John W. Nowlin, PhD GISP

Interim Chair & Associate Professor
College of Agriculture, Arkansas State University,
PO Box 1080 State University, AR 72467
office: (870) 972-3468 | email: jnowlin@AState.edu | ORCID 0000-0002-2891-028X

Education

University of North Carolina, Greensboro
Ph.D. in Geography (Dec 2017)
Dissertation: *The Geography of Wine in North Carolina: Terroir, Site Selection Efficacy, and Implications for Pierce's Disease Resistant Grape Varieties in the Southeastern U.S.*
Committee: Rick Bunch (advisor), Corey Johnson, Jeffery Patton, Michael Pretes, Gregory V. Jones
https://libres.uncg.edu/ir/uncg/listing.aspx?styp=ti&id=22593

University of North Carolina, Greensboro
M.A. in Applied Geography & Post Baccalaureate GIS Certificate (May 2013)
Thesis: *A mesoscale geophysical capability/suitability model for Vitis vinifera vineyard site selection in the North Carolina Piedmont Triad region, case study: Rockingham County NC.*
Committee: Rick Bunch (advisor), Dan Royall, Zhi-Jun Liu
https://libres.uncg.edu/ir/uncg/listing.aspx?id=10074

University of North Carolina, Greensboro
B.A. in Geography *Summa Cum Laud*, *Phi Beta Kappa, Gamma Theta Upsilon* (Dec 2010)
Concentrations in GIScience & Earth Science

Guilford Technical Community College
A.A. in General Studies (May 2008)
A.A.S. in Electrical Electronics Technology (Dec 2006)

Experience

Interim Chair of the College of Agriculture (Jul 2026 – present)

Interim Associate Dean, College of Agriculture | Arkansas State University (Aug 2025 – Jun 2026)

Associate Professor, College of Agriculture | Arkansas State University (2024 – present)
(Appointment: 75% teaching, 15% research, 10% service)

Assistant Professor, College of Agriculture | Arkansas State University (2018 – 2024)
(Appointment: 75% teaching, 15% research, 10% service)

Primary Courses taught @ Arkansas State University:
AGRI 31003 - Regenerative Agriculture Fundamentals
AGRI 6619V - Thesis

AGRI 66263 - Regenerative Agriculture Systems
AGRI 6638V - Independent Study
ENSC 6613V - Independent Research in Environmental Sciences
ENSC 6689V - Thesis
GEOS 35903 - Geospatial Data Applications
GEOS 35403 - Fundamentals of GIS/GPS
GEOS 35503/55503 - Understanding GIS
GEOS 30203/55203 - Principles of Cartography
GEOS 32103/55773 - Remote Sensing
GEOS 42603 - GIS and Precision Agriculture Capstone
GEOS 4100V - Special Problems in GIS and Precision Agriculture
GEOS 5600V - Special Topics Graduate Seminar
GEOS 55403 - GIS Bootcamp
GEOS 54503 - Environmental Raster Data and Models
GEOS 59703 - Applied Geospatial Research

Lecturer, Dept. of Geography, Environment & Sustainability | U. of North Carolina, Greensboro
(Appointment: 100% teaching) (2017 – 2018)

Adjunct Instructor, Department of Geography (2017)
Courses Taught @ UNCG
ENV 110 - Introduction to Sustainability Studies
ENV 100 - Introduction to Environmental Studies
ENV 400 - Capstone Seminar in Environmental Studies
GEO 103 - Introduction to Earth Science
GEO 121 - Introduction to Geographic Information Science

Systems Developer & Tech Support Specialist (National Service), Installation Coordinator & Field Service Representative (Southeast Regional Service) | Stiles Machinery (Jun 1998 – Aug 2017)
GIS Database Development in ArcGIS: Desktop, Server, and Online; MS Access
Intranet Developer: SharePoint 365 Site Owner
Installation, Maintenance, and Repair of Industrial Woodworking Machinery

Teaching Assistant, Electrical/Electronics Program | GTCC (2006 – 2007), *part time*
Developed Blackboard curriculum: AC/DC, Electrical Computations, Wiring.
Lab Assistant: AC/DC Theory, Electrical Computations, Motors & Controls, Wiring, Industrial Safety.

Fire Controlman Second Class | U.S. Navy (1992 – 1998), *Honorable Discharge*
USS Hayler DD-997, NATO Sea Sparrow Missile System
USS Comte de Grasse DD-974, Mk 23 Target Acquisition System
Work Center Supervisor for maintenance and operation
Extensive travel in South America, The Caribbean, Europe & The Middle East

Research Interests

topographic modeling, agricultural conservation, regenerative agriculture, precision agriculture, agricultural remote sensing, niche agricultural site suitability, site selection, terroir, viticultural geography

Publications

Published

Iqbal, M. W., Reba, M., Nowlin, J., Massey, J., Leslie, D., & Delhom, C. 2026. "Review of surface water storage and subsurface recharge in declining portions of the Mississippi River Valley Alluvial Aquifer." WIREs Water. https://doi.org/10.1002/wat2.70059.

Roy, Dilip Kumar, Ahmed A. Hashem, Michele L. Reba, Deborah L. Leslie, and John Nowlin. 2024. "A Maximal Overlap Discrete Wavelet Packet Transform Coupled with an LSTM Deep Learning Model for Improving Multilevel Groundwater Level Forecasts." Discover Water 4 (1): 16. https://doi.org/10.1007/s43832-024-00073-1.

Roy, Dilip Kumar, Deborah L. Leslie, Michele L. Reba, Ahmed A. Hashem, Emily Bellis, and John Nowlin. 2024. "Optimizing the Quantity of Recharge Water into a Sedimentary Aquifer through Infiltration Galleries Using a Surrogate Assisted Coupled Simulation–Optimization Approach." Journal of Hydrology 635 (May): 131183. https://doi.org/10.1016/j.jhydrol.2024.131183.

Shults, Daniel, John W. Nowlin, Joseph H. Massey and Michele L. Reba. 2024. "Automated Detection of On-Farm Irrigation Reservoirs in Two Critical Groundwater Regions of Arkansas: A Necessary Precursor for Conjunctive Water Management," International Journal of Applied Geospatial Research IJAGR: 15 (1). https://doi.org/10.4018/IJAGR.337287.

Shults, D.D., M.L. Reba, J.W. Nowlin, J.H. Massey and Q. Read. 2024. "Extending Irrigation Reservoir Histories for Improved Groundwater Modeling and Conjunctive Water Management in Two Arkansas Critical Groundwater Areas." Agricultural Water Management 293 (Mar): 108678. https://doi.org/10.1016/j.agwat.2024.108678.

Pickett, R.A., J.W. Nowlin, A.A. Hashem, M.L. Reba, J.H. Massey and S. Alsbrook. (2023) "Small Unmanned Aircraft Systems and Agro-Terrestrial Surveys Comparison for Generating Digital Elevation Surfaces for Irrigation and Precision Grading." Drones Oct 2023, 7(11), 649. https://doi.org/10.3390/drones7110649

Teague, T.G., N.R. Benson and J.W. Nowlin. 2023. "Cotton Response to Topdress Nitrogen Fertilizer When Grown in a Cotton-Peanut Rotation – Year 2." In: Slaton, N. A., & Daniels, M. (2023). Wayne E. Sabbe Arkansas Soil Fertility Studies 2022, pp. 75-83. Arkansas Agricultural Experiment Station Research Series. Retrieved from https://scholarworks.uark.edu/aaesser/213

Teague, T.G., A.M. Mann, N.R. Benson and J.W. Nowlin. 2022. "Thrips injury, seeding rate, and cover crop management effects on maturity and yield of Midsouth cotton." In: S. Boyd, M. Huffman, L. Krogman, and A. Sarkissian (Eds.), Proc. of the 2022 Beltwide Cotton Conferences, National Cotton Council, Memphis, TN, pp601–615. https://www.cotton.org/beltwide/proceedings/2005-2022/data/conferences/2022/paper/21965.pdf

