Sierra N. Young, Ph.D.

Utah Water Research Laboratory
Civil and Environmental Engineering
Utah State University
4110 Old Main Hill, Logan, UT 84322

Office: (435) 797-1519
Phone: (630) 310-0578
Email: sierra.young.edu
Homepage: thedaisylab.com

Education

2018	Ph.D.	Civil Engineering	University of Illinois at Urbana-Champaign
2015	M.S.	Civil Engineering	University of Illinois at Urbana-Champaign
2014	B.S.	Civil and Environmental Engineering	Cornell University

Academic Appointments

2022-Present	Assistant Professor	Civil and Environmental Engineering	Utah State University
2019-2021	Assistant Professor	Biological and Agricultural Engineering	NC State University
2018	Visiting Scholar	Agricultural and Biosystems Engineering	Iowa State University

Awards and Honors

2024 NSF CAREER Award
2024 Educational Aids Blue Ribbon Award Recipient, American Society of Agricultural and Biological Engineers (ASABE)
2023 Outstanding Reviewer, ASABE Information Technology, Sensors, and Control Systems (ITSC) Technical Community
2023 USU CEE Undergraduate Research Mentor of the Year
2020 US Frontiers of Engineering Symposium Invited Speaker & Participant, National Academy of Engineering, *by nomination and invitation only*
2020 New Faces of the ASABE
Class of 2020 Top Honoree
2016 National Defense Science and Engineering Graduate Fellowship, U.S. Department of Defense
2016 FMC Educational Fund Fellowship, FMC Technologies, University of Illinois at Urbana-Champaign

PUBLICATIONS

Peer-Reviewed Journal Publications

† indicates corresponding author(s)
Publications with advised students* and postdocs** as noted

[36] A. Safre, A. Torres-Rua, B. Black, and **S. Young**, "Deep learning framework for fruit counting and yield mapping in tart cherry using YOLOv8 and YOLO11," *Smart Agricultural Technology*, no. 100948, 2025. DOI: 10.1016/j.atech.2025.100948.

[35] M. Ahsin, J. Varre, M. Poore, J. Rogers, A. Franzluebbers, **S. Young**, S. Kronberg, S. Provenza, J. Bain, and S. van Vliet, "Improved soil health and pasture phytochemical richness underlies improved beef nutrient density in southern us grass-finished beef systems," *npj Science of Food*, vol. 9, no. 151, 2025. DOI: 10.1038/s41538-025-00471-2.

[34] **S. Young**, "Intelligent robots for agriculture – Ag-robot development, navigation, and information perception (editorial)," *Frontiers in Robotics and AI*, vol. 12, 2025. DOI: 10.3389/frobt.2025.1597912.

[33] A. Sorenson*, J. McLean, and **S. Young**, "Arsenic mobilization at the water-shore interface of a shrinking saline lake," *Science of the Total Environment*, vol. 99, 15 2025. DOI: 10.1016/j.scitotenv.2025.180318.

[32] H. Dakshinamurthy*, S. Jones, R. Schwartz, and **S. Young**†, "Waveform analysis for short time domain reflectometry (TDR) probes to obtain calibrated moisture measurements from partial vertical sensor insertions," *Computers and Electronics in Agriculture*, vol. 235, 2025. DOI: 10.1016/j.compag.2025.110233.

[31] A. Franzluebbers, S. van Vliet, **S. Young**, and M. Poore, "Soil health and root-zone enrichment characteristics between paired grassland and cropland fields in the southeastern USA," *Grassland Research*, vol. 2, pp. 299–308, 4 2024. DOI: 10.1002/glr2.12066.

[30] P. Pandey*, J. Acosta, K. Payn, and **S. Young**†, "Towards autonomous, aerial pollination: Design of a robotic pollinator payload for controlled crosses in loblolly pine," *Applied Engineering in Agriculture*, vol. 40, no. 6, 2024. DOI: 10.13031/aea.15916.

[29] A. Nguyen*, J. Ore, C. Castro-Bolinaga, S. Hall, and **S. Young**†, "Towards autonomous, optimal water sampling with aerial and surface vehicles for rapid water quality assessments," *Journal of the ASABE*, vol. 67, no. 1, 2024. DOI: 10.13031/ja.15796.

[28] H. Dakshinamurthy*, S. Jones, S. Corkins*, P. Pandey*, and **S. Young**†, "Design and evaluation of an aerial vehicle payload for automated, near-surface soil moisture measurements," *Computers and Electronics in Agriculture*, vol. 227, 2024. DOI: 10.1016/j.compag.2024.109518.

[27] **S. Young**†, M. Han, and J. Peschel, "Computer vision approach for tile drain outlet overflow monitoring and flow rate estimation," *Applied Engineering in Agriculture*, vol. 39, no. 2, pp. 153–165, 2023. DOI: 10.13031/aea.15157.

[26] A. Nguyen*, J. Holt, M. Knauer, V. Abner, E. Lobaton, and **S. Young**†, "Towards rapid weight assessment of finishing pigs using a handheld, mobile RGB-D camera," *Biosystems Engineering*, vol. 226, pp. 155–168, 2023. DOI: 10.1016/j.biosystemseng.2023.01.005.

[25] P. Pandey*, P. Veazie, B. Whipker, and **S. Young**†, "Predicting foliar nutrient concentrations and nutrient deficiencies of hydroponic lettuce using hyperspectral imaging," *Biosystems Engineering*, vol. 230, pp. 458–469, 2023. DOI: 10.1016/j.biosystemseng.2023.05.005.

[24] E. R. Linder, **S. Young**, X. Li, S. Henriquez-Inoa, and D. Suchoff, "The effect of harvest date on temporal cannabinoid and biomass production in the floral hemp (*Cannabis sativa L.*) cultivars baox and cherry wine *(Editor's Choice)*," *Horticulturae*, vol. 8, no. 10, 2022. DOI: 10.3390/horticulturae8100959.

[23] P. Veazie, P. Pandey*, **S. Young**, M. Ballance, K. Hicks, and B. Whipker, "Impact of macronutrient fertility on mineral uptake and growth of *Lactuca sativa* 'salanova green' in a hydroponic system," *Horticulturae*, vol. 8, no. 11, 2022. DOI: 10.3390/horticulturae8111075.

[22] E. R. Linder, **S. Young**, S. Henriquez-Inoa, X. Li, and D. Suchoff, "The effect of transplant date and plant spacing on biomass production for floral hemp (*Cannabis sativa L.*)," *Agronomy*, vol. 12, no. 8, 2022. DOI: 10.3390/agronomy12081856.

[21] Y. Lu†**, **S. Young**, E. Linder, B. Whipker, and D. Suchoff, "Hyperspectral imaging with machine learning to differentiate cultivars, growth stages, flowers and leaves of industrial hemp (*Cannabis sativa*)," *Frontiers in Plant Science*, vol. 12, 2022. DOI: 10.3389/fpls.2021.810113.

