

John W. Nowlin, PhD GISP

Assistant Professor, College of Agriculture, Arkansas State University, PO Box 1080 State University, AR 72467
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Education

University of North Carolina at 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

University of North Carolina at 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

University of North Carolina at Greensboro

B.A. in Geography *Summa Cum Laud, Phi Beta Kappa* (Dec 2010)

Concentrations in GIScience & Earth Science

Research Interests

topographic modeling, niche agricultural suitability, site selection, terroir, geography of viticulture

Experience

Assistant Professor, College of Agriculture (all 2018 through Spr 2020), Arkansas State:

- Fundamentals of GIS/GPS, AGST 3543 (Fall 2018, Spr & Fall 2019, Spr & Fall 2020)
- Agricultural Spatial Technology I, AGST 3503, *renamed* (Fall 2018)
- Adv. Geographic Information Science, AGST 6543, *renamed* (Spr 2019)
- Adv. GIS for Agriculture & Natural Resources, AGST 4543 *renamed* (Spr 2019 & Fall 2019)
- Agricultural Biosystems II, AGRI 3823 (Spr 2019, 2020)
- Geospatial Data Applications, AGST 3505 (Fall 2019, Spr & Fall 2020)
- Understanding GIS, *AGST 5763 renumbered* AGST 4543/5543 (Fall 2019, 2020)
- Graduate Communication Skills | Professional Writing AGRI 6362 (Fall 2019, 2020)
- Geospatial Data and Models, AGST 6543 (Spr 2020)
- Internships in Agriculture, AGRI 420V (Spr 2020)
- Python Scripting Curriculum Development AGST 489V/501V (Sum 2020)
- Agricultural Systems Technology Capstone AGST 4843 (Fall 2020)
- Applied Geospatial Research 6843 (Fall 2020)

Lecturer, Geography & Environmental & Sustainability Studies Program, UNCG (2017 to 2018):

- Introduction to Earth Science (Spr & Fall 2017, Spr 2018)

- Introduction to Geographic Information Science (Fall 2017, Spr 2018)
- Introduction to Sustainability Studies (Fall 2017, Spr 2018)
- Introduction to Environmental Studies (Spr & Sum 2018)
- Capstone Seminar in Environmental Studies (Fall 2017, Spr 2018)

Systems Developer, National Service – Stiles Machinery (1998 – 2017):

GIS Database Development in ArcGIS: Desktop, Server, and Online; MS Access
Intranet Developer: SharePoint 365 Site Owner
Technical Support & Field Service for Capital Equipment (Industrial 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 Hayer 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

Publications

- Teague, T.G., N. Ray Benson, J. Krob., A. Baker, 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.
- 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. doi: 10.1016/j.apgeog.2019.03.003
- 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. Pp 632-645 In: S. Boyd, M. Huffman, L. Krogman, and A. Sarkissian (Eds.), Proc. of the 2019 Beltwide Cotton Conferences, National Cotton Council, Memphis, TN. <http://www.cotton.org/beltwide/proceedings/2005-2019/data/conferences/2019/papers/19303.pdf>
- 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. pp. 83-88 In: F.M. Bourland (Ed.), Summaries of Arkansas Cotton Research 2018, Arkansas Agricultural Experiment Station Research Series 660. <https://scholarworks.uark.edu/cgi/viewcontent.cgi?article=1155&context=aaesser>
- 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): 38–70. doi: 10.4018/IJAGR.2016070102
- 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*, 482–87. Linfield College, McMinnville OR: Southern Oregon University. <https://www.calameo.com/read/004433976949ab8885344>

Funding

- 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. July 2020-Dec 2020. PI: John W. Nowlin, CoIs: Michele Reba, Joseph Massey. \$46,906. July 2020.
- 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 November 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. [not funded]
- A-State Faculty Research Awards Committee (FRAC) faculty research award. PI: JW Nowlin. \$5000. July 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. \$27,778. June 2019 – Aug 2020
- 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 January 2019 [not funded]

Scholarly Review

- Invited External Examiner for Masters by Research Thesis by Paula Pipan “Effect of fine scale spatial climate variability on modelled and observed grapevine phenology” Charles Sturt University, 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 to present)
<https://www.igi-global.com/journal/international-journal-applied-geospatial-research/1138>

Presentations

- Daniel, Shults, 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, online, (13-16 July 2020)
- John W. Nowlin, 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 (sched. 6 Apr 2020) [submitted, event canceled]