Teague, T.G., N.R. Benson, J. Nowlin, and C. Wilson. 2022. "Cotton response to sidedress Nitrogen fertilizer when grown in a cotton-peanut rotation." In: N.A. Slaton (ed.). W.E. Sabbe Arkansas Soil Fertility Studies 2021, pp82–91. University of Arkansas Agricultural Experiment Station Research Series. Fayetteville. https://scholarworks.uark.edu/cgi/viewcontent.cgi?article=1206&context=aaesser

Teague, T.G., A.J. Baker, A. Mann, N.R. Benson and J. Nowlin. 2021. "Interactions of Nitrogen Fertilizer, Cotton Seeding Rate, and Late Season Insecticide for Tarnished Plant Bug Control in Midsouth Cotton." Proc. of the 2021 Beltwide Cotton Conferences, National Cotton Council [virtual], pp568–577. https://www.cotton.org/beltwide/proceedings/2005-2022/data/conferences/2021/paper/20827.pdf

Teague, T.G, J. Krob, A.J. Baker, J. Nowlin and N.R. Benson. 2020. "Interactions of cotton seeding rate, cover crop termination timing and pest insect control." In: F.M. Bourland (Ed.), Summaries of Arkansas Cotton Research 2020, Arkansas Agricultural Experiment Station Research Series 668, pp90–99. https://scholarworks.uark.edu/cgi/viewcontent.cgi?article=1163&context=aaesser

Teague, T.G., N.R. Benson, J. Krob, A. Baker and J.W. Nowlin. 2020. "On-Farm Evaluation of Reduced Cotton Seeding Rates in a Mid-South System Incorporating a Winter Cover Crop with Two Termination Times", Proc. of the 2020 Beltwide Cotton Conferences, National Cotton Council, Austin, TX, pp614–627. https://www.cotton.org/beltwide/proceedings/2005-2022/data/conferences/2020/paper/20033.pdf

Nowlin, J.W., R.L. Bunch and G.V. Jones. 2019. "Viticultural Site Selection: Testing the Effectiveness of North Carolina's Commercial Vineyards." Applied Geography. 106 (May) pp22–39. https://doi.org/10.1016/j.apgeog.2019.03.003

Krob, J, J.W. Nowlin, and T.G. Teague. 2019. "Within-field variability: A case study to evaluate factors affecting maturity and yield in a commercial cotton field in northeast Arkansas." In: F.M. Bourland (Ed.), Summaries of Arkansas Cotton Research 2018, Arkansas Agricultural Experiment Station Research Series 660, pp83–88. https://scholarworks.uark.edu/cgi/viewcontent.cgi?article=1155&context=aaesser

Teague, T.G., K.D. Wilson, N.R. Benson, J.W. Nowlin, and B. Robertson. 2019. "Seeding rate and winter cover crop effects on maturity and yield of Mid-South cotton." Proc. of the 2019 Beltwide Cotton Conferences, National Cotton Council, Memphis, TN, pp632–645. https://www.cotton.org/beltwide/proceedings/2005-2022/data/conferences/2019/papers/19303.pdf

Nowlin, J.W., and R.L. Bunch. 2016. "Geography of Wine in North Carolina: Geospatial Concepts Applied to Physical Terroir." Proceedings of the XI International Terroir Congress 2016, pp482–87. Linfield College, McMinnville OR: Southern Oregon University. https://www.calameo.com/read/004433976949ab8885344

Nowlin, J.W., and R.L. Bunch. 2016. "A Model for Selecting Viticultural Sites in the Piedmont Triad Region of North Carolina:" International Journal of Applied Geospatial Research 7 (3), pp38–70. https://www.igi-global.com/article/a-model-for-selecting-viticultural-sites-in-the-piedmont-triad-region-of-north-carolina/153925

Accepted, In Press:

Pieri, Allegra, M.L. Reba, D. Leslie, J. Nowlin, J. Massey, and A. O'Reilly. 2025. "'managed aquifer recharge pilot study using on-farm infiltration galleries in northeast Arkansas." Journal of the American Water Resources Association [accepted, in press 16 Nov 2026].

<u>Submitted</u>

Hossan, Md Sahadat, GwanSeon Kim, John W. Nowlin, Michele L. Reba, V. Steven Green, Joseph H. Massey, Jesse B. Randolinski. n.d. ."Pricing the Transition Away from Crop Residue Burning: Compensation Requirements and Expected Program Participation". [submitted 6 Oct 2026] to Applied Economic Perspectives and Policy.

Hossan, Md Sahadat, John W. Nowlin, Joseph H. Massey, Michele L. Reba, Nathan Torbik, Jesse B. Radolinski, GwanSeon Kim, V. Steven Green. n.d. "GeoAI-Based Cropland Field Boundary Delineation Using Multi-Source Fusion" [submitted to Remote Sensing of Environment on 29 Sep 2026]

Dill, Patrick, John W. Nowlin, Aaron Shew, Joseph H. Massey, Michele L. Reba, Nelson R. Benson. 2026. "Evaluation and Optimization of Spectral Water Indices for Mapping Flooded

Agricultural Fields Using Landsat 8 and Sentinel 2 Imagery." GeoCarto International. [revising and resubmitting by 10 Dec 2026]

Iqbal, M. W., Reba, M., Nowlin, J., Massey, J., Leslie, D., & Delhom, C. 2025. "Predicting Groundwater Level Response to Recharge through Infiltration Galleries in a Sedimentary Aquifer Using Integrated Machine Learning and MODFLOW Approaches" Journal of Hydrology: Regional Studies. [Submitted 2 May 2026] (rejected for scope, editing for submission to another journal)

Nowlin, John W and Tennessee Wine and Grape Board. 2024. "petition for West Tennessee AVA." Alcohol Tax and Trade Bureau. Funding. Funded by Tennessee Department of Agriculture, Agency Tracking Number 32506-04024. $50,000. [Submitted to TTB Jun 2024, pending as of 1/31/2026]

In Development

Iqbal, Wasim, Michele L. Reba, John W. Nowlin, Joseph H. Massey, Deborah Leslie, Chris Delhom. 2025. "Optimizing recharge water volume into an alluvial aquifer through infiltration galleries using an Extreme Learning Machine-based predictive optimization framework" Water Resources Management. [planned submission for internal review mid-July 2026]

Nowlin, John W and Gill Giese. "Pierce's Disease Resistant Grape Varieties: New Implications and Possibilities for the Southeastern U.S. Wine Industry" [rejected from American Journal of Enology and Viticulture in Fall 2026, revising for resubmission]

Iqbal, M. W., Reba, M., Nowlin, J., Massey, J., Leslie, D., & Delhom, C. 2025. "Irrigation Water Management Practices as a Pathway to Groundwater Conservation in the MRVAA: A Review." WIREs Water. [planned for Summer/Fall 2026]

Pickett, R.A., J.W. Nowlin, A.A. Hashem, M.L. Reba, J.H. Massey and S. Alsbrook. "Association between Field Condition and RTK UAV Photogrammetric Accuracy in Arkansas Cotton." [planned submission Fall 2026]

Shults, Daniel, John W. Nowlin, Joseph H. Massey, Michele L. Reba. (2023) "Agricultural Field Grading Assessment in Northeastern Arkansas," [planned submission Fall 2026; after new imagery is released from Arkansas GIS and after elevation data is released from USGS 3DEP]

Nowlin, John W and Gill Giese and others. "Site Suitability for Vitis vinifera and Hybrids across the MidSouth" [in development]

Nowlin, John W and Gill Giese and others. "Site Selection for *Muscadina Rotundafolia*" [in development]

Funding

Arkansas Rice, ASU Foundation gift in support of survey development, "Understanding Post-Harvest Practices, Crop Residue Mgmt, & Barriers to Non-Burning Adoption in AR" ($10,000)

Arkansas Corn and Grain Sorghum Board, "Better Burns Yield Better Air: Practical Implications of Implementing Voluntary Smoke Management Guidelines in Arkansas." PI: J Nowlin CoIs: J Manlove, J Massey, M L Reba. ($20,166). Submitted Nov 2024 [not funded]

Arkansas Rice Research and Promotion Board, "Better Burns Yield Better Air: Practical Implications of Implementing Voluntary Smoke Management Guidelines in Arkansas." PI: J Nowlin CoIs: J Manlove, J Massey, M L Reba. ($20,166). Submitted Nov 2024 [not funded]

Judd Hill Scholars Fund, "Regenerative Agriculture – Farm Projects," PI: John Nowlin CoPI: Steve Green ($3,500). [Nov 2024]

Nowlin, John W and Tennessee Wine and Grape Board. 2024. "petition for West Tennessee AVA." Alcohol Tax and Trade Bureau. Funding. Funded by Tennessee Department of Agriculture, Agency Tracking Number 32506-04024. $50,000. Submitted to TTB 1 Jun 2024.