[20] S. Saia, N. Nelson, **S. Young**, S. Parham, and M. Vandegrift, "Ten simple rules for researchers who want to develop web apps," *PLOS Computational Biology*, vol. 18, no. 1, 2022. DOI: 10.1371/journal.pcbi.1009663.

[19] Y. Lu[†**], **S. Young**, H. Wang, and N. Wijewardane, "Robust plant segmentation of color images based on image contrast optimization," *Computers and Electronics in Agriculture*, vol. 193, no. 106711, 2022. DOI: 10.1016/j.compag.2022.106711.

[18] S. Kendler, R. Aharoni, **S. Young**, H. Sela, T. Kis-Papo, T. Fachima, and B. Fishbain, "Detection of crop diseases using enhanced variability imagery data and convolutional neural networks," *Computers and Electronics in Agriculture*, vol. 193, no. 106732, 2022. DOI: 10.1016/j.compag.2022.106732.

[17] D. Chen, Y. Lu[**], Z. Li, and **S. Young**, "Performance evaluation of deep transfer learning on multiclass identification of common weeds in cotton production systems," *Computers and Electronics in Agriculture*, vol. 198, 2022. DOI: 10.1016/j.compag.2022.107091.

[16] Y. Lu[†**], X. Li, **S. Young**, X. Li, E. Linder, and D. Suchoff, "Hyperspectral imaging with chemometrics for non-destructive determination of cannabinoids in floral and leaf materials of industrial hemp," *Computers and Electronics in Agriculture*, vol. 202, no. 107387, 2022. DOI: 10.1016/j.compag.2022.107387.

[15] Y. Lu[†**], K. Payn, P. Pandey[*], J. Acosta, A. Heine, T. Walker, and **S. Young**, "Hyperspectral imaging with cost-sensitive learning for high-throughput screening of loblolly pine (pinus taeda l.) seedling for freeze tolerance," *Transactions of the ASABE*, 2021. DOI: 10.13031/trans.14708.

[14] S. Kronberg, F. Provenza, S. van Vliet, and **S. Young**, "Closing nutrient cycles for animal production–current and future agroecological and socio-economic issues," *Animal*, 2021. DOI: 10.1016/j.animal.2021.100285.

[13] **S. Young**[†], R. Lanciloti, and J. Peschel, "The effects of interface views on performing aerial telemanipulation tasks using small UAVs," *International Journal of Social Robotics*, 2021. DOI: 10.1007/s12369-021-00783-9.

[12] E. Barnes, G. Morgan, K. Hake, J. Devine, R. Kurtz, G. Ibendahl, A. Sharda, G. Rains, J. Snider, J. M. Maja, J. A. Thomasson, Y. Lu, H. Gharakhani, J. Griffin, E. Kimura, R. Hardin, T. Raper, **S. Young**, K. Fue, M. Pelletier, J. Wanjura, and G. Holt, "Opportunities for robotic systems and automation in cotton production," *AgriEngineering*, vol. 3, no. 2, pp. 339–362, 2021. DOI: 10.3390/agriengineering3020023.

[11] P. Pandey[*], K. Payn, Y. Lu[**], A. Heine, T. Walker, J. J. Acosta, and **S. Young**[†], "Hyperspectral imaging combined with machine learning for the detection of fusiform rust disease incidence in loblolly pine seedlings," *Remote Sensing*, vol. 13, no. 18, 2021. DOI: 10.3390/rs13183595.

[10] P. Pandey[*], H. Dakshinamurthy[*], and **S. Young**[†], "Autonomy in detection, actuation, and planning for robotic weeding systems," *Transactions of the ASABE*, vol. 64, no. 2, pp. 557–563, 2021. DOI: 10.13031/trans.14085.

[9] Y. Lu[†**], T. Walker, K. Payn, J. Acosta, **S. Young**, P. Pandey[*], and A. Heine, "Prediction of freeze damage and minimum winter temperature of the seed source of loblolly pine seedlings using hyperspectral imaging," *Forest Science*, vol. 67, no. 3, pp. 321–334, 2021. DOI: 10.1093/forsci/fxab003.

[8] R. Aharoni, V. Klymiuk, B. Sarusi, **S. Young**, T. Fahima, B. Fishbain, and S. Kendler, "Spectral light-reflection data dimensionality reduction for timely detection of yellow rust," *Precision Agriculture*, vol. 22, pp. 267–286, 2020, ISSN: 1573-1618. DOI: 10.1007/s11119-020-09742-2.

[7] G. Penny, V. Srinivasan, R. Apoorva, K. Jeremiah, J. Peschel, **S. Young**, and S. Thompson, "A process-based approach to attribution of historical streamflow decline in a data-scarce and human-dominated watershed," *Hydrological Processes*, vol. 34, no. 8, pp. 1981–1995, 2020. DOI: 10.1002/hyp.13707.

[6] **S. Young** and J. Peschel, "Review of human–machine interfaces for small unmanned systems with robotic manipulators," *IEEE Transactions on Human-Machine Systems*, vol. 50, no. 2, pp. 131–143, 2020. DOI: 10.1109/THMS.2020.2969380.

[5] Y. Lu** and **S. Young**, "A survey of public datasets for computer vision tasks in precision agriculture," *Computers and Electronics in Agriculture*, vol. 178, p. 105 760, 2020. DOI: 10.1016/j.compag.2020.105760.

[4] **S. Young**†, "A framework for evaluating field-based, high-throughput phenotyping systems: A meta-analysis," *Sensors*, vol. 19, no. 16, p. 3582, 2019. DOI: 10.3390/s19163582.

[3] **S. Young**, E. Kayacan, and J. Peschel, "Design and field evaluation of a ground robot for high-throughput phenotyping of energy sorghum," *Precision Agriculture*, vol. 20, no. 4, pp. 697–722, 2019. DOI: 10.1007/s11119-018-9601-6.

[2] E. Kayacan, **S. Young**, J. Peschel, and G. Chowdhary, "High-precision control of tracked field robots in the presence of unknown traction coefficients," *Journal of Field Robotics*, vol. 35, no. 7, pp. 1050–1062, 2018. DOI: 10.1002/rob.21794.

[1] **S. Young**, J. Peschel, G. Penny, S. Thompson, and V. Srinivasan, "Robot-assisted measurement for hydrologic understanding in data sparse regions," *Water*, vol. 9, no. 7, p. 494, 2017. DOI: 10.3390/w9070494.

Non-Peer-Reviewed Publications and Conference Proceedings

[8] M. Esteghamati, M. Ahmed, **S. Young**, and M. Halling, "A multi-task deep learning-based framework for structural details and corrosion detection in steel bridges," in *12th International Conference on Bridge Maintenance, Safety and Management*, IABMAS, 2024.

[7] R. Jeon, J. Peschel, B. Ramirez, J. Holt, **S. Young**, and A. Nguyen*, "Late-finishing pig body weight estimation using extrapolation from side surface point clouds," in *2nd US Precision Livestock Farming Conference (USPLF)*, University of Tennessee Institute of Agriculture, 2023.

