA Tifton NESPAL Building, Tifton, GA. March 12, 2019.
50. ANR Peanut Agent Training. Planter Parameters to Maximize Crop Emergence in Peanuts. UGA Tifton Conference Center, Tifton, GA. December 12, 2018.
51. Unmanned Aerial Vehicles in Agriculture: North Georgia Agent Training. FAA Part 107 Rules and Regulations & UAS Applications in Row-Crops. Tifton, GA. March 13, 2018
52. Unmanned Aerial Vehicles in Agriculture: South Georgia Agent Training. FAA Part 107 Rules and Regulations & UAS Applications in Row-Crops. Watkinsville, GA. March 15, 2018
53. Precision Agriculture and Irrigation Training: Southwest District Agent Training. UAV Applications in Agriculture, Statesboro, GA. December 1, 2016
54. Precision Agriculture and Irrigation: Southeast District Agent Training. UAV Applications in Agriculture, Statesboro, GA. November 29, 2016

Extension and Outreach presentations:

1.

2. Precision Ag Considerations for Cotton Production. North Alabama Cotton Growers Meeting. Centre, AL. December 17, 2024.
3. Precision Soil Sampling and Variable-Rate Fertilization Considerations. South Alabama Nutrient Management Meeting, Hartford, AL. December 16, 2024.
4. Precision Ag and Machinery Systems Research and Extension Work Update. ALFA Annual Meeting, Montogomery, AL. December 8, 2024.
5. Precision Soil Sampling and Variable-Rate Fertilization Considerations. Central Alabama Nutrient Management Meeting, Shorter, AL. December 4, 2024.
6. Precision/Digital Ag Activities within the BSEN Department. Senator Britt's Staff Visit, Auburn, AL. October 22, 2024.
7. Precision/Digital Ag Activities within the BSEN Department. Sunbelt Ag Expo, Moultrie, GA. October 16, 2024.
8. Precision Ag Technologies in Row Crop Production. Tallassee High School Field Visit, Shorter, AL. October 3, 2024.
9. Precision Ag and Machinery Systems Activities in the BSEN Department. Ag Round-Up, Auburn, AL. September 14, 2024.
10. Precision Ag and Machinery Systems Planned Research and Extension Work. Alabama Peanut Producers Association Board Meeting, Dothan, AL. September 6, 2024.
11. Precision Ag Considerations for Sustainable Crop Production. Crop to Consumer Sustainability-Focused Field Day, Headland, AL. August 27, 2024.
12. Peanut Harvest Equipment Setup and Considerations. Wiregrass Research and Education Center Field Day, Headland, AL. August 16, 2024.
13. Precision Ag Considerations for Row Crops. Society Hill Field Day, Society Hill, AL. August 12, 2024.
14. Spray Drone Considerations and Planned Research Work. Gulf Coast Research and Extension Center, Field Day. August 2, 2024.
15. Drone Seeding Applications and Considerations. Central AL Field Crops Tour, Shorter, AL. August 1, 2024.
16. Precision Soil Sampling and Planting Technologies. North Alabama Extension Update, Centre, AL. July 16, 2024.
17. Precision Ag Planned Research and Extension Work Update. Weed Tour, Headland, AL. July 15, 2024.
18. Precision Ag Technology and Spray Drone Demonstration. 2024 Seminole County Farm Tour, Donalsonville, GA. June 20, 2024.
19. Advanced Machinery Systems and Precision Technology Considerations for UGA Research Farms. Precision Ag Symposium, Watkinsville, GA. June 12, 2024.
20. Autonomous Tractor and Spray Drone Demonstration. UGA Institute of Integrative Precision Ag Retreat – Technology Workshop. Tifton, GA. May 23, 2024.
21. Precision Ag Technology Applications in Agriculture. UGA Public Service and Outreach Tour, Tifton, GA. May 7, 2024.
22. Planter Setup and Technologies for Maximizing Emergence. Sumter County Production Meeting, Plains, GA. March 28, 2024.
23. Precision Ag Update. Lowndes County Production Meeting, Valdosta, GA. March 19, 2024.
24. Planting Technologies and Spray Drone Considerations. Lee County Production Meeting, Leesburg, GA. February 24, 2024.
25. Precision Ag Update. Turner County Production Meeting, Ashburn, GA. February 22, 2024.
26. Precision Ag Update. Effingham and Screven County Production Meeting, Screven, GA. February 20, 2024.

27. Precision Ag Update. Toombs County Production Meeting, Lyons, GA. February 16, 2024.
28. Precision Soil Sampling, Planter Considerations and Spray Drone Applications. Emanuel County Production Meeting, Swainsboro, GA. February 7, 2024.
29. Precision Soil Sampling, Planter Technologies and Spray Drone Considerations. Colquitt County Production Meeting, Moultrie, GA. January 24, 2024.
30. Autonomous Applications in Agriculture. Georgia Sod Producers Field Day, Griffin, GA. Nov. 7, 2023.
31. Spray Drone Applications and Demonstration. Jefferson County Cattlemen's Meeting, Louisville, GA. October 24, 2023.
32. Spray Calibration and Nozzle Selection. Ag Tech 4-H Training, Perry, GA. October 3, 2023.
33. Precision Ag Research Update in Cotton and Peanuts. GA Cotton and Peanut Research Field Day, Tifton, GA. Sept. 6, 2023.
34. Precision Ag Research Update and Spray Drone Demonstration, Midville, GA. August 10, 2023.
35. Spray Drone Presentation and Demonstration. Webster County Drone Field Day, July 21, 2023.
36. Spray Drone Research and Demonstration. Sunbelt Ag Expo Field Day, Moultrie, GA. July 20, 2023.
37. Precision Dry Fertilizer Placement Research Update. Early County Row Crop Field Day, Blakeley, GA. July 14, 2023.
38. Precision Ag Research in Corn Production. GA Corn and Soybean Research Update, Tifton, GA. June 30, 2023.
39. Precision Ag Technology and Demonstration. Anne Belle Clark Summer Camp, Tifton, GA. June 29, 2023.
40. Spray Drone Application and Demonstration. Corn Silage and Forage Field Day, Tifton, GA. June 15, 2023.
41. Precision Ag Research Update. Agronomic Crops Field Day, Tifton, GA. June 8, 2023.
42. Spray Drone Research and Lessons Learned. UGA Extension ANR Conference, Griffin, GA. March 23, 2023.
43. Precision Ag Options for Hay and Livestock Producers. Morgan County Cattlemen's Meeting, Madison, GA. March 6, 2023.
44. Precision Ag Update. Irwin County Grower Meeting. Ocilla, GA. February 28, 2023.
45. Precision Ag Considerations for Row Crops. Grady County Grower Meeting. Cairo, GA. February 27, 2023.
46. Precision Ag Considerations for Row crops. Macon County Grower Meeting. Oglethorpe, GA. February 20, 2023.
47. Precision Soil Sampling and Planter Technologies. Lee County Grower Meeting. Leesburg, GA. February 15, 2023.
48. Precision Ag Technologies in Row Crop Production. Appling County Grower Meeting. Baxley, GA. February 3, 2023.
49. Soil sampling, Variable-Rate Seeding and Spray Considerations. Colquitt County Grower Meeting. Moultrie, GA. January 27, 2023.
50. Site-Specific Nutrient Management Research Update. SWREC Field Day. Plains, GA. August 24, 2022.
51. Technology and Data Utilization in Precision Ag. Softserve Leadership Team. Tifton, GA. August 19, 2022.
52. Precision Fertilization and Spray Technology Research. SEREC Field Day. Midville, GA. August 10, 2022.