Judd Hill Scholars Fund, "Regenerative Agriculture – Farm Projects," PI: John Nowlin CoPI: Steve Green ($6,000). [Nov 2023]

U.S. Fish and Wildlife - Endangered Species Recovery Implementation (Cat. Nbr. 15.657). "Toward the recovery of pondberry (*Lindera melissifolia*): combining demography, soil-borne microbes, population genetics, and modeling to inform best management practices." PI: S. Mangan, A-State, CoPIs: T. Marsico, J. Nowlin, D. Soteropoulos (Arkansas Natural Heritage Commission), J. Blackstock (USDA) 2023 – 2026, Total $602,566, J. Nowlin salary ($18,962). submitted Oct 2022 [not funded]

NASA EPSCoR, "Investigating Extreme Weather Impacts on Agriculture using Pixel-based Time Series Analysis with Multiple Satellite Platforms." PI: K. Hudson, UALR NASA HQ, Sci I A Shew, 2023 – 2025, Total: $650,000; U of A CAST Co Is: A Shew, C Angel, Z Ahmed, O Obembe ($470,000); A-State Subaward Co I: John Nowlin ($79,960). [not funded]

USDA-ARS, (Sustainable Water Management Research Unit: Stoneville, MS) + Arkansas State NACA 58-6066-1-041. "Improving Modeling of the Agroecosystem in the Lower Mississippi River Basin." USDA PI Christopher D Delhom, AState PI_1 Ahmed Hashem (Fall 2021) & PI_2 John Nowlin (Spring 2021-July 2025), Aug 2021 to July 2025. $291,690

NASA Remote Sensing of Water (ROSES) 2021, "Investigating land use impacts on water quality with multi-platform Earth Observation Systems in the Ozark Plateau and Mississippi Alluvial Plain" PI Aaron Shew, Co Is: Joshua M. Blackstock, Brian Haggard, John Nowlin, Michele Reba, 2022 – 2024 Total $650,000; A-State PI John Nowlin ($48,522). [not funded]

USDA-ARS (Delta Water Management Research: Jonesboro, AR) + Arkansas State NACA: 58-6024-1-005. "Preserving Groundwater for Agriculture in the Lower Mississippi Basin." Micro-topographic modeling in low relief irrigated agricultural fields. Jun & Jul 2022 + 15 May 2023 – 15 Aug 2023. $37,855 + overhead.

Arkansas Soil Testing and Research Fund. "Optimizing Fertilizer Management in Arkansas Cotton in Rotation with Peanut." PI Wilson, C, T.G. Teague, J. Nowlin. 2021 – 2023. $60,000.

American Conservation Experience: USFWS Directorate Fellows Program. "Using ArcGIS Pro to examine landscape factors for Pondberry restoration" (DFP-LR4-14). PI Steven Rimer (USFWS); Lead A-State Collaborator and Intern Mentor: John W Nowlin, Graduate Student Intern: Valerie Kearny. May – Jul 2021. $540/week x 11 = $5,940

USDA- NIFA, Capacity Building for Non-Land Grant Colleges of Agriculture (NLGCA). Funding Opportunity: USDA-NIFA-NLGCA-007392. UEI: 0735100670000 "Managed Aquifer Recharge of the Mississippi River Valley Alluvial Aquifer: Advancing Agro-Hydro-GIS Research in the Delta" PD: John W Nowlin, CoPDs: Deborah L Leslie, Nicolas E. Quintana Ashwell. $748,996. Submitted Oct 2020 [not funded]

Swords to Plowshares Agro-Applications Exploration & Development (SPAED) Project, in the Arkansas Mississippi River Alluvial Plain, Cooperative Research and Development Agreement between Meta Special Aerospace and Arkansas State University. Jul 2020 – Dec 2020. PI: John W. Nowlin, CoIs: Michele Reba, Joseph Massey. $46,906. Jul 2020. https://www.astate.edu/news/nowlin-is-conducting-high-tech-agricultural-research

Arkansas Rice Research and Promotion Board proposal. "Development of Tutorials on Levee/Spot sUAS Weed Control & Nutrient Application" PIs: John W. Nowlin, Ahmed Hashem; CoIs: Jason Davis, Tim Burcham, Ed Brown, Aaron Shew. $60,500. Submitted Nov 2019 [not funded]

USDA- NIFA, CFDA 10.326 Capacity Building for Non-Land Grant Colleges of Agriculture (NLGCA). Funding Opportunity: USDA-NIFA-NLGCA-006780. "Managed Aquifer Recharge

of the Mississippi River Valley Alluvial Aquifer: Advancing Agro-Hydro-GIS Research and Training in the Delta" PD: John W Nowlin, CoPDs: Deborah L Leslie, Nicolas E. Quintana Ashwell. $749,911. Submitted October 2019 [not funded]

A-State Faculty Research Awards Committee (FRAC) faculty research award. PI: John W Nowlin. $5000. Jul 2019.

Resilient Agricultural Systems in the Arkansas Delta (RASAD) - University of Arkansas Division of Agriculture: Arkansas State University Research Unit (XASU). PI: JW Nowlin, CoPIs: Michele Reba, Joe Massey, Mary Yaeger. located at: Arkansas State University and USDA-ARS Jonesboro. $60,860. Jul 2019 – Jun 2021.

USDA-ARS (Delta Water Management Research: Jonesboro, AR) + Arkansas State NACA: 58-6024-6-006 & "Preserving Groundwater for Agriculture in the Lower Mississippi Basin." Lidar based topographic modeling to detect on-farm surface water reservoirs and rice levees. Jun 2019 – Aug 2021. $42,485 + overhead.

AR NSF EPSCorR Track 1 – G2F Maize. "Integrated Data Enabled Architecture (IDEA): Predicting More Resilient Corn Hybrids for Arkansas". Argelia Lorence (PI), Co-PIs: Elizabeth Hood, Steven Green, Aaron Shew, John Nowlin, and Ahmed Hashem. $100,000. Submitted Jan 2019 [not funded]

Secondary Research & Teaching Affiliations

Affiliated Faculty, Data Science/Data Analysis B.S. Program, Arkansas State University (2021 – present)

Affiliated Researcher, University of Arkansas Division of Agriculture, Arkansas State University Research Station (XASU), Jonesboro, AR (2019 – 2024)

Affiliated Researcher, United States Department of Agriculture-Agricultural Research Service, Delta Water Management Research Unit, Jonesboro, AR (2019 – present)

Affiliated Faculty, Environmental Science PhD. & M.S Program, Arkansas State University (2019 – present)

Scholarly Review

Reviewer for GeoJournal, (Dec 2023 – present) https://link.springer.com/journal/10708

Reviewer for Southern Studies, (Feb 2022) https://cjhss.nsula.edu/southern-studies/

Reviewer for The Geographical Bulletin, Gamma Theta Upsilon, (2021 – present) https://www.gammathetaupsilon.org/geographical-bulletin.html

Internal Reviewer for USDA-ARS Delta Water Management Research Unit, Jonesboro AR (2020 – present) https://www.ars.usda.gov/southeast-area/jonesboro-ar/delta-water-management-research/

Invited External Examiner for master's research thesis by Paula Pipan "Effect of fine scale spatial climate variability on modelled and observed grapevine phenology" School of Agriculture and Wine Science, Charles Sturt University, Wagga Wagga, NSW, Australia., Andrew Hall Advisor. (May 2020). $278

Reviewer for Applied Geography, Elsevier, (2020 – present) https://www.journals.elsevier.com/applied-geography

Reviewer for International Journal of Applied Geospatial Research, I.G.I. Global, (2019 – present) https://www.igi-global.com/journal/international-journal-applied-geospatial-research/

Presentations

Nowlin, John W. AR Rice Board Meeting, "Survey Results: "Understanding Post-Harvest Practices, Crop Residue Mgmt. & Barriers to Non-Burning Adoption in AR." Brinkley, AR (scheduled for 11 Jun 2026)

Nowlin, John W. Arkansas State Agribusiness Conference. "Non-Burning Post-Harvest Residue Management." Jonesboro, AR (10 Feb 2026)

Nowlin, John W. AR Rice Board Meeting, "Spatial Analysis of crop stubble burning: Optimizing zones to prioritize funding for sustainable post-harvest practices around Jonesboro, AR" Brinkley, AR (17 Jun 2025)

Nowlin, John W. AAG "Spatial analysis of crop stubble burning: optimizing zones to prioritize funding for sustainable post-harvest practices around Jonesboro, AR." Detroit, MI (24 – 28 Mar 2025).