[6] **S. Young**, J.-P. Ore, and S. Hall, "The coming wave of aquatic robotics," *ASABE Resource Magazine Special Issue: Digital Water (*2024 Educational Aids Blue Ribbon Award Winner)*, 2022. [Online]. Available: https://www.asabe.org/Portals/0/aPubs/Resource/PDF/Resource29-04JulyAug2022.pdf.

[5] S. Hall, M. Campbell, V. Campbell, A. Geddie, M. O'Frinsko, M. Greensword, R. Hasan, N. Kasera, C. Malveaux, D. Paul, M. Thomas, D. Smith, R. Smith*, and **S. Young**, "Smart systems to enhance sustainability and add value to marine aquaculture," in *2021 ASABE Annual International Virtual Meeting*, American Society of Agricultural and Biological Engineers, 2021. DOI: 10.13031/aim.202100523.

[4] P. Pandey*, K. Payn, Y. Lu**, A. J. Heine, T. D. Walker, and **S. Young**, "High throughput phenotyping for fusiform rust disease resistance in loblolly pine using hyperspectral imaging," in *2020 ASABE Annual International Virtual Meeting*, American Society of Agricultural and Biological Engineers, 2020. DOI: 10.13031/aim.202000872.

[3] P. Pandey*, H. Dakshinamurthy*, and **S. Young**, "A literature review of non-herbicide, robotic weeding: A decade of progress," White Paper, 2020. [Online]. Available: https://cottoncultivated.cottoninc.com/wp-content/uploads/2020/06/Robotic-Weeding-LitReview-White_Paper_Pandey_Dakshinamurthy_Young_2020.pdf.

[2] Y. Lu**, K. G. Payn, P. Pandey*, J. J. Acosta, A. J. Heine, T. D. Walker, and **S. Young**, "Hyperspectral imaging-enabled high-throughput screening of loblolly pine (pinus taeda) seedlings for freeze tolerance," in *2020 ASABE Annual International Virtual Meeting*, American Society of Agricultural and Biological Engineers, 2020. DOI: doi:10.13031/aim.202001072.

[1] E. Barnes, G. Morgan, K. Hake, J. Devine, R. Kurtz, T. Griffin, G. Ibendahl, A. Sharda, G. Rains, K. Fue, J. Snider, A. Bruce, A. Ermanis, J. Maja, D. Daly, C. Chiu, M. Cutulle, M. Burce, J. Griffin, A. Thomasson, H. Gharakhani, E. Kimura, B. Ayre, T. Raper, **S. Young**, M. Pelletier, J. Wanjura, and G. Holt, "Current and potential robotic applications to improve cotton production," in *Proceedings of the 2020 Beltwide Cotton Conferences*, Beltwide Cotton Conferences (BCCS), 2020.

Publications Currently In Review

[4] S. Neupane, J. S. Horsburgh, R. Bin Issa*, and **S. Young**, "HydrocamCollect: A Robust Data Acquisition and Cloud Data Transfer Workflow for Camera-based Hydrological Monitoring," *Environmental Modelling & Software*, Submitted August 2025. [Online]. Available: https://papers.ssrn.com/abstract=5451102.

[3] ——, "HydrocamCompute: Serverless Cloud Computing Workflow for Camera-based Hydrological Monitoring," *Environmental Modelling & Software*, Submitted August 2025. [Online]. Available: https://papers.ssrn.com/abstract=5451100.

[2] M. Bailey*, C. Coopmans, S. Holberg, S. Chowdhury, C. Castro-Bolinaga, J. Ore, and **S. Young**, "Development a tethered drone payload for measuring subsurface velocity profiles inshallow tidal rivers," *Drone Systems and Applications*, Submitted June 2025.

[1] M. Motlagh, **S. Young**, K. Chapman, E. Wilcox, and F. Birgand, "Computer vision-based measurement of stormwater discharge: Proof-of-concept," *PLOS Water*, Submitted January 2025.

Book Chapters

[2] P. Pandey* and **S. Young**†, "Design Considerations for In-Field Measurement of Plant Architecture Traits Using Ground-Based Platforms," in *High-Throughput Plant Phenotyping: Methods and Protocols*, ser. Methods in Molecular Biology, A. Lorence and K. Medina Jimenez, Eds., 1st ed., vol. 2539, New York, NY: Springer, 2022. [Online]. Available: https://link.springer.com/book/9781071625361.

[1] **S. Young**†, "Analyzing sensor data at the source," *Case Studies and Modules for Data Science Instruction, American Society of Agricultural and Biological Engineers*, pp. 1–14, 2020. [Online]. Available: https://elibrary.asabe.org/abstract.asp?aid=52092.

RESEARCH FUNDING

Current projects:

- CAREER: Integrating Hyperspectral Data, Advanced Algorithms, and Field Observations to Uncover the Effects of Increasing Dust Deposition on the Environment. *National Science Foundation.* Total Funding: $547,044. 7/2024 – 6/2029. Role: PI.
- Operationalizing a Flexible Modeling and Data Collection Workflow to Detect Harmful Algal Blooms using Hyperspectral Imagery and Machine Learning in Data-Poor Freshwater Environments. *U.S. Geological Survey.* Total funding: $284,998. 7/2024 – 3/2027. Role: PI.
- Generating Responsive Education and Advanced Training in Emerging and Synergetic Technology (GREATEST). *Kansas State University (Prime: USDA NIFA).* 9/2024 – 8/2027. Total funding: $749,962 (USU Subaward: $39,664). Role: USU PI, Project Co-PI.
- Developing camera gauge stations to monitor water levels in agricultural irrigation canals. *USU Extension Water Initiative.* Total Funding: $74,969. 5/2024 – 4/2026. Role: Co-PI.

- Advancing Camera-Based Monitoring for Operational Hydrologic Applications. *U.S. Geological Survey.* Total Funding: $509,800. 6/2023 – 5/2026. Role: PI.

- NRI: INT: Towards the Development of a Customizable Fleet of Autonomous Co-Robots for Advancing Aquaculture Production. *USDA NIFA via the National Science Foundation National Robotics Initiative.* Total Funding: $1,018,596. 11/2020 – 10/2025. Original Role: PI (now Co-PI at USU).

Previous projects:

- Low-Cost Visual Sensing of Stormwater Outlet Flow. *North Carolina Department of Transportation* Total Funding: $168,479. 1/2022 – 12/2024. Original Role: PI (then Co-PI at USU).

- Evaluating Cyanobacteria and Cyanotoxins in Surface Water Aerosols near Utah Lake. *U.S. Geological Survey 104(b) Program.* Total Funding: $34,100. 9/2023 – 8/2024. Role: PI.

- Understanding Pollutant Mobilization at the Water-Shore Interface of a Drying Great Salt Lake. *U.S. Geological Survey 104(b) Program.* Total Funding: $30,104. 9/2022 – 8/2023. Role: PI.

- Automating Agricultural Pest Scouting Practices using Novel Drone Technologies. *Utah State University Seed Grant.* Total Funding: $19,984. 9/2022 – 8/2023. Role: PI.

- UAV Biosurveillance of Cucurbit Downy Mildew. *NC Department of Agriculture & Consumer Services.* Total funding: $77,850. 1/2022 – 12/2023. Role: Co-PI.