53. Precision Ag Research Update. Sunbelt Ag Expo Field Day. Moultrie, GA. August 2, 2022.
54. Precision Ag Cotton Research Update. Georgia Cotton Commission Research Review Day. Tifton, GA. July 29, 2022.
55. Precision Ag Corn Research Update. Georgia Corn Commission Research Field Day. Tifton, GA. June 23, 2022.
56. Drones in Agriculture. Wilcox County Young Farmers Meeting. Abbeville, GA. May 5, 2022.
57. Planter Setup and Considerations for Planting in Cover Crops. Terrell County Cover Crop Field Day. Dawson, GA, May 4, 2022.
58. Precision Ag in Hay and Forage production. Better Beef Systems Extravaganza. Tifton, GA. April 5, 2022.
59. Precision Planting Technologies and Considerations. Utilizing Precision Ag Technology Workshop. Albany, GA. March 31, 2022.
60. UGA Tifton CAES Showcase. Research, Teaching, and Extension Activities in the Crop and Soil Sciences Department. September 21, 2021.
61. UGA Cotton and Peanut Research Field Day. Precision Ag Research Update. Tifton, GA. September 8, 2021.
62. Southwest Research and Education Center Annual Field Day. Spray Technology and Fertilizer Application Research Update. Plains, GA. August 31, 2021.
63. Southeast Research and Education Center Annual Field Day. Spray Technology and Fertilizer Equipment Research Update. Midville, GA. August 11, 2021.
64. Sunbelt Ag Expo Virtual Field Day. Precision Spray Technologies for Pesticide Applications. August 12, 2021.
65. Spray Considerations for Row-Crops. Jefferson County Mid-Season Row Crop Field Day, Davisboro, GA. August 4, 2021.
66. Precision Ag Technology – Application and Benefits. *UGA Extension NE District Update*. September 29, 2020.
67. UGA Cotton and Peanut Research Field Day, Tifton, GA. Planter Speed and Downforce Effect on Crop Emergence. September 9, 2020.
68. Southeast Research and Education Center Annual Field Day, Midville, GA. Planting Speed and Downforce Effect on Seed Placement in Cotton and Peanuts. August 12, 2020.
69. Georgia Cotton Commission Research Advisory Field Day, Tifton, GA. Planter Downforce & Irrigation Research in Cotton Production. July 26, 2019.
70. Mid-Season Row Crop Update Field Day, Jefferson County, GA. Grain Yield Monitor Calibration Considerations. July 29, 2019.
71. Stripling Research Irrigation Park Field Day, Camilla, GA. Cotton Planter Research Update. July 18, 2019.
72. Considerations for Planting Cotton during Drought Conditions. UGA Extension Row Crops Agent Training Field Day, Tifton, GA. June 17, 2019.
73. Cotton and Peanuts Planter Research Update. UGA Cotton and Peanut Research Field Day, Tifton, GA. September 5, 2018.
74. Southeast Research and Education Center, Annual Field Day, Midville, GA. Mid-Season Cotton Research Update. August 15, 2018.
75. Precision Planter Considerations for Row-Crops. Jefferson County Mid-Season Row Crop Field Day, Davisboro, GA. July 5, 2018.
76. Precision Planter Downforce Research in Cotton Production. Georgia Cotton Commission Research Field Day, Tifton, GA. June 8, 2018.
77. Mid-Season Row Crop Research Update. UGA Extension Row Crops Agent Training Field Day, Tifton, GA. June 7, 2018.

78. UAV Applications in Agriculture. Ag Awareness Day, UGA Tifton Campus, Tifton, GA. May 18, 2018.
79. UAV Applications in Agriculture. Ag Awareness Day, UGA Tifton Campus, GA. October 22, 2017.
80. Cotton Planter Research and Machinery Systems Update. UGA Cotton and Peanut Research Field Day, Tifton, GA. September 6, 2017.
81. UAV and Precision Agriculture Display. Georgia Farm Bureau Commodity Conference, UGA Tifton Conference Center, Tifton, GA. August 18, 2017.
82. Cotton and Peanuts Planter Research Update. Southeast Research and Education Center - Annual Field Day, Midville, GA. August 9, 2017.
83. Corn Planter Research Update and UAV Demonstration. Stripling Irrigation Research Park Field Day, Camilla, GA. July 27, 2017.
84. Planter Technology in Cotton Production. Georgia Cotton Commission Research Field Day, Tifton, GA. June 23, 2017.
85. Mid-Season Row Crop Planter Research Update. UGA Extension Row Crops Agent Training Field Day, Tifton, GA. June 22, 2017.
86. UGA Planter Research Update. Planter Clinic, John Deere/SunSouth LLC, Colquitt, GA. February 2017.