Kosnik, Brendan, 2024. "Field Validation of species distribution models for rare sedges (Carex, Cyperaceae) in eastern Arkansas." Botany 2024 Conference. Grand Rapids, MI, (15 – 19 Jun 2024).

Nowlin, John W. Wine, Beer and Spirits Specialty Group poster, Session: Student Networking Fair. AAG – Honolulu, HI (18 Apr 2024).

Nowlin, John W., Giese, William G. "Viticultural suitability in the Southeastern U.S. across a range of Pierce's Disease risk zones" (paper) AAG – Honolulu, HI (17 Apr 2024)

Nowlin, John W. "West Tennessee AVA Proposal." Tennessee Wine and Grape Board Quarterly Meeting, [virtual] (3 Apr 2024).

Nowlin, J.W. Guest lecture "GIS and Precision Agriculture Program Overview" to class: AGRI 1213 sections 001 & 002. Making Connections in Agriculture. Arkansas State University. 6 Nov 2023.

Nowlin, J.W. "GIS and Precision Agriculture Program Overview." Environmental Sustainability Club Conference, Arkansas State University. 23 Oct 2023

Nowlin, J.W. "Arkansas State University-College of Agriculture's new online program: GIS and Precision Agriculture" (presentation) Arkansas GIS Users Forum Biennial Symposium, Jonesboro, AR. 19 Oct 2023

Nowlin, J.W. Guest lectures on "Geospatial Technology" to class: GEOG 2613 Introduction to Geography. Arkansas State University. 18 & 20 Sep 2023.

Nowlin, J.W. "The Geography of Perry Pears" (paper) AAG – Denver, CO (24 Mar 2023)

Pickett, Richard, John W. Nowlin (presenter), Michele L. Reba, Joseph H. Massey. "Comparison of RTK Relative Elevations between Utility Vehicle collected points and an sUAS collected photogrammetric surface of a cotton field in Eastern Arkansas." (paper), SEDAAG – Atlanta, GA, Georgia Tech. (20 – 21 Nov 2022)

Dill, T, A. Shew, J Nowlin, J Massey, M. Reba. "Remote sensing of winter flooded agricultural fields for migratory birds in the Mississippi Alluvial Plain" (presentation) Soil and Water Conservation Society. International Annual Conference. Denver, CO (31 Jul – 3 Aug 2022)

Nowlin, J.W. "New Pierce's Disease Resistant Grape Varieties: Implications for Southeastern Viticulture" (paper) AAG – NY, NY [virtual] (25 Feb – 1 Mar 2022)

Teague, T.G., N.R. Benson (presenter), and J.W. Nowlin. 2022. Thrips injury, seeding rate, and cover crop management effects on maturity and yield of Midsouth cotton. Beltwide Cotton Conference, San Antonio, TX (4 – 6 Jan 2022)

Daniel Shults, John W. Nowlin (presenter), Michele L. Reba, Joseph H. Massey. "Automated Modeling of on-farm Reservoirs using NAIP and LiDAR derived DEMS" (paper), SEDAAG – Florence, AL. (21 – 22 Nov 2021)

Nowlin, J.W. "Identifying Arkansas Vineyard Sites using GIS" (invited presentation) Arkansas Association of Grape Growers: Annual Meeting – Rusty Tractor Vineyards, Little Rock, AR (4 Nov 2021)

Nowlin, J.W. "Agro-spatial Research Topics in Soils, Crops & Precision Irrigation with GIS & Remote Sensing via Satellites, Airplanes and Drones" (invited presentation) Arkansas General Assembly, Senate & House Joint Committee on Agriculture, Forestry, and Economic Development – met in Jonesboro, AR (21 Oct 2021)

Nowlin, J.W (co-presenter), Daniel Shults (co-presenter). "Model for Irrigation Reservoir Detection in the Arkansas Delta" 1:(presentation), Arkansas GIS Virtual Symposium. (16 Sep 2021) to be posted at:
(57:50 – 1:27:50) https://www.youtube.com/watch?v=zaKo4aCP7m4

Nowlin, J.W. "Mapping Viticultural Suitability in Arkansas AVAs and Vineyards," invited presentation, Arkansas GIS User's Forum: May Webinar [virtual]. (19 May 2021) https://www.youtube.com/watch?v=RQCdluSjMSE&t=605s

Nowlin, J.W. "Viticultural Site Selection in The South … a mostly raster approach" (invited presentation) University of Southern Mississippi | School of Biological, Environmental, and Earth Sciences, Colloquium – Hattiesburg, MS [virtual]. (23 Apr 2021)

Nowlin, J.W. "Arkansas Viticultural Site Suitability" (paper) AAG – Seattle, WA [virtual]. (7 – 11 Apr 2021)

Teague, T.G., A.M. Mann, A.J. Baker, N.R. Benson, J.W. Nowlin. 2021. Interactions of Nitrogen Fertilizer, Cotton Seeding Rate, and Late Season Insecticide for Tarnished Plant Bug Control in Midsouth Cotton. Beltwide Cotton Conference, Virtual, 5 – 8 Jan 2021.

Daniel D. Shults (presenter), John W. Nowlin, Michele L. Reba, Joseph H. Massey, Mary A. Yaeger. "Modeling Technique for Reservoir Identification in Eastern Arkansas" (paper) AAG – Seattle, WA [virtual]. (7 – 11 Apr 2021)

Daniel D. Shults (presenter), John W. Nowlin, Michele L. Reba, Joseph H. Massey, Mary A. Yaeger. "Modeling Technique for Reservoir Identification in Eastern Arkansas" (poster) Arkansas Soil and Water Education Conference, A-State – Jonesboro, AR [virtual]. 27 Jan 2021.

Brittany Singleton (presenter), Jennifer Bouldin, John W. Nowlin. "Riparian Land Use Along Two Sections of the Bayou DeView River, Arkansas" (poster) Arkansas Soil and Water Education Conference, A-State – Jonesboro, AR [virtual]. 27 Jan 2021.

Teague, T.G., A. Mann, A.J. Baker, N.R. Benson, and J. Nowlin. 2020. Factors Affecting Tarnished Plant Bug Spatial Dispersion Patterns and Feeding Injury Associated in Mid-south Cotton -- Implications for Zone Management. 2020 Entomological Society of America Annual Meeting [virtual], 17 – 20 November 2020.

Daniel Shults (presenter), John W. Nowlin, Mary A. Yaeger, Joseph H. Massey, Michele L. Reba. "A spatiotemporal analysis quantifying the need for more on-farm reservoirs to reduce groundwater use in the Cache and L'Anguille River Regions in Northeastern AR." (poster) ESRI User Conference, San Diego, CA [virtual]. (13 – 16 Jul 2020)

Daniel Shults, (John Nowlin, Mentor), "A Spatiotemporal analysis of surface water installation in the Cache and L'anguille river regions of Northeastern Arkansas." *Create @ STATE*: Arkansas State University, Jonesboro, AR [virtual]. (21 Apr 2020) -Awarded Best Agriculture Graduate Poster.

Jessica L. Krob, (T.G. Teague and J.W. Nowlin, Mentors). "Spatial variability of plant injury and response from *Lygus lineolaris* feeding in Mid-South cotton." *Create @ STATE:* Arkansas State University, Jonesboro, AR [virtual]. (21 Apr 2020) -Awarded Best Agriculture Undergraduate Poster.