- Developing a Pilot Data Science Extension Program to Advance Data-Driven Soybean Production. *United Soybean Board.* Total Funding: $86,024. 10/2021 – 9/2022. Original Role: PI.

- Southern Pasture-Raised Beef Production: From Farm to Table to Us. *Duke University (Prime: USDA Southern SARE).* Total Funding: $380,203 (NCSU Subaward: $83,342). 4/2021 – 3/2024. Role: NCSU PI, Project Co-PI.

- Optimizing UAV Pathogen Biosurveillance for Precision Management of Downy Mildew in Cucurbits. *North Carolina Agricultural Foundation.* Total Funding: $31,180. 7/2021 – 6/2023. Role: PI.

- Thermal Imaging to Predict Apple Preharvest Drop Potential. *North Carolina Agricultural Foundation.* Total Funding: $25,000. 7/2021 – 6/2022. Role: Co-PI.

- Optimizing Floating Treatment Wetland Deployment to Improve Water Quality. *NC Clean Water Management Trust Fund.* Total funding: $187,453. 3/2021 – 8/2023. Role: Co-PI.

- Optimizing the Harvest Window: Determining Timing to Maximize CBD Production in Hemp. *NC Agricultural Foundation.* Total funding: $33,020. 7/2020 – 6/2021. Role: Co-PI.

- A Large-scale Public Image Database of Cotton Weeds for Machine Vision Based Robotic Weeding. *Cotton Incorporated.* Total Funding: $60,000. 1/2020 – 12/2022. Role: PI.

- Accurate and Rapid Assessment of Pig Body Weight. *National Pork Board.* Total Funding: $128,148. 12/2019 – 11/2020. Role: Co-PI.

PRESENTATIONS

Invited Talks and Seminars

[26] "Beyond remote sensing: UAS innovations for direct environmental sensing," Thompson Rivers University, Environmental Science Seminar Series, Kamloops, BC, Canada, Nov. 14, 2024.

[25] "Beyond remote sensing: UAS innovations for direct sensing and sampling in agriculture," (Virtual), Michigan State University, Biological and Agricultural Engineering Seminar Series, Oct. 1, 2024.

[24] "Hydrologic monitoring using cameras: Key takeaways from initial deployments," Water Observing Technology Forum, Alabama Water Institute, University of Alabama, Tuscaloosa, AL, Apr. 24, 2024.

[23] "Precision technologies for visual and physical sensing in agriculture," Department of Plant, Soils, and Climate Graduate Student Seminar Series, Utah State University, Logan, UT, Mar. 20, 2023.

[22] "Manipulating UAVs for controlled pollinations in the forestry industry," (Virtual), International Conference on Digital Technologies for Sustainable Crop Production (DIGICROP), Mar. 30, 2022.

[21] "Using small, unoccupied robots for physical and visual sensing in natural and agricultural systems," Utah Water Research Laboratory Seminar Series, Logan, UT, Feb. 10, 2022.

[20] "From farm to takeoff: Small, unoccupied systems for physical and visual sensing in biological and agricultural environments," (Virtual), UC Davis Biological and Agricultural Engineering Seminar Series, Nov. 3, 2021.

[19] "Precision technologies for physical and visual sensing in agricultural systems," NC State Electrical and Computer Engineering Colloquia, Raleigh, NC, Oct. 15, 2021.

[18] "Using robotics, sensing, and automation to improve the throughput of phenotyping," (Virtual), Donald Danforth Plant Science Center's Autumn 2021 Seminar Series, Sep. 22, 2021.

[17] "Precision technologies for automated visual and physical sensing in agricultural systems," Virginia Tech University, School of Plant and Environmental Sciences Seminar Series (Virtual), Apr. 16, 2021.

[16] "From farm to takeoff: Small unpiloted robots for precision sensing in agricultural systems," Columbia University, Department of Mechanical Engineering Seminar Series (Virtual), Nov. 20, 2020.

[15] "Precision technologies for physical and visual sensing in agricultural and biological systems," University of Illinois at Urbana-Champaign I4 Seminar Series (Virtual), Oct. 9, 2020.

[14] "Analyzing sensor data at the source," Invited Session Titled: "Instructional Case Studies with Data Sets for YOUR Instruction", ASABE Annual International Meeting (Virtual), Jul. 15, 2020.

[13] "From farm to takeoff: Aerial robots for visual and physical sensing in agricultural applications," (Virtual), NC State University, Department of Crop and Soil Science Seminar, Jul. 12, 2020.

[12] "Towards Enabling Remote Telemanipulation by Uncrewed Aerial Systems (UAS) in Unknown Environments," (Virtual), RSS Robots in the Wild Workshop: Challenges in Deploying Robust Autonomy for Robotic Exploration, Jul. 12, 2020.

[11] "Using robotics, sensing, and automation to improve the throughput of phenotyping," NC State University INTRINsyC Seminar Series (Virtual), Jun. 26, 2020.

[10] "From farm to takeoff: Small unmanned robots for agricultural and biological systems," Cornell Initiative for Digital Agriculture (CIDA) Seminar Series, Ithaca, NY, Dec. 9, 2019.

[9] "Using robotics and automation to improve the throughput of field-based phenotyping," Syngenta RTP Plant Expression Community Seminar Series, Raleigh, NC, Nov. 12, 2019.

[8] "From farm to takeoff: Ground and aerial robots for biological systems analysis," Carnegie Mellon University Field Robotics Center Seminar Series, Pittsburgh, PA, May 21, 2019.

[7] "Advancements and challenges in technology and data management practices of field-based, high-throughput phenotyping," Phenome 2019 Invited Speaker, American Society of Plant Biologists, Tucson, AZ, Feb. 8, 2019.

[6] "Unmanned aerial and surface systems for agricultural applications," 61st Annual Meeting of the Soil Science Society of North Carolina, Raleigh, NC, Jan. 22, 2019.

[5] "Unmanned systems for sensing and sense-making in agricultural and natural environments," Invited Seminar Speaker, Department of Food, Agricultural and Biological Engineering, The Ohio State University, Columbus, OH, Apr. 10, 2018.

[4] "Human-machine interaction in robotics and automation for sensing and sense-making," Invited Seminar Speaker, Department of Agricultural and Biosystems Engineering, Purdue University, West Lafayette, IN, Feb. 26, 2018.

[3] "Design and evaluation of a ground vehicle for field-based phenotyping of energy sorghum," Phenome 2018 Invited Speaker, American Society of Plant Biologists, Tucson, AZ, Feb. 15, 2018.

[2] "Robot-assisted measurements in a data-sparse region of india," Ven Te Chow Hydrosystems Seminar, University of Illinois, Urbana, IL, Apr. 15, 2016.

[1] "Bathymetric data collection using multiple robotics platforms: Uavs, usvs, and kite aerial photography," Linking Robotics, Citizen Science and Remote Sensing to Advance Water Science in Data-Scarce Regions Seminar Series, Ashoka Trust for Research in Ecology and the Environment (ATREE), Bangalore, India, Jun. 12, 2015.