2. Technical Assistance

1. Precision Ag Machinery and Technology Needs in North Alabama. October 1, 2024. (In-person)
2. Peanut and Cotton Harvest Equipment Setup and Considerations. Autaugaville, AL. September 20, 2024. (In-person)
3. Peanut Pod Blasting Clinic. Selma, AL. September 10, 2024. (In-person)
4. GPS/GNSS Row Guidance for Strip-Till Off-Set. UGA Extension Agent. August 29, 2024. (Phone Call)

3. Outreach Publications

Peer-Reviewed Extension Publications:

1. Virk, S.S. 2025. Electric Drives for Seed Metering on Row Crop Planters. ANR-XXX. Alabama Cooperative Extension System, Auburn, AL. (In Review)
2. Whitford, F., **S.S. Virk**, S. Li., A. Helms, B. Young,……., K. Smith. 2025. The Evolution of Spray Drones: Their Capabilities and Challenges for Pesticide Applications. PPP-154. Purdue Extension, West Lafayette, IN.
3. **Virk, S.S.** 2024. Mobile Apps for Spray Nozzle Selection. ANR-3122. Alabama Cooperative Extension System, Auburn, AL.
4. **Virk, S.S.** and K. Balkcom. 2024. Estimating Peanut Harvest Losses. ANR-3113. Alabama Cooperative Extension System, Auburn, AL.
5. **Virk, S.S.** and R. Meena. 2024. Nozzle Selection for Sprayers Equipped with Pulse Width Modulation Technology. Circular 1305. University of Georgia Cooperative Extension, Athens, GA.

6. **Virk, S.S.**, M. Tucker, G. Harris and J. Lessl. 2024. Soil Sampling Grid Size Considerations for Site-Specific Nutrient Management. Circular 1537. University of Georgia Cooperative Extension, Athens, GA.
7. **Virk, S.S.** and R. Meena. 2022. Pulse Width Modulation Technology for Agricultural Sprayers. Circular 1277. University of Georgia Cooperative Extension, Athens, GA.
8. Hand, L.C., S. Culpepper, G. Harris, ……., **S.S. Virk**, S. Bag and H. Sintim. 2023 Georgia Cotton Production Guide. AP 124-2. University of Georgia Cooperative Extension, Athens, GA. Planting, Plant Populations and Seeding Rates, pages 74-76.
9. Monfort, W.S., S. Tubbs, **S.S. Virk**, G. Harris and W.M. Porter. 2023. UGA Peanut Production – The Agronomic Quick Reference Guide. AP-118. University of Georgia Cooperative Extension, Athens, GA.
10. **Virk, S.S.** and P.E. Sumner. 2022. Procedure for Calibrating Granular Pesticide Applicators. Circular 818. University of Georgia Cooperative Extension, Athens, GA.
11. **Virk, S.S.** and E.P. Prostko. 2022. Using SpotOn® Digital Meter for Boom Sprayer Calibration. Circular 1252. University of Georgia Cooperative Extension, Athens, GA.
12. Hawkins, G.L., G.C. Rains and **S.S. Virk**. 2022. Georgia Pest Management Handbook – 2022 Commercial Edition (vol. 1). UGA Extension Special Bulletin 28. University of Georgia Cooperative Extension, Athens, GA. (5 sections on calibration methods for different commercial sprayers)
13. Hawkins, G.L., G.C. Rains and **S.S. Virk**. 2022. Georgia Pest Management Handbook – 2022 Homeowner Edition (vol. 1). UGA Extension Special Bulletin 28. University of Georgia Cooperative Extension, Athens, GA. (3 sections on calibration methods for small homeowner sprayers)
14. Porter, W.M., **S.S. Virk**, J. Tucker and L. Baxter. 2022. GPS Guidance Options for Forage Systems. Bulletin 1546. University of Georgia Cooperative Extension, Athens, GA.
15. Hand, L.C., S. Culpepper, G. Harris, ……., **S.S. Virk**, S. Bag and H. Sintim. 2022 Georgia Cotton Production Guide. AP 124-2. University of Georgia Cooperative Extension, Athens, GA. Planting, Plant Populations and Seeding Rates, pages 74-76.
16. Monfort, W.S., S. Tubbs, **S.S. Virk**, G. Harris and W.M. Porter. 2022. UGA Peanut Production – The Agronomic Quick Reference Guide. AP-118. University of Georgia Coop. Extension, Athens, GA.
17. **Virk, S.S.** and P.E. Sumner. 2021. Calibration of Dry Broadcast Fertilizer Applicators. Circular 798. Available at extension.uga.edu. University of Georgia Cooperative Extension, Athens, GA.
18. **Virk, S.S.** and W.M. Porter. 2020. Row Crop Planter Checklist: Tips to Achieve Successful Stand Establishment. Circular 1231. Available at extension.uga.edu. University of Georgia Cooperative Extension, Athens, GA.
19. Runge, M., J.P. Fulton, T. Griffin, **S.S. Virk**, and A. Brooke. 2014. Automatic Section Control Technology for Row Crop Planters. ANR 2217. Alabama Cooperative Extension, Auburn, AL.
20. Fulton, J.P., A.B. Brooke and **S.S. Virk**. 2013. Success of Data Management at the Farm Level. ANR 2057. Precision Agriculture Series. Alabama Cooperative Extension, Auburn, AL.
21. **Virk, S.S.** and J.P. Fulton. 2013. Procedure to Acquire GPS in a 20/20 SeedSense Monitor from a Trimble FMX Display. Alabama Precision Ag Extension, Auburn University, AL.
22. Litton, J., J.P. Fulton, M. Runge, G.L. Pate and **S.S. Virk**. 2013. Precision Ag Adoption in Central Alabama. ANR 1536. Precision Agriculture Series. Alabama Cooperative Extension, Auburn, AL.

23. Mullenix, D., A. Sharda, **S.S. Virk** and J.B. Hall. 2011. Elevation Data Collection with RTK Survey Equipment. ANR 1348. Alabama Cooperative Extension, Auburn, AL.

4. ELECTRONIC PRODUCTS

Popular Press Articles:

1. **Virk, S.S**. It's the Little Planting Details that Matter More this Year. Alabama Cooperative Extension Website: Topics - Crop Production. April 8, 2025.
2. Haire, B. Don't let the Planter Take Money Out of Your Pocket. Southeast FarmPress. April 1, 2025. (**S.S. Virk**: Content Contribution and Editing)
3. **Virk, S.S**. Cotton Seeding Configuration and Rate Considerations. Alabama Cooperative Extension Website: Topics - Crop Production. March 17, 2025.
4. **Virk, S.S.** Mobile Apps for Spray Nozzle Selection. Alabama Cooperative Extension Website: Topics - Crop Production. December 18, 2024.
5. **Virk, S.S.** and K. Balkcom. Estimating Peanut Harvest Losses. Alabama Cooperative Extension Website: Topics - Crop Production. December 6, 2024.
6. Crosby, J. and K. Rippey. Harvest Equipment Tips for Preseason Guide for Equipment Setup. Southeastern Peanut Farmer. July/August 2024. (**S.S. Virk**: Content Contribution and Editing)
7. Vogt, W. Richer Data Enhances On-Farm Research. Farm Progress. June 2024. ((**S.S. Virk**: Content Contribution and Editing)
8. **S.S. Virk** and W. Porter. Be Prepared for Planting Cotton by Ensuring Your Planter is Ready. Georgia Cotton Commission - Cotton News. March 22, 2024.
9. **S.S. Virk.** The Precision Ag Payoff. Peanut Grower. November 1, 2023.
10. **S.S. Virk.** Sunbelt Ag Expo Flying at the Speed of Ag Technology. Southeast Farm Press, October 16, 2023.
11. **S.S. Virk** and S. Li. What to do Before Making a Spray Drone Pesticide Application. Southeast FarmPress, July 27, 2023.
12. **S.S. Virk.** Avoid these Common Application Mistakes with Broadcast Spreaders. Southeast FarmPress. May 4, 2023.
13. **S.S. Virk**. How to Do a Planter Block Test to Ensure Seed Depth. Southeast FarmPress. March 21, 2023.
14. **S.S. Virk.** Spraying Tips for 2023. Southeast Peanut Grower. March 16, 2023.
15. **S.S. Virk.** Precision Soil Sampling Grid Size vs the Cost. Southeast FarmPress. Nov. 23, 2022.
16. Tucker, J. and **S.S. Virk.** Precision Ag Moves to Southern Alfalfa Fields. Hay & Forage Grower. November, 2022.
17. **Virk, S.S.** Precision Soil Sampling Grid Size versus the Cost. Southeast Farm Press. November, 2022.
18. **Virk, S.S.** and E.P. Prostko. Are you doing these 8 things to keep boom sprayer on target? Southeast Farm Press. July 06, 2022.
19. **Virk, S.S.** Precision Ag Research at the Expo Farm. Sunbelt Ag Expo Blog Series. June 2022.
20. Snider, J.L., **S.S. Virk,** L.C. Hand, W.M. Porter and G.K. Virk. Considerations for Stand Establishment and Early Seedling Vigor in Cotton. Crop and Soils Magazine. February 2022.
21. **Virk, S.S.** Calibrate Spreader for Precision Fertilizer Applications. Southeast Farm Press. February 2022.
22. **Virk, S.S.** 7 Tips to Start Variable-rate Fertilizer Applications on your Farm. Southeast Farm Press. February 2022.

23. **Virk, S.S.,** G. Harris and A. Gamble. Nutrient Management – Precision soil sampling has value. Southeastern Peanut Farmer. January 2022.
24. **Virk, S.S.** and W.M. Porter. The 12-point Checklist to Ensure Your Planter is Ready. Southeast Farm Press. March, 2022.
25. **Virk, S.S.** 13 Points to Ensure Usable Cotton Yield Data. Southeast Farm Press. October 21, 2021.
26. **Baxter, L.L.**, W. Porter, J. Tucker, and S. Virk. 2021. Are GPS Guidance Options Worth It? Progressive Dairy: Canada. Progressive Publishing. September 2021.
27. **Virk, S.S.** Sprayer Technology Advances and So Do Questions. Southeast Farm Press. July, 2021.
28. **Virk, S.S.** Common Stand Issues Caused by Planter Problems. Southeast Farm Press. May, 2021.
29. **Virk, S.S**. Frustrated with planter technology? These tips can help. Southeast Farm Press. April 9, 2021.
30. **Virk, S.S**. The 2 settings on your spinner-disc spreader that need attention. Southeast Farm Press. March 16, 2021.
31. **Virk, S.S**, W.M. Porter, and E.P. Prostko. This is the year to get the most out of your boom sprayer: Tips. Southeast Farm Press. June, 2020.
32. **Virk, S.S**. Planter Setup Important for Successful Planting Season. Morning Ag Clips. April, 2020.
33. **Virk, S.S**. Planter Adjustment key to Maximizing Plant Stands. Southeast AgNet. March, 2020.
34. **Virk, S.S**. Big data will change the way you farm. Southeast Farm Press. 2015.
35. Fulton, J.P. and **S.S. Virk**. Seven big data lessons for farming. Farm Journal. 2014.
36. Fulton, J.P. and **S.S. Virk**. Traits, Tools and Technology for Precision Agriculture. Progressive Farmer. 2014.

Internet Publications

1. **Virk, S.S.** In-Field Planter Checks and Adjustments for Optimal Performance. AL Crops Report Newsletter. May 15, 2025.
2. **Virk, S.S.** Equipment Preparation and Other Considerations to be Field Ready. AL Crops Report Newsletter. March 17, 2025.
3. **Virk, S.S.** Equipment Preparation and Other Considerations. AL Cotton Shorts Newsletter. February 18, 2024.
4. **Virk, S.S.** Soil Sampling Considerations for Nutrient Management. AL Cotton Shorts Newsletter. February 18, 2025.
5. **Virk, S.S.** Cotton Round Module Handling and Storage Considerations. AL Cotton Shorts Newsletter. November 19, 2024.
6. **Virk, S.S.** Harvest Considerations – Cotton Picker Maintenance and Safety. AL Cotton Shorts Newsletter. October 15, 2024.
7. **Virk, S.S.** Minimize Peanut Digging Losses by Proper Equipment Setup and Operation. AL Crops Report Newsletter. September 25, 2024.
8. **Virk, S.S.** Spray Considerations for Cotton Defoliation. AL Cotton Shorts Newsletter. September 12, 2024.
9. **Virk, S.S.** Sprayer Considerations for PGR Applications. AL Cotton Shorts Newsletter. August 13, 2024.
10. **Virk, S.S.** and W.M. Porter. In-Field Planter Considerations. Peanut Pointers Newsletter. UGA Peanut Team. May 5, 2023.
11. **Virk, S.S.** and W.M. Porter. Planter Preparation. Peanut Pointers Newsletter. UGA Peanut Team. April 12, 2023.
12. **Virk, S.S.** and W.M. Porter. Planter Preparation. UGA Cotton Team Newsletter. April 2, 2024.
13. **Virk, S.S.** Planting Calculations. UGA Precision Ag Blog. April 24, 2024.