Nowlin, J.W. Daniel D. Shults, Joseph H. Massey, Michele L. Reba, Mary A. Yaeger. "Potential Infiltration Gallery Locations in the Cache River Critical Groundwater Area" (paper), AAG – Denver, CO (6 Apr 2020) [event canceled]

Jessica L. Krob (presenter), A.J. Baker, T.G. Teague1, J.W. Nowlin. "Influence of Seeding Rates and Termination Timing of Winter Crops on Pest Abundance in Midsouth Cotton" (poster):
- Awarded Best Undergraduate Poster: *Arkansas Soil & Water Education Conference:* Arkansas State University, Jonesboro, AR. (29 Jan 2020).
- Selected to represent Arkansas State University: *Undergraduate Research Posters at the Arkansas State Capitol:* Capitol Rotunda, Little Rock, AR (20 Feb 2020).
- Selected to represent Arkansas State University: *National Council on Undergraduate Research:* Bozeman, MT. (25 – 28 Mar 2020). [event canceled]

Daniel Shults (presenter), and J.W. Nowlin. "History of reservoirs in the Upper Cache and L'Anguille River Basins of Arkansas". (poster) Arkansas Soil and Water Education Conference, Arkansas State University, Jonesboro, AR (29 Jan 2020)

Teague, T.G., J.L. Krob, J. Nowlin, A.J. Baker, and N.R. Benson. 2020. On-farm evaluation of reduced cotton seeding rates in a Mid-South system incorporating a cereal rye winter cover crop with different termination timings. Beltwide Cotton Conference, Austin, TX. (7 – 10 Jan 2020).

Nowlin, J.W (presenter), Michele L. Reba, Joseph H. Massey, Daniel D. Shults, Mary A Yaeger. "Identifying fine structural features within the low relief of the Cache Critical Groundwater Area" (paper), SEDAAG – Wilmington, NC. (24 Nov 2019)

Nowlin, J.W (presenter), Joseph H. Massey, Daniel D. Shults. "Meter Resolution, Within Field Topographic Pattern Analysis" (presentation) Arkansas GIS Users Forum Biennial Symposium, Eureka Springs, AR (31 Oct 2019)

Daniel D. Shults (presenter), John W. Nowlin, Mary A. Yaeger, Joseph H. Massey, Michele L. Reba. "A method of quantifying the need for more on-farm reservoirs to reduce groundwater use in the Cache River and L'Anguille Region of Northeastern AR" (poster) Arkansas GIS Users Forum Biennial Symposium, Eureka Springs, AR (31 Oct 2019)

Richard Pickett (presenter), John W. Nowlin, Ahmed Hashem, Mike Hamilton, Scott Matthews. "Managing Irrigation Design with sUAS Technology and GIS" (poster) Arkansas GIS Users Forum Symposium, Eureka Springs, AR (31 Oct 2019)

"PhDs and the academy" Panel Discussion: Jenny Berggren (Discussant), Linda Kennedy, John W. Nowlin, Jason T. Ortegren, John Stehlin. University of North Carolina Greensboro, NC (18 Oct 2019)

Ahmed Hashem, John W. Nowlin, and Edward Brown, "Presentation of A-State College of Agriculture: Ag. Systems Technology and Plant and Soil Science Hands-on Display of Technical Field Equipment for Teaching and Student Research projects to Senator John Boozman" (presentation) University Teaching and Research Farm, Jonesboro, AR (28 Aug 2019)

Ahmed Hashem and John Nowlin, "Agricultural Applications using Unmanned Aircraft Vehicles" (presentation) Arkansas High School Agriculture Teachers Professional Development, University of Arkansas Community College Batesville (UACCB), Batesville, AR (27 Jun 2019)

Jessica L. Krob., K.D. Wilson, J.W. Nowlin, and T.G. Teague. 2019. Geospatial Variability and Cotton Production --Profitability in a Northeast Arkansas Field. Create @ STATE (17 Apr 2019) Arkansas State University, Jonesboro, AR.

Nowlin, J.W. (presenter), Ahmed Hashem, Steve Green, Joe Massey. "Integrating multi-sensor UAS into irrigation research in Eastern Arkansas" (presentation) AAG Conference – Washington, D.C. (4 Apr 2019)

Nowlin, J.W., Aaron Shew, and Ahmed Hashem, "Agricultural Systems Technology – New Curriculum" (presentation) Arkansas GIS User Forum Spring Meeting, UALR, Little Rock, AR. (20 Mar 2019)

Nowlin, J.W., "Updates to Agricultural Systems Technology Curriculum" (presentation) Learn@State: Arkansas State University, Jonesboro, AR (13 Mar 2019)

Nowlin, J.W. and Ahmed Hashem, "Agricultural Systems Technology – New Curriculum, Unmanned Aircraft Systems in Agriculture" (presentation) High School Teachers, Career and Leadership Development, Future Farmers of America, Arkansas State University, Jonesboro, AR (6 Mar 2019)

Nowlin, J.W. "From North Carolina Wine to Arkansas Rice, Geospatial Applications in Environmental Modeling & A-State Agricultural Systems Technology Program" (presentation), University Rotary Club - Jonesboro, AR (21 Feb 2019)

Teague, T.G., K.D. Wilson, N.R. Benson, H. Campbell, J. Nowlin, and B. Robertson. 2019. Seeding rate and winter cover crop effects on maturity and yield of Arkansas cotton. Beltwide Cotton Conference, New Orleans, LA, 8 – 10 Jan 2019.

Jessica L. Krob, Kyle D. Wilson, John W. Nowlin, Tina G Teague. "Within Field Spatial Variability of Cotton Productivity Associated with Soil Texture, Irrigation, and Pest Management Practices in Northeast Arkansas Field" (poster), *Undergraduate Research Posters at the Arkansas State Capitol:* Capitol Rotunda, Little Rock, AR (20 Feb 2019)

Nowlin, J.W. "Geographic Framework for Terroir and the Wine Region" (poster), AAG Conference – New Orleans, LA (11 Apr 2018)

Nowlin, J.W. "Winegrape Variety Zones in the Southeastern U.S." (paper), SEDAAG – Starkville, MS (20 Nov 2017)

Nowlin, J.W. and Rick L. Bunch. "New Pierce's Disease Resistant Grape Varieties: The Implications for the Southeastern U.S. Wine Industry" (paper), AAG Conference – Boston, MA (5 Apr 2017)

Nowlin, J.W. "Viticultural Site Selection Effectiveness in North Carolina: Contrasting Cooperative Extension Guidance and Wine Grower Behavior" (paper), SEDAAG – Columbia, SC (21 Nov 2016)

Nowlin, J.W. "Geography of Wine in North Carolina: Geospatial Concepts Applied to Physical Terroir" (poster & paper), XI International Terroir Congress – McMinnville, OR (14 Jul 2016)

Rick Bunch, John W. Nowlin, Matthew Balentine. GIS Workshop with Guilford County Schools Employees, Greensboro, NC (23 – 27 May 2016)

Nowlin, J.W. "North Carolina Terroir(s)" (paper) AAG Conference – San Francisco, CA (31 Mar 2016)

Nowlin, J.W. "Boundary Interpretations of American Viticultural Areas within North Carolina" (paper), SEDAAG Conference – Pensacola, FL (24 Nov 2015)

Nowlin, J.W. "North Carolina Viticultural Geography Considerations in Site Suitability" (student paper competition – *won 2nd place)*; AAG Conference – Chicago, IL (22 Apr 2015)

Nowlin, J.W. "North Carolina Viticultural Site Suitability" (presentation) NC Wine Growers Association (NCWA) Annual Meeting – Winston-Salem, NC (Feb 2015)

Nowlin, J.W. "A Mesoscale Geophysical Capability/Suitability Model for *Vitis vinifera* Vineyard Site Selection in the North Carolina Piedmont Triad Region, Case Study: Rockingham Co. NC."
(poster), 2013 Graduate Research EXPO, UNCG (13 Mar 2013)
(paper), American Society of Enologists and Viticulturists Eastern Section 38th Conference – Winston-Salem, NC (18 Jul 2013)
(paper), SEDAAG Conference – Roanoke, VA (24 Nov 2013)

Nowlin, J.W. "Pierce's Disease Risk within Yadkin Valley AVA of North Carolina: A GIS Approach to Climate Change and Implications of Risk: 1972 – 1997 & 1997 – 2005" (poster), SEDAAG Conference – Asheville, NC (20 Nov 2012)