Conference Presentations from Accepted Abstracts

Presenting author listed first

[35] V. Swaminathan[**], **S. Young**, E. Westra, M. Schaumann, H. Smith, and J. Brahney, "Leveraging hyperspectral data for precision dust management near the great salt lake basin," in *ASABE Annual International Meeting*, Toronto, ON, CA, Jul. 2025.

[34] S. Hall, C. Castro-Bolinaga, S. Chowdhury, N. Nelson, J. Ore, D. Smith, R. Price, and **S. Young**, "Aquabots: Aquacultural engineering with automated and robotic systems," in *ASABE Annual International Meeting*, Toronto, ON, CA, Jul. 2025.

[33] J. Peschel, M. Bailey, and **S. Young**, "Foundational interaction research for manipulating drones," in *ASABE Annual International Meeting*, Toronto, ON, CA, Jul. 2025.

[32] R. Issa[*], **S. Young**, J. S. Horsburgh, S. Khan[*], and S. Neupane, "Operationalizing camera-based hydrologic monitoring with AI and edge computing," in *ASABE Annual International Meeting*, Toronto, ON, CA, Jul. 2025.

[31] **S. Young**, S. Van Vliet, M. Ahsin, J. Varre, M. Poore, J. Rogers, A. Franzluebbers, S. Kronberg, F. Provenza, and J. Bain, "Evaluating soil and nutritional benefits of grass-fed beef systems: Implications for agricultural conservation practices," in *ASABE Annual International Meeting*, Toronto, ON, CA, Jul. 2025.

[30] S. Holberg, S. Chowdhury, C. Castro-Bolinaga, S. Hall, N. Nelson, **S. Young**, and J. Ore, "Understanding the implications of hydrodynamics changes around oyster aquaculture sites for the prediction of fecal coliform transport," in *ASCE 2025 EWRI Congress*, Anchorage, AK, USA, May 2025.

[29] D. McPeake[*], R. Martin, **S. Young**, J. McLean, and K. Francom[*], "Measuring aerosolization from harmful algal blooms (HABs) at Utah lake," in *Air Quality: Science for Solutions*, Logan, UT, USA, Mar. 2025.

[28] R. Martin, **S. Young**, J. McLean, D. McPeake[*], and K. Francom[*], "Examining the potential for aerosolization from harmful algal blooms (HABs) from a lake in central Utah," in *105th Annual Meeting of the American Meteorological Society*, New Orleans, LA, USA, Jan. 2025.

[27] M. A. Yost, J. B. Barker, A. Etienne, M. L. Pate, and **S. Young**, "One is the loneliest number: Intercollegiate and departmental collaboration for creating precision agriculture certificates," in *ASABE Annual International Meeting*, Anaheim, CA, USA, Jul. 2024.

[26] **S. Young**, M. Bailey[*], C. Coopmans, and J. Ore, "Rapidly characterizing surface water properties using a tethered UAV sensor package," in *ASCE 2024 EWRI Congress*, Milwaukee, WI, USA, May 2024.

[25] **S. Young**, J. Horsburg, E. Goharian, S. Khan*, R. Issa*, and S. Neupane, "Advancing camera-based monitoring for operational water resource applications," in *ASCE 2024 EWRI Congress*, Milwaukee, WI, USA, May 2024.

[24] J. Peschel, R. Jeon, B. Ramirez, J. Holt, **S. Young**, and A. Nguyen, "Body weight estimation for late finisher pigs using side surface point cloud extrapolation," in *ASABE Annual International Meeting*, Omaha, NE, USA, Jul. 2023.

[23] M. Nooshzadi Motlagh, F. Birgand, K. Chapman, and **S. Young**, "Low-cost visual sensing of stormwater outlet using computer vision," in *ASABE Annual International Meeting*, Omaha, NE, USA, Jul. 2023.

[22] **S. Young**, P. Pandey*, and M. Blakowski, "Detecting and quantifying foliar dust deposition using hyperspectral imagery," in *ASABE Annual International Meeting*, Omaha, NE, USA, Jul. 2023.

[21] H. Dakshinamurthy*, **S. Young**, and S. Jones, "Calibration methodology for commercial TDR soil moisture sensors for reliable, automated measurements by robotic systems," in *ASABE Annual International Meeting*, Omaha, NE, USA, Jul. 2023.

[20] **S. Young**, Y. Lu**, X. Li, X. Li, E. Linder, and D. Suchoff, "Hyperspectral imaging for non-destructive determination of cannabinoids in floral and leaf materials of industrial hemp," in *NAPPN Annual Meeting*, St. Louis, MO, USA, Feb. 2023.

[19] P. Pandey*, J. Acosta, K. Payn, and **S. Young**, "Towards aerial robotic pollination for controlled crosses in pinus taeda," in *ASABE Annual International Meeting*, Houston, TX, USA, Jul. 2022.

[18] A. Nguyen*, C. Moore, J.-P. Ore, and **S. Young**, "Optimizing water sampling tours for heterogeneous robotic teams," in *ASABE Annual International Meeting*, Houston, TX, USA, Jul. 2022.

[17] H. N. Dakshinamurthy*, S. Corkins*, P. Pandey*, and **S. Young**, "Field performance evaluation of automated, in situ surface soil moisture measurements using unoccupied aerial vehicles," in *ASABE Annual International Meeting*, Houston, TX, USA, Jul. 2022.

[16] A. Nguyen* and **S. Young**, "Optimizing water sampling tours for autonomous systems," in *ASCE 2022 EWRI Congress*, Atlanta, GA, Jun. 2022.

[15] R. Smith*, S. Hall, and **S. Young**, "Sampling and estimation of surface phytoplankton concentrations in brackish environments via autonomous surface and aerial vehicles," in *ASABE International Meeting*, (Virtual), **AIM student oral presentation competition award winner**, Jul. 2021.

[14] H. N. Dakshinamurthy* and **S. Young**, "Automated soil moisture content measurement using unpiloted aerial vehicles," in *ASABE Annual International Meeting*, (Virtual), Jul. 2021.

[13] A. Nguyen*, M. Knauer, J. Holt, T. Abner, and **S. Young**, "Accurate and rapid assessment of pig body weights using a handheld, mobile stereo imaging system," in *ASABE Annual International Meeting*, (Virtual), Jul. 2021.

[12] T. Stephenson, **S. Young**, L. Guertault, and G. Roberson, "NCSU BAE: The Good, the Bad, and the Takeaways from Online Laboratory Instruction," in *ASABE Annual International Meeting*, (Virtual), Jul. 2021.

[11] A. Hillman*, **S. Young**, and C. Sayde, "Spatial variability in plant biomass and water use characteristics in miscanthus," in *ASABE Annual International Meeting*, (Virtual), Jul. 2021.

[10] R. Smith*, S. Hall, and **S. Young**, "Collaborative aerial and surface vehicles for water quality sensing in aquatic environments," in *ASCE 2021 EWRI Congress*, (Virtual), Jun. 2021.