14. **Virk, S.S.** Variable-Rate Fertilizer Application Considerations. UGA Precision Ag Blog. February 19, 2024.
15. **Virk, S.S.** and S. Tubbs. Estimating Peanut Harvest Losses. UGA Precision Ag Blog. October 2, 2023.
16. **Virk, S.S.,** and S. Monfort. Peanut Digger-Shaker-Inverter Setup and Operational Considerations. Peanut Pointers Newsletter. UGA Peanut Team. September 7, 2023.
17. **Virk, S.S.** VR PGR Application Considerations. UGA Cotton Team Newsletter. August 7, 2023.
18. **Virk, S.S.** and S. Li. Pesticide Application Considerations with Spray Drones. UGA Precision Ag Blog. July 21, 2023.
19. **Virk**, **S.S.** Spray Considerations for Effective Fungicide Applications. Peanut Pointers Newsletter. UGA Peanut Team. July 4, 2023.
20. **Virk, S.S.** Pesticide Application Considerations with Spray Drones. UGA Cotton Team Newsletter. July 9, 2023.
21. **Virk, S.S. and** E.P. Prostko. Spray Considerations. UGA Cotton Team Newsletter. June 4, 2023.
22. **Virk, S.S. and** E.P. Prostko. Spray Considerations. Peanut Pointers Newsletter. UGA Peanut Team. June 6, 2023.
23. **Virk, S.S.** Calibrating Liquid Fertilizer Applicators Using Water. UGA Precision Ag Blog. June 16, 2023.
24. **Virk, S.S.** and W.M. Porter. In-Field Planter Considerations. Peanut Pointers Newsletter. UGA Peanut Team. May 5, 2023.
25. **Virk, S.S.** and W.M. Porter. In-Field Planter Considerations. UGA Cotton Team Newsletter. May 1, 2023.
26. **Virk, S.S.** Avoid These Common Mistakes During Fertilizer Applications with Broadcast Spreaders. UGA Precision Ag Blog. April 24, 2023.
27. **Virk, S.S.** and W.M. Porter. Planter Preparation. Peanut Pointers Newsletter. UGA Peanut Team. April 12, 2023.
28. **Virk, S.S.** and W.M. Porter. Planter Preparation. UGA Cotton Team Newsletter. April 10, 2023.
29. **Virk, S.S.** Planter Preparation – Using Block Test to Check Depth Settings. UGA Precision Ag Blog. March 13, 2023.
30. **Virk, S.S.** Variable-Rate Liming Pays for Itself. UGA Precision Ag Blog. February 6, 2023.
31. **Virk, S.S.,** M. Tucker and G. Harris. Precision Soil Sampling: Grid size efficacy vs cost considerations. UGA Precision Ag Blog. November 18, 2022.
32. **Virk, S.S.,** and W. Porter. Technology Checklist for Cotton Harvest Preparation. UGA Precision Ag Blog. September 22, 2022.
33. **Virk, S.S.,** and S. Monfort. Peanut Digger-Shaker-Inverter Setup and Operational Considerations. Peanut Pointers Newsletter. UGA Peanut Team. September 9, 2022.
34. **Virk, S.S.,** and S. Li. Spray Drones – Regulations and Operational Considerations. UGA Precision Ag Blog. August 23, 2022.
35. **Virk**, **S.S.,** and R.C. Kemerait. Spray volume and droplet size considerations. Peanut Pointers. UGA Peanut Team. August 8, 2022.
36. **Virk, S.S.** VR PGR application considerations. UGA Cotton Team Newsletter. August 8, 2022.
37. **Virk, S.S.** Mobile apps for spray nozzle selection. UGA Precision Ag Blog. July 25, 2022.
38. **Virk, S.S.** Calibration considerations for liquid fertilizer applications. UGA Cotton Team Newsletter. July 5, 2022.
39. **Virk, S.S.,** and E. Prostko. Spray consideration for effective pesticide applications. UGA Precision Ag Blog. June 23, 2022.
40. **Virk, S.S. and** E.P. Prostko. Spray Considerations. UGA Cotton Team Newsletter. June 6, 2022.

41. **Virk, S.S. and** E.P. Prostko. Spray Considerations. Peanut Pointers. UGA Peanut Team. June 9, 2022.
42. **Virk, S.S.,** and R. Kemerait. Pesticide application technology for in-furrow granular pesticides. UGA Precision Ag Blog. May 17, 2022.
43. **Virk, S.S.** and W.M. Porter. In-Field Planter Considerations. Peanut Pointers. UGA Peanut Team. May 13, 2022.
44. **Virk, S.S.** and W.M. Porter. In-Field Planter Considerations. UGA Cotton Team Newsletter. May 9, 2022.
45. **Virk, S.S.** Tips for collecting quality planting data. UGA Precision Ag Blog. April 22, 2022.
46. **Virk, S.S.** and W.M. Porter. Planter Preparation. Peanut Pointers. UGA Peanut Team. April 8, 2020.
47. **Virk, S.S.** and W.M. Porter. Planter Preparation. UGA Cotton Team Newsletter. April 4, 2020.
48. **Virk, S.S.,** and W. Porter. 12-point checklist to ensure your planter is ready for the field. UGA Precision Ag Blog. March 17, 2022.
49. **Virk, S.S.** Proper spreader calibration is important for precision fertilizer applications. UGA Precision Ag Blog. February 13, 2022.
50. **Virk, S.S.,** and G. Harris. Consider variable-rate application to reduce fertilizer costs. UGA Precision Ag Blog. January 17, 2022.
51. **S.S. Virk** and S. Monfort. Peanut Harvest Equipment Considerations. Peanut Pointers, UGA Peanut Team. September, 2021.
52. **Virk, S.S.,** E.P. Prostko and W.M. Porter. Spray Considerations. UGA Cotton Team Newsletter. June, 2021.
53. **Virk, S.S.,**and W.M. Porter. In-Field Planter Considerations. UGA Cotton Team Newsletter. May, 2021.
54. **Virk, S.S.,** and W.M. Porter. Considerations for Peak Row-Crop Planter Performance. UGA Cotton Team Newsletter. April, 2021.
55. **Virk, S.S.** and W.M. Porter. Considerations for Peak Row-Crop Planter Performance. Peanut Pointers, UGA Peanut Team. April, 2021.
56. C. Hand, A. Culpepper, G. Harris, R. Kemerait, Y. Liu, C. Perry, W. Porter, P. Roberts, **S.S. Virk**, S. Bag. 2021 Georgia Cotton Production Guide. March, 2021.
57. **Virk, S.S.**. Spraying Tips: UGA Peanut Production – The Agronomic Quick Reference Guide. December, 2020.
58. **Virk, S.S.** Maximizing the Value of Cotton Yield Monitors. Georgia Cotton Commission Newsletter. October, 2020.
59. **Virk, S.S.** and W.M. Porter. Make Sure to Calibrate the Yield Monitor. UGA Cotton Team Newsletter. September, 2020.
60. **Virk, S.S.,** W.M. Porter and E. Prostko. Sprayer Considerations to Improve Product Coverage and Efficacy. UGA Cotton Team Newsletter. June, 2020.
61. **Virk, S.S.,** W.M. Porter and E. Prostko. Sprayer Considerations to Improve Application. Peanut Pointers, UGA Peanut Team. June, 2020.
62. **Virk, S.S.** and W.M. Porter. Checking In-field Planter Performance during Planting. UGA Cotton Team Newsletter. May, 2020.
63. **Virk, S.S.** and W.M. Porter. Checking In-field Planter Performance during Planting. Peanut Pointers, UGA Peanut Team. May, 2020.
64. **Virk, S.S.** and W.M. Porter. Planter Considerations for Peak Performance. UGA Cotton Team Newsletter. April, 2020.
65. W.M. Porter, C. Cloud, D. Hall, and **S.S. Virk**. Irrigation System Prep and Early Season Water Requirements for Cotton Production. UGA Cotton Team Newsletter. April, 2020.