Service – Committees, Appointments, Activities

Professional

Past President, AAG Geography of Wine, Beer, and Spirits Specialty Group (2024 – 2026)
President (Chair), AAG Geography of Wine, Beer, and Spirits Specialty Group (2022 – 2024)
Board Member, Arkansas Geographic Information Systems Board (Governor appointed; 2021 – present)
Executive Committee Member, Arkansas GIS Users Forum (2020 – present)
Member, American Association of Geographers (AAG; 2013 – 2025)
Vice President/Secretary/Treasurer, Member Geography of Wine, Beer, and Spirits Specialty Group (2014 – 2022)
American Geophysical Union (AGU; 2025 – present)
Member, North Carolina Winegrowers Association (2013 – 2018)
Member, Southeastern Division of the AAG (SEDAAG; 2009 – 2023)

American Association of Geographers (AAG):
Session Chair: AAG Conference Session "Wine, Beer and Spirits Specialty Group Business Meeting." Honolulu, HI (17 Apr 2024)
Session Chair: AAG Conference Session "Mixed Drinks I: Viticulture, Agriculture, Alcohol Culture." Honolulu, HI (17 Apr 2024)
Session Chair: AAG Conference Session "Legal definitions of wine and place, appellations of origin: the American Viticultural Area (AVA)." Honolulu, HI (16 Apr 2024)
Session Chair: AAG Conference Session "Wine, Beer and Spirits Specialty Group Business Meeting." Denver, CO (24 Mar 2023)
Session Chair: AAG Conference Session "Mixed Drinks 2: Crafting Geographies and Cultures of Beer, Cider and Spirits." Denver, CO (24 Mar 2023)
Session Chair: AAG Conference Session "Mixed Drinks 1: Wine, Perry, Kelp Seltzer, and other Beverage Geographies." Denver, CO (24 Mar 2023)
Session Chair: AAG Conference Session "Mixed Drinks I: Rural Wines and Urban Beers? Understanding Viticulture and Brewery Locations." Seattle, WA [virtual] (9 Apr 2021)
Session Chair: WBSSG, "Meet the Expert: Greg Jones on the Variability and Sustainability of Climate, Grapes and Wine," AAG Conference. Seattle, WA [virtual] (7 Apr 2021)
Session Chair: AAG Conference Session "UAS Symposium I: Structure from Motion for Forestry and Natural Resources." Washington, DC (4 Apr 2019)
Student Rep: Geographies of Wine, Beer, & Spirits (WBSSG) (2016 – 2017)

Southeastern Division of the AAG (SEDAAG):
Session Chair: SEDAAG Conference Session "GIS & Remote Sensing." Florence, AL (Nov 2021)
Conference Volunteer: SEDAAG Conference Athens, GA (23 – 25 Nov 2014)

Arkansas GIS Users Forum:
Session Chair: Arkansas GIS Users Forum Biennial Symposium, Jonesboro, AR. 19 Oct 2023
Panel Member: 2021 GIS Day Webinar. Arkansas GIS User's Forum. [virtual] https://www.youtube.com/channel/UCEeTr7F-NQkeGrKc2PJVE2Q (17 Nov 2021)

Arkansas State University
Member, Course Evaluation Committee (2026 – present)
Member, [Faculty] Equity Committee (2024 – 2026)
Secretary, Computers and Technology Committee (2024 – 2026)
Member, Faculty Research Awards Committee (2023 – 2025)
Member, Sustainability Certificate Committee (2022 – 2026)

Member, Computers and Technology Committee (2021 – present)
Member, Data Science/Data Analytics Steering Committee (2021 – present)
Member, Environmental Science Committee (2021 – 2025)
Member, Advisory Board of the Criminology, Sociology and Geography Department in the College of Liberal Arts and Sciences (2021 – 2023)
ASU System ESRI License Administrator (2019 – present)
Member, Red Wolf Works Committee, formerly Creative Commons (2020 – 2022)
Member, Data Science\Data Analytics Program Committee (2019 – 2022)
Member, Undergraduate Admissions Appeals Committee (2018 – 2024)
Member, Learning Management System (LMS) Task Force (2018 – 2019)
Member, Academic Integrity Task Force (2018 – 2019)

College of Agriculture

Co-Chair, Online Committee (2024 – 2025)
Chair, Post Doctoral Researcher Hiring Committee (2023 – 2024)
Chair, Agricultural Water Management/Remote Sensing Hiring Committee (2022 – 2023)
Chair, GIS Online Instructor Hiring Committee (2022 – 2023)
Chair, Ag Studies Online Instructor Hiring Committee (2022)
Member, Graduate Curriculum and Policy Committee (2024 – present)
Member, Assessment Committee (for GIS & PA Program and Certificates) (2023 – 2026)
Member, Plant and Soil Science Instructor Hiring Committee (2022)
Member, Self-Study Committee (2022 – 2023)
Member, Access & Engagement (2022 – present)
Chair, Strategic Planning Committee (2020 – 2022)
Member, Communications Committee (2020 – present)
Member, Research Committee (2020 – 2022)
Member, Dean of Agriculture Search Committee (2019 – 2020)
Sponsoring Faculty Member, Agricultural Systems Technology Club, (2019 – 2020)
Member, Scholarships (2019 – present)
Member, Internship Committee (2018 – 2025)

Community

Member, Judd Hill Farmers Market Committee (2022 – 2025)
Member, Oakland High School Class of 1992, 30th Reunion Planning Committee (2022)
Member, Advisory Group of Northeast Arkansas Career and Technical Center Drones Program – Jonesboro Public Schools (2021 – 2025)

Arkansas State University Recruiting & Community Outreach Events:

ESRI User Conference Academic Fair (recruiting) – San Diego, CA (15 Jul 2024)
Sunken Lands Summer Camp, GIS PA Presentation (4 Jun 2024)
World Culture Food Day, Judd Hill Farmer's Market (17 Nov 2023)
Chili Cookoff & Costume Contest (31 Oct 2023)
Pack Preview (21 Oct 2023)
CoA Alumni Event, Judd Hill Farmer's Market (21 Oct 2023)
Bill and Alice Nix Farm Day (14 Oct 2023)
ArkACRAO College Fair (16 Oct 2023)
Sunken Lands Summer Camp, GIS PA Presentation (21 Jun 2023)
UAPB Ag. Discovery Tour, GIS PA Presentation (19 Jun 2023)
New Student Orientation (25 May 2023)

Northeast Rice Research and Extension Center (NERREC) Groundbreaking (9 May 2023)
A-State Petting Zoo (22 Apr 2023)
Junior Jumpstart, Red Wolf Center (15 Apr 2023)
CoA Honors Banquet (11 Apr 2023)
Ag Student Group Visit (18 Jan 2023)
High School Recruiting Event, A-State Arena (17 Oct 2022)
A-State Petting Zoo (15 Oct 2022)
Farmer's Market, Market Manager Booth Helper, (17 Sep; 24 Sep; 22 Oct 2022)
Rich, J. & J.W. Nowlin "A-State College of Agriculture programs" Farm Bureau – Agricultural Youth Leadership Seminar (6 Jul 2022)
Flood, Farming, and Fun Agriculture Camp (22 Jun 2022)
New Student Orientation (26 May 2022)
A-State Petting Zoo (23 Apr 2022)
Annie Camp & McArthur Junior High Robotics Club visit (22 Apr 2022)
FFA competition- Plant Science (9 Mar 2022)
Pack Preview (6 Nov 2021)
A-State College Fair (18 Oct 2021)
Pack Day – College Preview (4 Sep 2021)
FFA Meet and Greet (26 Apr 2021)
College Preview Day (21 Nov 2020)
Transfer Partners Conference Zoom (16 Oct 2020)
Select A Major Fair (30 Sep 2020)
Agriculture Expo Black River Technical College (7 Feb 2020)
Memphis Farm and Gin Show (28 Feb 2020)
Pack Preview Day (26 Oct 2019)
New Student Orientation (3 Jun and 19 Jun 2019)
Valley View High School Career Fair (29 Mar 2019)
Arkansas-Eastern District FFA Career Development Event (6 Mar 2019)
Agriculture Appreciation Expo Black River Technical College (15 Feb 2019)
Pack Preview Day (6 Oct 2018)
Select A Major Fair (3 Oct 2018)