[9] R. Smith*, S. Hall, and **S. Young**, "Water quality monitoring using collaborative aerial and surface systems in nearshore aquaculture production environments," in *ASABE Annual International Meeting*, (Virtual), Jul. 2020.

[8] H. N. Dakshinamurthy* and **S. Young**, "In situ precision measurements of soil moisture content using an unmanned aerial vehicle," in *ASABE Annual International Meeting*, (Virtual), Jul. 2020.

[7] Y. Lu[**], P. Pandey[*], K. Payn, A. Heine, T. Walker, and **S. Young**, "Hyperspectral imaging-enabled high-throughput screening of loblolly pine (pinus taeda) seedlings for freeze tolerance," in *ASABE Annual International Meeting*, (Virtual), Jul. 2020.

[6] P. Pandey[*], K. Payne, T. Walker, A. Heine, and **S. Young**, "High throughput phenotyping for fusiform rust disease resistance in loblolly pine using hyperspectral imaging," in *ASABE Annual International Meeting*, (Virtual), Jul. 2020.

[5] R. Smith[*], S. Hall, and **S. Young**, "Water quality testing using collaborative unmanned surface vehicle-unmanned aerial vehicle systems in coastal environments," in *ASCE World Environmental and Water Resources Congress*, (Accepted Abstract; Conference Cancelled due to COVID19), May 2020.

[4] **S. Young**, R. Lanciloti, and J. Peschel, "Unmanned systems for agricultural water measurement and management," in *Global Water Security for Agricultural and Natural Resources (ASABE Global Initiative Conference)*, Hyderabad, India, Oct. 5, 2018.

[3] **S. Young**, K. Koppula, R. Lanciloti, J. Riesen, and J. Peschel, "Telemanipulation by unmanned aerial vehicles for agricultural data applications," in *ASABE International Meeting*, Detroit, MI, Jul. 30, 2018.

[2] **S. Young**, J. Riesen, and J. Peschel, "In situ measurement of soil-water parameters using a micro unmanned aerial vehicle," in *ASCE World Environmental and Water Resources Congress*, Minneapolis, MN, Jun. 4, 2018.

[1] **S. Young**, "Field application of small, low-cost robots for remote surface data collection," in *Innovative Strategies for Sustainable Water Management*, ***Best Oral Presentation and Springer Abstract Award**, Phagwara, Punjab, India, Nov. 18, 2017.

Conference Posters from Accepted Abstracts

Presenting author listed first

[18] E. Goharian, **S. Young**, J. Horsburgh, R. Issa[*], S. Khan[*], S. Neupane, and M. Hatami, "Advancing camera-based monitoring for operational hydrologic applications," in *American Geophysical Union*, Washington, DC, USA, Dec. 2024.

[17] H. Dakshinamurthy[*], S. Jones, R. Schwartz, and **S. Young**, "TDR waveform analysis to obtain post processed moisture contents from partial vertical sensor insertions," in *American Geophysical Union*, Washington, DC, USA, Dec. 2024.

[16] R. Issa[*], S. Khan[*], **S. Young**, J. Horsburg, and S. Neupane, "Advancing camera-based monitoring for hydrologic applications," in *Utah State University Spring Runoff Conference*, Logan, UT, USA, Mar. 2024.

[15] D. McPeake[*], **S. Young**, J. McLean, and R. Martin, "Evaluating cyanobacteria and cyanotoxins in surface water and aerosols near utah lake," in *Utah State University Spring Runoff Conference*, Logan, UT, USA, Mar. 2024.

[14] S. Chowdhury, C. Castro-Bolinaga, N. Nelson, S. Hall, **S. Young**, and J.-P. Ore, "Evaluating the influence of oyster leases in estuarine hydrodynamics: A numerical modeling approach," in *ASABE Annual International Meeting*, Omaha, NE, USA, Jul. 2023.

[13] P. Pandey[*], K. Payn, and **S. Young**, "Design of a pollinating robotic system," in *ASABE Annual International Meeting*, (Virtual), Jul. 2021.

[12] P. Pandey[*], K. Payn, Y. Lu[**], J. Acosta, T. Walker, A. Heine, and **S. Young**, "High-throughput phenotyping of loblolly pine: Analysis of hyperspectral images at the plant organ level for fusiform rust disease incidence," in *North American Plant Phenotyping Network (NAPPN) Annual Meeting*, (Virtual), Feb. 2021.

[11] A. Nguyen*, V. Abner, M. Knauer, J. Holt, and **S. Young**, "Accurate and rapid assessment of pig body weights using stereo vision and advanced image processing," in *ASABE Annual International Meeting*, (Virtual), Jul. 2020.

[10] A. Hillman*, **S. Young**, and C. Sayde, "High resolution assessment of miscanthus production environmental impacts," in *ASABE Annual International Meeting*, (Virtual), Jul. 2020.

[9] P. Pandey*, K. Payn, and **S. Young**, "A UAV platform for mass production of control crosses in Loblolly Pine," in *ASABE Annual International Meeting*, (Virtual), Jul. 2020.

[8] H. Lin, J. Neal, G. Roberson, **S. Young**, and R. Leon, "Evaluating spray nozzles at lower heights and pressures for circular application," in *Weed Science Society of America*, Honolulu, HI, Mar. 2020.

[7] **S. Young** and J. Peschel, "Advancing remote manipulation with unmanned aerial vehicles for agricultural applications," in *ASABE Annual International Meeting*, Boston, MA, Jul. 9, 2019.

[6] J. Peschel and **S. Young**, "Human-robot teaming for hydrologic data gathering at multiple scales," in *AGU Fall Meeting Abstracts*, New Orleans, LA, 2017.

[5] **S. Young** and J. Peschel, "Bathymetric mapping with a small unmanned surface system," in *ASCE World Environmental and Water Resources Congress*, West Palm Beach, FL, 2016.

[4] J. Peschel and **S. Young**, "Robot-assisted socio-hydrologic and water quality understanding in data sparse regions," in *AGU Fall Meeting Abstracts*, San Francisco, CA, 2016.

[3] **S. Young** and J. Peschel, "Waterway-view imaging with a small unmanned surface system," in *AGU Fall Meeting Abstracts*, San Francisco, CA, 2015.

[2] G. Penny, S. Thompson, V. Srinivasan, J. Peschel, **S. Young**, K. Jeremiah, *et al.*, "Streamflow generation in a drying catchment outside bangalore, india," in *AGU Fall Meeting Abstracts*, San Francisco, CA, 2015.

[1] J. Peschel, **S. Young**, G. Penny, S. Thompson, and V. Srinivasan, "Robot-assisted measurements in data sparse regions," in *AGU Fall Meeting Abstracts*, San Francisco, CA, 2015.

EXTENSION & EDUCATION

Extension & Education Publications

[6] J. Ward, R. Phillips, E. Pena Martinez, **S. Young**, and G. Roberson, "Precision agriculture technology: Choosing a UAV and sensor for agricultural applications," *NC Cooperative Extension, Fact Sheet AG-944*, 2023. [Online]. Available: https://content.ces.ncsu.edu/precision-agriculture-technology-choosing-a-uav-and-sensor-for-agricultural-applications.