66. **Virk, S.S.** and W.M. Porter. Planter Considerations for Peak Performance. Peanut Pointers, UGA Peanut Team. April, 2020.
67. **Virk, S.S.** and W.M. Porter. Calibration of Grain and Cotton Yield Monitor for Collecting Quality Yield Data. Reference Guide: UGA Extension Agent Training, July, 2019.
68. **Virk, S.S.** and W.M. Porter. Planter Setup and Maintenance Checklist for Successful Stand Establishment. Peanut Pointers. Peanut Pointers, UGA Peanut Team. March, 2018.

OTHER OUTREACH PRODUCTS

Websites and Social Media Developed/Maintained to Support Extension and Outreach activities:

- Website: AU Precision Ag – https://precisionag.auburn.edu
- Facebook: AU Precision Ag – https://www.facebook.com/auprecag/
- Twitter: AU Precision Ag – https://x.com/AU_PrecisionAg
- LinkedIn: AU Precision Ag – https://www.linkedin.com/company/auprecisionag

Webpages and social media developed to support research and extension activities at UGA (5 total)

- **Website**: UGA Digital Ag - https://agtechdata.uga.edu/; (2020 – 2024)
- **Blog**: UGA Precision Ag Extension - https://site.extension.uga.edu/precisionag/; (2020 – 2024)
- **Facebook**: UGA Digital Ag - https://www.facebook.com/UGADigitalAg/; (2020 – 2024)
- **Twitter**: UGA Digital Ag - https://twitter.com/UGADigitalAg; (2020 – 2024)
- **Instagram**: UGA Digital Ag - https://www.instagram.com/ugadigitalag/; (2020 – 2024)

Other Audio and Video Products:

Podcasts episodes co-hosted and edited:

1. How AI is Revolutionizing Farming: Insights from the Peanut Podcast. The Peanut Podcast. December 10, 2024. Host: (Role: Guest)
2. Peanut Update with Kris Balkcom. AL Crops Podcast, Season 4 Episode 6. December 5, 2024. Guest: Kris Balkcom. (Role: Co-host and Editor)
3. Central AL Crop Update. AL Crops Podcast, Season 4 Episode 5. December 3, 2024. Guest: Christy Hicks and Blake Lanton. (Role: Co-host and Editor)
4. Auburn University OVT Program. AL Crops Podcast, Season 4 Episode 4. December 2, 2024. Guest: Henry Jordan. (Role: Co-host and Editor)
5. Corn and Soybean Harvest Update. AL Crops Podcast, Season 4 Episode 4. November 14, 2024. Guest: Drs. Eros Francesco and David Russell. (Role: Co-host and Editor)
6. West Central Update with Blake Lanton. AL Crops Podcast, Season 4 Episode 3. October 23, 2024. Guest: Blake Lanton. (Role: Co-host and Editor)
7. Cotton Defoliation with Steve Brown. AL Crops Podcast, Season 4 Episode 2. October 16, 2024. Guest: Dr. Steve Brown. (Role: Co-host and Editor)

8. Late Planting and Pest Management. UGA - All About the Pod Podcast. June 1, 2024. (Role: Guest)
9. Pre-Plant Preparations. Talking Cotton Podcast – Episode 2. April 12, 2024. (Role: Guest)

10. Planter Mishaps and Suggestions with Wetter Conditions. Talking Cotton Podcast – Episode 2. May 17, 2024. (Role: Guest)
11. Preseason Checklist for Planting. UGA - All About the Pod Podcast – Episode 2. February 16, 2024. (Role: Guest)
12. Peanut Grades. UGA - All About the Pod Podcast. October 13, 2023. (Role: Guest)
13. Transitioning from Planting to Growth. UGA - All About the Pod Podcast. June 11, 2023. (Role: Guest)
14. Shaping the Future of Sustainable Farming Technology Through Integrative Precision Ag. UGA CAES Cultivating Curiosity Podcast. May 8, 2023. (Role: Guest)
15. Planter Preparation and Maintenance. The Georgia Peanuts Podcast. May 9, 2022. (Role: Guest)
16. Using Spray Technology for Site-Specific Crop Management. Precision Points – An AgTech Podcast. December 8, 2022. (Role: Guest)
17. Tips and Recommendations for Successful Planting. The Georgia Peanuts Podcast. May 10, 2021. (Role: Guest)
18. Ag Technology and Precision Agriculture. Georgia Farm Bureau – Growing On Podcast. October 28, 2021. (Role: Guest)
19. Tips for Effective Sprayer Applications. The Georgia Peanuts Podcast. June 14, 2021. (Role: Guest)

Broadcast and Print Interviews:

1. Role of AI in Agriculture. Peanut Podcast - National Peanut Board. November 15, 2024.
2. Spray Drone Considerations for Cotton Defoliation. On The Farm in Alabama. October 4, 2024.
3. Alabama Extension Welcomes New Precision Ag Specialist. Neighbors Magazine – ALFA. Oct 1, 2024.
4. Precision Ag Specialist Role and Activities at AU/ACES. UGA Extension Tillin' It Like It Is - Homecoming Episode. September 25, 2024.
5. Peanut Harvest Equipment Preparations. GA Peanut Commission Video Series. August 16, 2024.
6. Discover Smart Farming with Simer Virk. Discover Alabama Extension - Alabama Cooperative Extension System. August 12, 2024.
7. Sunbelt Ag Expo Flying at the Speed of Ag Technology. Southeast FarmPress. Oct. 5, 2023.
8. Precision Ag Increase Profitability. Georgia Farm Bureau News. Sept., 15, 2023.
9. Sunbelt Ag Expo Showcases New Ag Farm Technology. WALB News. July 20, 2023.
10. Sunbelt Ag Expo Field Day Educates, Informs with Future in Mind. Southeast AgNet. July 20, 2023.
11. Spray Drone Uses in Agriculture. CNN News. June 7, 2023.
12. Precision Ag Experts Share Their Vision at International Conference. UGA Research. June 1, 2023.
13. Tackling Waste in Agriculture and Food Supply Chains. Connected World. April 21, 2023.
14. Spray Technologies in Agriculture. UNL FarmBits. January 26, 2023.
15. Spray Drone Applications in Row Crops. Wiregrass Land and Living. January 17, 2023.
16. Spray Drone Applications. Farm Monitor. January 20, 2023.
17. Drone Use in Agriculture. USA Today – Dept. of Agriculture Edition. December 19, 2022.
18. Precision Technology for In-Field Crop Management. Precision Points Podcast. November 22, 2022

19. Spray Drone Use in Agriculture. UGA CAES Newswire. October 10, 2022.
20. Precision Ag Technology Use in Peanut Production. WALB News 10. September 13, 2022.
21. Ag Technology Use in Georgia Agriculture. WABE 90.1 - NPR. August 24, 2022.
22. Use of Precision Ag Technology in Peanuts. Georgia Farm Bureau Mobile Ag Classroom – Ag-Ventures Educational Series. August 4, 2022.
23. SMART Farm Initiative Aims for Collaboration. Southeast Farm Progress. June 30, 2022.
24. Peanut Planter Setup and Considerations. Georgia Peanuts Podcast. May 5, 2022.
25. Precision Ag Researcher Award. Farm Monitor. April 13, 2022.
26. Extension Specialist Spotlight. UGA Peanut Team. February 23, 2022.
27. Precision Ag Research & Future of Ag. CAES Newswire. March 7, 2022.
28. Precision Ag Technology Use and Adoption. UGA CAES Almanac. February 14, 2022.
29. Sunbelt Ag Expo Showcases Cutting-Edge agricultural advances. UGA CAES Newswire. October 27, 2021.
30. Ag Technology and Precision Agriculture. Farm Monitor. September 13, 2021.
31. Planter Considerations for Cotton During Dry Conditions. Southeast AgNet. June 1, 2021.
32. Tips and Recommendations for Successful Planting. Georgia Peanuts Podcast. May 10, 2021.
33. Role of Precision Ag and Technology in Ag Production. Georgia Public Broadcasting. April 9, 2021.
34. Mechanical Planter Settings can Impact Harvest Yield. UGA CAES. March 22, 2021.
35. Experience as an Agricultural Engineer and Advice for New Graduates. Association of Agricultural, Biological and Food Engineers of Indian Origin. November 6, 2020.
36. UGA adds Precision Ag Specialist. Ag Information Network. August 27, 2020.
37. New Precision Ag Specialist Joins UGA. UGA CAES. August 13, 2020.
38. Precision Spray Technologies for Pesticide Applications in Row-Crops. AGCO Crop Tour 2020. June 9, 2020.
39. Advice for Drone Use in Agriculture. Vegetable and Specialty Crop News. January 11, 2020. Available at
40. Are Drone the Future of Georgia Farmers? FOX24 WGXA TV. March 13, 2019.
41. UAS Application in Precision Agriculture and Forestry. Specialist Panel: Georgia Drone Summit. April 16, 2018.

4. SERVICE

A. UNIVERSITY, COLLEGE AND DEPARTMENT SERVICE:

- Member, Search Committee - Digital Agriculture Assistant Professor Faculty Position, Biosystems Engineering. 2024 - Present

B. PROFESSIONAL SERVICE:

Professional Affiliation:

- Member, Alabama Association of County Agricultural Agents and Specialists (AACAAS), 2024 – Present
- Member, American Society of Agronomy (ASA), 2017 – Present
- Member, American Peanut Research and Education Society (APRES), 2017 – Present
- Member, International Society of Precision Agriculture (ISPA), 2014 – Present
- Member, American Society of Agricultural and Biological Engineers (ASABE), 2010 – Present

Professional Society/Committee Involvement

- Program Chair, MS 54 Precision Agriculture, American Society of Agricultural and Biological Engineers, 2024 – Present
- Secretary, MS 23-6 Liquid Application Systems, American Society of Agricultural and Biological Engineers, 2023 – Present
- Member, Extension Education, American Society of Agronomy, 2023 – Present
- Member, Precision Agriculture Systems Community, American Society of Agronomy, 2020 – Present
- Member, MS 60 Unmanned Aerial Systems, American Society of Agricultural and Biological Engineers, 2017 – Present
- Member, MS 49 Machinery Systems for Crop Production, American Society of Agricultural and Biological Engineers, 2017 – Present
- Member, MS 54 Precision Agriculture, American Society of Agricultural and Biological Engineers, 2013 – Present

Event Organizer/Moderator/Judging

- Moderator, Precision Ag Systems Oral Session, Machinery Systems, Sensors and Technology in Precision Agriculture, Annual ASA-CSSA-SSSA International Meeting, San Antonio, TX. Nov. 11 – 13, 2024.
- Competition Judge, Extension Education Graduate Student Oral Presentations, Annual ASA-CSSA-SSSA International Meeting, San Antonio, TX. Nov. 11 – 13, 2024.
- Competition Judge, Extension Education Graduate Student Poster Presentations, Annual ASA-CSSA-SSSA International Meeting, San Antonio, TX. Nov. 11 – 13, 2024.
- Moderator, Drone Spraying Oral Session, 16th International Conference on Precision Agriculture, Manhattan, KS. July 21-24, 2024.