Professional Development

Arkansas State Agribusiness Conference (10 Feb 2026)
National Conservation Systems Cotton & Rice Conferences (5 – 6 Feb 2026)
Arkansas Rice Annual Meeting, NERREC, Greenfield, AR (4 Feb 2026)
Arkansas Soil and Water Education Conference (14 Jan 2026)
Presentation about GIS to EAST Students, Douglas MacArthur Jr. High (16 Dec 2025)
USA Rice Outlook Conference, New Orleans, LA (7 – 9 Dec 2025)
AR GIS Board Meeting, Eureka Springs, AR (Oct 14 – 16 2025)
NERREC Rice & Row Crop Field Day (31 Jul 2025)
ESRI User Conference (14 – 18 Jul 2025)
ESRI Education Summit (12 – 14 Jul 2025)
AR GIS Board Meeting, AGFC Delta Rivers Nature Center, Pine Bluff, AR (4 Jun 2025)
AState Grant Writing Intensive Workshop (14 – 20 May 2025)
American Association of Geographers (AAG) Annual Conference – Detroit, MI (24 – 28 Mar 2025).
EAST Conference (18 – 20 Mar 2025)

AR GIS Board Meeting, Little Rock, AR (5 Mar 2025)
Arkansas Soil and Water Education Conference (29 Jan 2025)
Arkansas GIS User Forum Meeting, Jacksonville, AR (20 Nov 2024)
Arkansas Southern Soil Health: profitability in unprofitable times Conference, Jonesboro, AR (13 – 14 Nov 2024)
USDA-ARS Sustainable Water Management Office Visit and Groundwater Transfer Injection Pilot project tour. Stoneville, MS (25 Oct 2024)
Bayou Meto Water Management Pump House tour and Laudies Brantley Farm visit, Lonoke County, AR (24 Oct 2024)
ESRI User Conference – San Diego, CA (15 – 19 Jul 2024)
ESRI Education Summit – San Diego, CA (13 – 17 Jul 2024)
National Conservation Systems Cotton and Rice Conference, Jonesboro, AR (30 – 31 Jan 2024)
Arkansas Soil and Water Education Conference, Jonesboro, AR (29 Jan 2024)
Arkansas GIS User Forum Symposium, Jonesboro, AR (16 – 20 Oct 2023)
Soil and Water Conservation Workshop, NERREC and Judd Hill (22 Sep 2023)
ESRI User Conference – San Diego, CA (10 – 14 Jul 2023)
ESRI Education Summit – San Diego, CA (7 – 10 Jul 2023)
Arkansas Discovery Farms & Anheuser-Busch Rice Production Field Day (20 Jun 2023)
A-State Agricultural Business Conference, Jonesboro, AR (8 Feb 2023)
Arkansas Soil and Water Education Conference, Jonesboro, AR (25 Jan 2023)
Water Summit, ASU System Office, Little Rock, AR (11 – 12 Aug 2022)
U.S. Senate Agriculture, Nutrition & Forestry Panel, "2023 Farm Bill: Perspectives from the Natural State," A-State Fowler Center Jonesboro, AR (17 Jun 2022)
Judd Hill Cotton Field Day (22 Jun 2022)
Heifer Ranch Collaboration Exploration Meeting (2 May 2022)
Pedagogy Exchange Series – College of Agriculture, Jonesboro, AR (Spr 2022)
ESRI User Conference – San Diego, CA (11 – 15 Jul 2022)
ESRI Education Summit – San Diego, CA (9 – 12 Jul 2022)
Arkansas GIS User Forum, Benton, AR (6 Apr 2022)
Arkansas Soil and Water Education Conference [virtual] (26 Jan 2022)
Arkansas Soil and Water Education Conference [virtual] (27 Jan 2021)
Arkansas Soil and Water Education Conference (29 Jan 2020)
Agricultural Conservation Planning Framework meeting, USDA-ARS Jonesboro, AR (11 Dec 2019)
Mississippi County Water Management Field Day, Burdette, AR (5 Aug 2019)
RiceTec Arkansas Field Day, Harrisburg, AR (6 Aug 2019)
ESRI User Conference – San Diego, CA (8 –12 Jul 2019)
ESRI Education Summit – San Diego, CA (6 – 9 Jul 2019)
Non-Land-Grant Agricultural and Renewable Resources Universities (NARRU): Delta Tour, Jonesboro-Osceola-Dyess-Wilson, AR (10 Sep 2018)
Mississippi County Water Management Field Day, Osceola, AR (6 Aug 2018)
RiceTec Arkansas Field Day, Harrisburg, AR (7 Aug 2018)
ESRI Education GIS Conference – San Diego, CA (8 –11 Jul 2017)
ESRI User Conference – San Diego, CA (10 – 14 Jul 2017)
ESRI User Conference – San Diego, CA (27 Jun – 1 Jul 2016)
XI International Terroir Congress – Post Congress Appellations Tour – selected Oregon & Washington vineyards (10 – 14 Jul 2016)
ESRI User Conference – San Diego, CA (27 Jun – 1 Jul 2015)

Honors & Achievements

AState CoA "Souper" Friday Best Soup Award (2026) "my favorite award"
Outstanding Team Awards, Arkansas State University, College of Agriculture (2023 & 2024)
Outstanding Teaching Award, Arkansas State University, College of Agriculture (2021)
Certificate of Recognition for contributions to student success and advising, A-State College of Agriculture, (2021)
1st Place in Social Sciences – UNCG Graduate Research EXPO (Apr 2013)
UNCG Student Representative to Graduate Day at NC General Assembly (May 2013)
World Geography Bowl – 4-year member of North Carolina State Team
SEDAAG Conference Pensacola, FL (2015)
SEDAAG Conference Asheville, NC (2013)
SEDAAG Conference Birmingham, AL (2010)
SEDAAG Conference Knoxville, TN (2009) *undergraduate MVP*
Phi Beta Kappa – Liberal Arts Honor Society (2010)
Gamma Theta Upsilon – International Geographic Honor Society (2010)

Professional Certifications

Certified GIS Professional (GISP) Cert.# 90584, GIS Certification Institute, (Apr 2015 – present)
FAA Part 107 Remote Pilot License, Small Unmanned Aircraft Systems, (Jun 2019 – Jun 2023)

Student Research & Mentorship

Post Doctoral Advisor:
Post Doctoral Research Associates Funded on USDA-ARS, (Sustainable Water Management Research Unit: Stoneville, MS) + Arkansas State NACA 58-6066-1-041. "Improving Modeling of the Agroecosystem in the Lower Mississippi River Basin." USDA PI Christopher D Delhom, AState PI1 Ahmed Hashem (Fall 2021) & PI2 John Nowlin (Spring 2021 – July 2024), Aug 2021 to July 2024. $291,690

Dr. Dilip Roy (2022 – 2023), resulting in the following publications:

Published
Roy, Dilip Kumar, Ahmed A. Hashem, Michele L. Reba, Deborah L. Leslie, and John Nowlin. 2024. "A Maximal Overlap Discrete Wavelet Packet Transform Coupled with an LSTM Deep Learning Model for Improving Multilevel Groundwater Level Forecasts." Discover Water 4 (1): 16. https://doi.org/10.1007/s43832-024-00073-1.
Roy, Dilip Kumar, Deborah L. Leslie, Michele L. Reba, Ahmed A. Hashem, Emily Bellis, and John Nowlin. 2024. "Optimizing the Quantity of Recharge Water into a Sedimentary Aquifer through Infiltration Galleries Using a Surrogate Assisted Coupled Simulation–Optimization Approach." Journal of Hydrology 635 (May): 131183. https://doi.org/10.1016/j.jhydrol.2024.131183.

Dr. Wasim Iqbal (2024 – 2026), resulting in the following publications:

Accepted/In-Press

Iqbal, M. W., Reba, M., Nowlin, J., Massey, J., Leslie, D., & Delhom, C. 2026. "Review of surface water storage and subsurface recharge in declining portions of the Mississippi River Valley Alluvial Aquifer." WIREs Water. https://doi.org/10.1002/wat2.70059.