[5] M. Carr, N. Nelson, **S. Young**, S. Hall, and S. Saia, "Nowcasting and forecasting coliform bacteria contamination in coastal systems," *NC Cooperative Extension, Fact Sheet AG-921*, 2022. [Online]. Available: https://content.ces.ncsu.edu/nowcasting-and-forecasting-coliform-bacteria-contamination-in-coastal-systems.

[4] A. Hillman*, C. Mari, C. Sayde, and **S. Young**, "Miscanthus: An environmental choice for marginal lands," *NC Cooperative Extension, Fact Sheet AG-906*, 2021. [Online]. Available: https://content.ces.ncsu.edu/miscanthus-an-environmental-choice-for-marginal-lands.

[3] N. Von Tress, N. Nelson, and **S. Young**, "Detecting blue-green algal blooms with satellite imagery," *NC Cooperative Extension, Fact Sheet AG-902*, 2021. [Online]. Available: https://content.ces.ncsu.edu/supporting-cyanobacterial-bloom-monitoring-with-satellite-imagery.

[2] S. Saia, N. Nelson, **S. Young**, and S. Hall, "Shellfish leases and harvest closures along the north carolina coast," *NC Cooperative Extension, Fact Sheet AG-898*, 2021. [Online]. Available: https://content.ces.ncsu.edu/shellfish-leases-and-harvest-closures-along-the-north-carolina-coast.

[1] R. Smith*, S. Hall, and **S. Young**, "The use of uncrewed vehicles in coastal aquaculture," *NC Cooperative Extension, Fact Sheet*, 2020. [Online]. Available: https://content.ces.ncsu.edu/the-use-of-uncrewed-vehicles-in-coastal-aquaculture.

Extension Presentations

[9] **S. Young**, "Automated slip handling," in *NC SweetPotato Virtual Field Day*, Oct. 2020.

[8] ——, "Advances in machine learning and robotics for autonomous weeding," in *NC Soybean Producers Association Virtual Field Day*, Aug. 2020.

[7] ——, "Redefining food systems panel," in *MBA FoodCon*, (Raleigh, NC), Jan. 23, 2020.

[6] ——, "Current and future uses for ground and aerial robots in precision agriculture," in *Southeast Regional Fruit & Vegetable Conference, Strawberry Educational Session*, (Savannah, GA), Jan. 10, 2020.

[5] ——, "Robotics and automation: Opportunities for peach production," in *Southeast Regional Fruit & Vegetable Conference, Peach Educational Session*, (Savannah, GA), Jan. 10, 2020.

[4] ——, "Robotic crop monitoring and spraying technologies: Current uses and future trends," in *Southeast Regional Fruit & Vegetable Conference, Caneberry Educational Session II*, (Savannah, GA), Jan. 10, 2020.

[3] **S. Young**, C. Reberg-Horton, J. Ward, and G. Roberson, "Digital ag tools for on-farm research," in *NC Extension Conference*, (Raleigh, NC), Oct. 28, 2019.

[2] **S. Young** and J. Ward, "Tools for phenotyping, precision agriculture, and machine systems," in *International Union of Forest Research Organizations Tree Biotechnology Conference, Suggs Lab Tour*, (Raleigh, NC), Jun. 26, 2019.

[1] **S. Young**, "Opportunities for unmanned systems in precision agriculture," in *CaseIH and Cotton Inc. Industry Meeting on Innovative Cotton Harvesting Approaches*, Mar. 8, 2019.

Workshops

[6] "UAVs for precision agriculture," (Haywood County, NC), Instructor and Co-Organizer, Drone Training for Western North Carolina Extension Providers, Mountain Research Station, Sep. 1, 2021.

[5] "Digital agriculture workshop," (Virtual), Instructor, Midwest Big Data Summer School, Iowa State University, May 20, 2021.

[4] "Hardware and sensors," (Tucson, AZ), Instructor and Organizer, Phenome Digital Phenotyping Workshop, Phenome Conference, Feb. 6, 2019.

[3] "Future directions: Robotic applications for ag sensing," (Raleigh, NC), Instructor, Data Science for Ag Extension Agents Workshop, Booth Field Learning Lab, Jan. 16, 2019.

[2] "Hardware and sensors," (Tucson, AZ), Instructor, Phenome Digital Phenotyping Workshop, Phenome Conference, Feb. 13, 2018.

[1] "Unmanned aerial vehicles in intensively managed landscapes," (West Lafayette, IN), Instructor, Consortium of Universities for the Advancement of Hydrologic Science (CUAHSI), Role of Runoff and Erosion on Soil Carbon Stocks Workshop, Purdue University, Oct. 20, 2015.

SERVICE

Service to the Profession

ASCE = American Society of Civil Engineers
ASABE = American Society of Agricultural and Biological Engineers
IEEE = Institute of Electrical and Electronics Engineers
SWE = Society of Women Engineers

Appointed or Elected Leadership

2024-2025	Secretary, EWRI Interdisciplinary Council, ASCE
2022-2024	Officer, Emerging Information Systems Executive Committee, ASABE
2022-2024	Executive Board Member, North American Plant Phenotyping Network (NAPPN)
2018-2021	Officer, Emerging Information Systems (ITSC-254) Committee, ASABE
2020-2023	Officer, Emerging and Innovative Technologies Committee, ASCE EWRI
2016-2018	Director and Liaison, Graduate Women in SWE, University of Illinois

Committee Membership Involvement

since 2022	ITSC-01 Executive Committee, ASABE
since 2020	ITSC-02 Steering Committee, ASABE
since 2020	Mechatronics and Robotics (ITSC-318), ASABE
since 2020	Unmanned Aerial Systems (MS-60), ASABE
2020-2023	Membership Development Council (MDC), ASABE
since 2018	Technical Committee on Agricultural Robotics and Automation (AgRA), IEEE RAS
since 2018	Emerging and Innovative Technologies Committee (EITC), ASCE EWRI
since 2018	Emerging Information Systems Committee (ITSC-254), ASABE
2018-2019	Unmanned Systems for Environmental & Water Resources Task Committee, ASCE EWRI

Conference Organization Involvement

2024	Information Technology and Control Systems Technical Program Chair, ASABE Annual International Meeting
2022-2023	Co-Organizer, AI for Agriculture and Food Systems Workshop, AAAI Conference on Artificial Intelligence
2020	Co-Convener, The MacGyver Session: Novel, Exciting, Self-Made, Hacked, or Improvised Sensors and Technologies to Measure and Understand the Geosphere, AGU
2020	Co-Organizer and Moderator, Invited Session: Instructional Case Studies with Data Sets for YOUR Instruction, ASABE AIM
2019	Program Committee Member, ASPB Phenome Conference
2017	Organizing Committee Member, Women Empowered in STEM Conference (weSTEM), University of Illinois