Editorship and Peer-Review

- Co-Editor, Special Issue – Innovative Technology and Techniques for Effective Weed Control, Frontiers in Plant Science. (2024 – Present)
- Manuscript Reviews: 4-5/year; Journals - ASABE, Precision Ag, AgriEngineering, Agronomy

- Extension publications: 1-2 per year

PRIOR TO AUBURN UNIVERSITY

A. UNIVERSITY, COLLEGE AND DEPARTMENT SERVICE:

- Member, Digital Ag Faculty Search Committee, Biosystems Engineering, Auburn University. 2024 - 2025.
- Member, First Inaugural Conference Committee, Institute of Integrative Precision Ag (IIPA) Committee, 2022 – 2023
- Member, Program Development Specialist Search Committee, UGA Cooperative Extension, 2022 – 2023
- Member, Extension Precision Ag Specialist Search Committee, Horticultural Crops, 2022 – 2023
- Chair, Website and Social Media Committee, Department of Crop and Soil Sciences, 2022 – 2023
- Member, Southwest District Advisory Board, UGA Cooperative Extension, 2021 – 2023
- Member, Diversity, Equity and Inclusion (DEI) Committee, College of Agricultural and Environmental Sciences, 2021 – 2022

B. PROFESSIONAL SERVICE

Professional Society/Committee Involvement

- Program Chair, MS 54 Precision Ag, American Society of Agricultural and Biological Engineers, 2024 – 2025.
- Secretary, MS 23-6 Liquid Application Systems, American Society of Agricultural and Biological Engineers, 2023 – 2024
- Senior Director, State Support Staff, Georgia Association of County Extension Agents (GACAA), 2023 – 2024
- Junior Director, State Support Staff, Georgia Association of County Extension Agents (GACAA), 2022 – 2023
- Board Member, Georgia Crop Production Alliance (GCPA), 2022 – 2023
- Alternate Board Member, Georgia Crop Production Alliance (GCPA), 2021 – 2022
- Leader, Precision Agriculture Systems Community, American Society of Agronomy, 2021-2022
- Vice-Leader, Precision Agriculture Systems Community, American Society of Agronomy, 2020-2021
- Chair, MS 49 Machinery Systems for Crop Production, American Society of Agricultural and Biological Engineers, 2022 – 2023.
- Vice Chair, MS 49 Machinery Systems for Crop Production, American Society of Agricultural and Biological Engineers, 2021 – 2022.
- Secretary, MS 49 Machinery Systems for Crop Production, American Society of Agricultural and Biological Engineers, 2021 – 2022.
- Member, Georgia Crop Production Alliance (GCPA), 2021 – 2024
- Member, Georgia Association of County Extension Agents (GACAA), 2020 – 2024
- Member, Georgia Section ASABE, 2017 – 2024

Event Organizer/Moderator/Judging

- Session Moderator: Machinery Systems, Sensors, Technology and Data Applications in Precision Agriculture. 2023 Annual ASA-CSSA-SSSA Meeting, St. Louis, MO. November 1, 2023.
- Session Moderator: Production and Harvest Machinery. 2023 Annual APRES Meeting, Savannah, GA. July 13, 2023.
- Award Judge – Outstanding Georgia Peanut Farmer Award. December 28, 2022.
- Competition Judge – Poster Competition, UGA Extension SW District ANR Conference, November 22, 2022.
- Session Organizer: Machinery Systems, Sensors, Technology and Data Applications in Precision Agriculture Oral I & II. 2022 Annual ASA-CSSA-SSSA Meeting, Baltimore, MD. November 7, 2022.
- Session Organizer: Precision Ag Systems General Poster Session I & II. 2022 Annual ASA-CSSA-SSSA Meeting, Baltimore, MD. November 7 - 8, 2022.
- Session Organizer: Emerging Technologies, Innovative Techniques and Advanced Applications in Precision Ag Oral I & II. 2022 Annual ASA-CSSA-SSSA Meeting, Baltimore, MD. November 7, 2022.
- Workshop Co-Organizer: Leveraging NASA Geospatial Data Products for Agriculture Applications. 2022 Annual ASA-CSSA-SSSA Meeting, Baltimore, MD. November 6, 2022.
- Symposium Co-Organizer: Current Trends and Future Directions of Unoccupied Aircraft System (UAS) Based High Throughput Phenotyping Technologies for Precision Agriculture Applications. 2022 Annual ASA-CSSA-SSSA Meeting, Baltimore, MD. November 8, 2022.
- Competition Organizer: Precision Ag Systems Oral and Poster Competition. 2022 Annual ASA-CSSA-SSSA Meeting, Baltimore, MD. November 7-9, 2022.
- Co-organizer: Graduate Student Poster Session. 2022 Annual GCPA Meeting, Tifton, GA. October 26, 2022.
- Moderator: Machinery Systems for Crop Production - 2022 ASABE AIM, Houston, TX. July 19, 2022.
- Competition Judge: Joe Sugg Graduate Student Oral Competition. 2022 Annual APRES Meeting. Dallas, TX. July 11 2022.
- Competition Judge: Graduate Student Oral Competition. 2022 Beltwide Cotton Conference. San Antonio, TX. Jan. 5, 2022.
- Session Organizer: Machine Learning Applications in Precision Agriculture (four oral sessions: I, II, III & IV). 2021 Annual ASA-CSSA-SSSA Meeting, Salt Lake City, Utah. November 7 – 10, 2021.
- Session Organizer: Emerging Technologies, Procedures, Machine Learning and Decision Support Systems in Precision Agriculture (two poster sessions: I & II). 2021 Annual ASA-CSSA-SSSA Meeting, Salt Lake City, Utah. November 7 – 10, 2021.
- Symposium Organizer: Current and Emerging Precision Ag Technologies, Big Data Management and Applications in Precision Agriculture. 2021 Annual ASA-CSSA-SSSA Meeting, Salt Lake City, Utah. November 10, 2021.

Expert Opinion

- US Government Accountability Office. Engagement on Precision Ag Technologies. November 18, 2022.
- Allen Myers (On-The-Go Crop Yield Monitor) Nomination for National Inventors Hall of Fame. April 4 – 8, 2022.

Editorship and Peer Review

- Topic Editor, Sensors and Technologies in Precision Agriculture, AgriEngineering, 2020 – 2021.
- Review Editor, Sustainable and Intelligent Phytoprotection, Frontiers in Plant Science, 2021 – 2023.

- Manuscript Reviews: >50; Journals - ASABE, Precision Agriculture, AgriEngineering, Biosystems Engineering, Agronomy, Crop Science, Field Crops, Cotton Science and Peanut Science.
- Extension Publications: 8 total; University of Wisconsin, The Ohio State University, University of Tennessee, University of Georgia