Submitted

Iqbal, M. W., Reba, M., Nowlin, J., Massey, J., Leslie, D., & Delhom, C. 2025. "Predicting Groundwater Level Response to Recharge through Infiltration Galleries in a Sedimentary Aquifer Using Integrated Machine Learning and MODFLOW Approaches" Journal of Hydrology: Regional Studies. [Submitted 2 May 2026] (rejected for scope, editing for submission to another journal)

In Development

Iqbal, Wasim, Michele L. Reba, John W. Nowlin, Joseph H. Massey, Deborah Leslie, Chris Delhom. 2025. "Optimizing recharge water volume into an alluvial aquifer through infiltration galleries using an Extreme Learning Machine-based predictive optimization framework" Water Resources Management. [planned submission for internal review mid-July 2026]

Iqbal, M. W., Reba, M., Nowlin, J., Massey, J., Leslie, D., & Delhom, C. 2025. "Irrigation Water Management Practices as a Pathway to Groundwater Conservation in the MRVAA: A Review." WIREs Water. [planned for Summer/Fall 2026]

Major Advisor:

Malena Mondragon (2025 – 2026) M.S. Agriculture - Concentration in Digital Agriculture, thesis title, "Characterizing Methane Concentrations and Water Quality in Arkansas Agricultural Irrigation Reservoirs"

Sahadat Hossan (2024 – present) Ph.D. Environmental Science; proposed dissertation title, "Geospatial Tools for Managing Agricultural Resources in the Mississippi Alluvial Plain."

Kamana Kafle (2024 – 2026) M.S. Agriculture, Concentration in Digital Agriculture (non-thesis)

Saroj Bhattarai (2024 – 2026) M.S. Agriculture, Concentration in Digital Agriculture (non-thesis)

Jace P Clark (2024 – 2025) M.S. Agriculture, Concentration in Digital Agriculture (non-thesis)

Mitchell Price (2024 – 2025) M.S. Agriculture, Concentration in Digital Agriculture (non-thesis)

Abhishek LNU (2023 – 2025) M.S. Agriculture, Concentration in Digital Agriculture (non-thesis)

Shohal Shaik (2023 – 2025) M.S. Agriculture, Concentration in Digital Agriculture (non-thesis)

Justin Vestal (2023 – present) M.S. Environmental Science; research related to Managed Aquifer Recharge.

-Awarded the 2nd Place Masters Student Poster Award at the Arkansas Soil & Water Education Conf. (29 Jan 2024)

Thomas "Patrick" Dill (2021– 2024) M.S. Agriculture - Concentration in Digital Agriculture; proposed thesis title, "Quantifying Flooded Agricultural Land for Migratory Birds in the Mississippi Alluvial Plain."

-Awarded the 3rd Place Masters Student Poster Award at the Arkansas Soil & Water Education Conf. (29 Jan 2024)

-Awarded the 2022 Create@State Dean's Award for Graduate Oral Presentation: "Effect of Environmental Factors on Multispectral Bands When Identifying Water in Winter Flooded Agricultural Fields."

Allegra Pieri (2021 – 2023) M.S. Environmental Science; thesis title, "Managed Aquifer Recharge: Installation and Early Evaluation of Infiltration Galleries in the Cache River Critical Groundwater Area, Northeast Arkansas"

-Awarded the American Water Resource Association (AWRA) 2022 Spring Conference Poster Presentation Award

Richard Pickett (2019 – 2022) M.S. Agriculture - Concentration in Digital Agriculture; thesis title, "Comparisons of Small Unmanned Aircraft Systems and Agro-Terrestrial Surveys: Techniques to Determine Field Elevation Surfaces for Irrigation Management."
B.S. Agricultural Studies: Emphasis in Agricultural Systems Technology.
-Awarded Outstanding Graduating Senior Award. 2021, College of Agriculture (May 2021)
-Pickett, R. (presenter), "Drone Elevation Data and Its Practical Use," Arkansas Soil and Water Education Conference. Jonesboro, AR 2021, 27 Jan 2021)
-Awarded the Undergrad. Student Award at the Arkansas Soil & Water Conf. (29 Jan 2020)
-Established P&P Consulting (2019)

Daniel Shults (2019 – 2021) M.S. Agriculture - Concentration in Digital Agriculture; thesis title: "Spatial-Temporal Modeling of Agricultural Water Surface Features in Northeastern Arkansas"
-RASAD Graduate Research Assistant-award recipient "Micro Topography Analysis for Surface Reservoir Detection" (Jul 2019 – Jun 2021)
-Awarded the 2020 Create@State Dean's Award for best graduate poster, "A Spatiotemporal Analysis of Surface Water Installations in the Cache and L'anguille River Regions of Northeastern Arkansas."
B.S. Agricultural Studies: Emphasis in Agricultural Systems Technology

Jessica Krob (2018 – 2020) – B.S.A. - Plant Soil Science program; (co-advisor with Dr. Tina Teague):
-Awarded the best Undergraduate Poster Award at the Arkansas Soil & Water Conf. (29 Jan 2020)
-Awarded the 2020 Create@State Dean's Award for best undergraduate poster, "Spatial variability of plant injury and response from Lygus lineolaris feeding in Mid-South cotton."
-Awarded the 2020 Outstanding Student award for her BSA in Agronomy

Advisory Committee Member:

Samina Akter Lira (2024 – present) M.S. Environmental Science; working on surface water to groundwater using exotic tracers.

Brian Okwiri (2024 – present) Ph.D. Environmental Science, proposed dissertation title, "Phylogenomics and conservation genomics of the Rosyface Shiner, Notropis rubellus, species group."

Jennifer Hinojosa (2024 – 2025) M.S. Agriculture, thesis title, "Cotton Response to Tillage Systems and Irrigation: Interactions with Seeding Rate and Soil Textural Zones."

Patrick Dyer (2022 – 2024) M.S. Environmental Science; thesis title, "Contributions of selected Buffalo River headwaters in Searcy County, Arkansas to downstream water quality, 2019 – 2023"

Ray Benson (2022 – 2023) Ph.D. Environmental Science; dissertation title, "Evaluation of Site-Specific, Zone Management in Northeast Arkansas Cotton"

Melissa Walker (2022 – 2022) M.S. Agriculture, Concentration in Plant and Soil Science (non-thesis)

Brendan Kosnik (2021 – 2024) M.S. Biology, proposed thesis title, "Assessing species distribution models' abilities to predict locations of rare sedges in Eastern Arkansas."

Brittany Singleton (2021 – 2026) Ph.D. Environmental Science, working dissertation title, "Water Quality Monitoring in Cow Lake Ditch-Bayou DeView Subwatershed in the Cache River Watershed, Arkansas."

Sam King (2020 – 2021) M.S. Agriculture, Concentration in Agricultural Business and Economics, thesis title, "A Study of Adoption and Costs of NRCS Avoid, Control, and Trap (ACT) Agricultural Conservation Practices in Arkansas."

Devon Austin – (2020) M.S. Agriculture, Concentration in Plant and Soil Science (non-thesis)

Shauna Taylor (2019) M.S. Agriculture, Concentration in Plant and Soil Science (non-thesis)

Valerie Kearny (2018 – 2021) M.S. Biology, thesis title, "Summer Distribution and Day Roost Characteristics of Eastern Small-Footed Bats (*Myotis leibii*) in the Ouachita Mountains, Arkansas"

Jae Chester (2018 – 2020) M.S. Environmental Science (non-thesis) proposed thesis title, "Correlation of Water Quality Data to Fecal Coliform and Land Use Data in the White River, Arkansas"

Diana Soteropoulos (2018 – present) Ph.D. Environmental Science, proposed dissertation title, "Floristics in Arkansas: surveying and quantifying management impact of rare ecosystems, launching floristic quality assessment, and predicting rare plant distribution."
-hired as Arkansas State Botanist (Spring 2020)

Teaching Interests

geographic information science
cartography
environmental site suitability: climate, soil & topographic surfaces
earth science (physical geography)
regenerative agriculture
niche agricultural site suitability
geographies of wine, beer and spirits
introductory computer systems
basic data applications, spreadsheets and entry-level databases