Membership in Professional and Honorary Societies

since 2017	American Society of Agricultural and Biological Engineers (ASABE)
2017-2021	Institute of Electrical and Electronics Engineers (IEEE)
2015-2018	American Geophysical Union (AGU)
since 2014	National Honor Society Tau Beta Pi
since 2013	National Honor Society Chi Epsilon
since 2013	Society of Women Engineers (SWE)
since 2012	American Society of Civil Engineers (ASCE)

Editorships and Reviewing Activities

2023-2024	Topic Editor, Intelligent Robotics in Agriculture, Frontiers in Robotics and AI, *Industrual Robotics*
2020-2021	Guest Editor, Plant Phenomics and Precision Agriculture Call for Papers, *PLOS ONE*
Ongoing	Reviewer: *Transactions of the ASABE, Applied Engineering in Agriculture, Plant Methods, IEEE Robotics and Automation Letters, HardwareX, Remote Sensing, Frontiers in Earth Science, Journal of Water Resources Planning and Management, Journal of Field Robotics.*

University and Community Service

Utah State Campus Service

2025	Speaker, USU Center for Empowering Teaching Excellence Teaching Journal Sparkshop
2024	Volunteer Judge, College of Engineering Student Poster Competition
2023-2024	Co-Organizer, CEE Department Seminar Series
2022	Volunteer, Spring Runoff Conference, Poster Judge
since 2022	Participant, Society of Women Engineers at USU Faculty Mentoring Events

NC State Campus Service

2021	Volunteer, Mentorship Program at NC School of Science and Math (NCSSM)
2021	Volunteer and Instructor, NCSciFest SciMatch Program
2020-2021	Member, NCSU GLBT Advocate Program
2020	Volunteer, Virtual State 4-H Presentation Judging for Electric and Wheels and Engines
2020	Volunteer and Panel Member, Virtual State 4-H Electric Congress
2020-2021	Volunteer and Presenter, K-12 NC Public School Science Classes (virtual)
2019	Volunteer, VEX Robotics Triangle League Competitions
2019	Volunteer, BAE Ecological and Environmental Engineering Summer Camps
2019	Volunteer, ASABE Rally in Raleigh Panel Moderator

MENTORSHIP

Ph.D. Students

Abdulganiyu Jimoh (USU)	Anticipated: 2028
Safran Khan (USU)	Anticipated: 2027
Hemanth Dakshinamurthy (USU)	Graduated: 5/2024
Piyush Pandey (co-advised, NCSU)	Graduated: 10/2022

M.S. Students

Razin Bin Issa (USU)	Graduated: 7/2025
Dylan McPeake (USU)	Graduated: 6/2025
Mitchell Bailey (co-advised, USU)	Graduated: 8/2024
Russell Smith (co-advised, NCSU)	Graduated: 12/2021
Andrew Hillman (co-advised, NCSU)	Graduated: 12/2021
Anh Nguyen (NCSU)	Graduated: 06/2021

Postdoctoral Researchers

Dr. Vaishali Swaminathan (USU)	08/2024 – Present
Dr. Yuzhen Lu (NCSU)	01/2020 - 11/2020

Undergraduate Students Supervised

Eliza Haderlie	Computer Science (USU)	Fall 2025
Arianne Fels	Computer Science (CMU)	Summer 2025
Autumn Kirkham	Biological Engineering	Summer 2025
Arian Bencomo	Plant Science	Summer 2025
Hannah Fluckiger	Computer Science (USU)	Summer 2024 - Spring 2025
Hannah Smith	Civil and Environmental Engineering (USU)	Summer 2024 - Spring 2025
Kai Francom	Civil and Environmental Engineering (USU)	Summer 2024
Brock Whitaker	Mechanical Engineering (USU)	Summer 2023 - Spring 2024
Matthew Farley	Civil and Environmental Engineering (USU)	Summer 2023
Isaac Orrill	Mechanical Engineering (USU)	Summer 2022 - Summer 2023
Aspen Sorensen	Chemistry (USU)	Summer 2022 - Spring 2023
Spencer Corkins	Biological & Agricultural Engineering (NCSU)	Spring 2020 - Fall 2021
Ian Dershem	Computer Science (UNC Chapel Hill)	Spring 2021 - Summer 2021
Evan Smith	Biological & Agricultural Engineering (NCSU)	Summer 2019 - Summer 2021
John Corriher	Biological & Agricultural Engineering (NCSU)	Summer 2019
William Daniels	Computer Engineering (UNC Charlotte)	Summer 2019
Nicole Knox	Computer Engineering (NCSU)	Summer 2019
Ryan Lanciloti	Computer Engineering (ISU)	Spring 2018 - Fall 2018

Graduate Student Committee Membership

Amr Ellethy	Ph.D.	Civil & Environmental Engineering (USU)	Anticipated: 2028
Tarique Aziz	Ph.D.	Civil & Environmental Engineering (USU)	Anticipated: 2028
Michaela Shallue	Ph.D.	Civil & Environmental Engineering (USU)	Anticipated: 2027
Utsav Bhandari	M.S.	Applied Sciences, Technology, & Education	Anticipated: 2026
Aarion Sigman	Ph.D.	Civil & Environmental Engineering (USU)	Anticipated: 2027
Claire Spickermann	Ph.D.	Plant, Soils, & Climate (USU)	Anticipated: 2026
Hyrum Tennant	Ph.D.	Civil & Environmental Engineering (USU)	Anticipated: 2026
Kurt Wedegaertner	Ph.D.	Plant, Soils & Climate (USU)	Anticipated: 2027
Sajan Neupane	M.S.	Civil & Environmental Engineering (USU)	Graduated: 12/2025
Anderson Safre	Ph.D.	Civil & Environmental Engineering (USU)	Graduated: 6/2025
Jimmy Larson	Ph.D.	Horticultural Science (NCSU)	Graduated: 1/2023
Israi Abu Shanab	Ph.D.	Civil and Environmental Engineering (USU)	Graduated: 5/2022
Eric Linder	M.S.	Horticultural Science (NCSU)	Graduated: 6/2022
Ryan Ackett	M.S.	Biological & Agricultural Engineering (NCSU)	Graduated: 12/2021
Victoria Abner	M.S.	Animal Science (NCSU)	Graduated: 6/2021
Ryan Phillips	M.S.	Biological & Agricultural Engineering (NCSU)	Graduated: 12/2020
Kaelin Saul	Ph.D.	Biological & Agricultural Engineering (NCSU)	Graduated: 5/2020

TEACHING

Fall 2024, Instructor, Utah State University *CEE 2540: Computer Programming and Numerical Methods for Civil and Environmental Engineers (undergraduate course).*

Since Spring 2023, Instructor and Course Developer, Utah State University *CEE 6750: Computer Vision Applications for Natural and Built Environments (graduate course).*

Since Fall 2022, Instructor and Course Developer, Utah State University *CEE 1400 Introduction to Computer Programming for Civil and Environmental Engineers (undergraduate course).*

2019-2020, Instructor, North Carolina State University, *BAE 401/501 Sensors and Controls.*

Spring 2018, Co-Instructor, Iowa State University, *ABE 690 Visual Sensing and Sensemaking.*