- Daniel Shults 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)
- 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):
1. *Arkansas Soil & Water Education Conference*: Arkansas State University, Jonesboro, AR. (29 Jan 2019). Awarded best Undergraduate Poster
 2. *Undergraduate Research Posters at the Arkansas State Capitol*: Capitol Rotunda, Little Rock, AR (20 Feb 2020) [selected to represent Arkansas State University]
 3. *National Council on Undergraduate Research*: Bozeman, MT. (25-28 Mar 2020) [selected to represent Arkansas State University] event canceled
 4. *Create @ STATE*: Arkansas State University, Jonesboro, AR. (21 Apr 2020) [submitted & scheduled] event moved online
- John W. Nowlin (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)
- John W. Nowlin (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, 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. Ortengren, 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.
- John W. Nowlin (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)
- John W. Nowlin, Aaron Shew, and Ahmed Hashem, “Agricultural Systems Technology – New Curriculum” (presentation) Arkansas GIS User Forum Spring Meeting, UALR, Little Rock, AR. (20 Mar 2019)
- John W. Nowlin, “Updates to Agricultural Systems Technology Curriculum” (presentation) *Learn@State*:Arkansas State University, Jonesboro, AR (13 Mar 2019)
- John W. Nowlin 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)
- John W. Nowlin. “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)
- 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)
- John W. Nowlin. “Geographic Framework for Terroir and the Wine Region” (poster), AAG Conference – New Orleans, LA (11 Apr 2018)
- John W. Nowlin. “Winegrape Variety Zones in the Southeastern U.S.” (paper), SEDAAG – Starkville, MS (20 Nov 2017)
- John W. Nowlin 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)
- John W. Nowlin. “Viticultural Site Selection Effectiveness in North Carolina: Contrasting Cooperative Extension Guidance and Wine Grower Behavior” (paper), SEDAAG – Columbia, SC (21 Nov 2016)
- John W. Nowlin. “Geography of Wine in North Carolina: Geospatial Concepts Applied to Physical Terroir” (poster & paper), XI International Terroir Congress – McMinnville, OR (14 July 2016)
- Rick Bunch, John W. Nowlin, Matthew Balentine. GIS Workshop with Guilford County Schools Employees, Greensboro, NC (23-27 May 2016)
- John W. Nowlin. “North Carolina Terroir(s)” (paper) AAG Conference – San Francisco, CA (31 Mar 2016)
- John W. Nowlin. “Boundary Interpretations of American Viticultural Areas within North Carolina” (paper), SEDAAG Conference – Pensacola, FL (24 Nov 2015)
- John W. Nowlin. “North Carolina Viticultural Geography Considerations in Site Suitability” (student paper competition – *won second place*); AAG Conference – Chicago, IL (22 Apr 2015)
- John W. Nowlin. “North Carolina Viticultural Site Suitability” (presentation) NC Wine Growers Association (NCWA) Annual Meeting – Winston-Salem, NC (Feb 2015)
- John W. Nowlin. “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 July 2013)
- (paper), SEDAAG Conference – Roanoke, VA (24 Nov 2013)
- John W. Nowlin. “Pierce's Disease Risk within Yadkin Valley AVA of North Carolina: A GIS Approach to Climate Change and Implications of Risk: 1972 to 1997 & 1997 to 2005” (poster), SEDAAG Conference – Asheville, NC (20 Nov 2012)

Service

Institution

- Member, Creative Commons Committee (2020 – present)
- College of Agriculture, University Rep for the Data Science Planning Committee (2019 – present)
- College of Agriculture, Member, of the Ag. Dean Search Committee (2019 – 2020)
- Member, Environmental Science Committee (2019 – present)
- College of Agriculture, Member, Recruitment & Retention Committee (2019 – present)

College of Agriculture, University Rep for the LMS Task Force (Sep 2018 – Feb 2019)
College of Agriculture, University Rep for the Undergraduate Admissions Appeals Committee
(Jul 2018-present)
College of Agriculture, University Rep for the Academic Integrity Task Force (Oct 2018 – Feb
2019)
College of Agriculture, Member, Internship Committee (2018 – present)
College of Agriculture, Agricultural Systems Technology Club, Sponsoring Faculty Member
(2019 – present)

Recruiting Events: Agriculture Expo, Black River Technical College (7 Feb 2020), Pack Preview
Day (26 Oct 2019), New Student Orientation (03 Jun & 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)

Discipline

American Association of Geographers (AAG):
Secretary: AAG-WBSSG July 2020 -June 2021
Co-organizer: AAG-WBSSG Special Session II: Featured lecture by Dr. Greg Jones, AAG
Conference, Denver, CO (Apr 2020) event canceled
Session Chair: AAG Conference Session “UAS Symposium I: Structure from Motion for
Forestry and Natural Resources” (4 Apr 2019)
Student Rep: Geographies of Wine, Beer, & Spirits (WBSSG) (2016 – 2017)
Arkansas GIS Users Forum:
Member: Executive Committee, Social Subcommittee, Outreach and New Member
Subcommittee (2020 – present)
Southeastern Division of the AAG (SEDAAG):
Conference Volunteer: SEDAAG Conference Athens, GA (23 – 25 Nov 2014)

Professional Development

2020 Arkansas Soil and Water Conference (29 Jan)
2019 Agricultural Conservation Planning Framework meeting, USDA-ARS Jonesboro, AR (11 Dec)
2019 Mississippi County Water Management Field Day (5 Aug), Burdette, AR
2019 RiceTec Arkansas Field Day (6 Aug), Harrisburg, AR
2019 ESRI Education Summit – San Diego, CA (6-9 Jul)
2019 ESRI User Conference – San Diego, CA (8-12 Jul)
2018 Non-and-grant Agricultural and Renewable Resources Universities (NARRU): Delta Tour (10
Sep), Jonesboro-Osceola-Dyess-Wilson, AR
2018 Mississippi County Water Management Field Day (6 Aug), Osceola, AR
2018 RiceTec Arkansas Field Day (7 Aug), Harrisburg, AR
2017 ESRI Education GIS Conference – San Diego, CA
2017 ESRI User Conference – San Diego, CA
2016 ESRI User Conference – San Diego, CA
2016 XI International Terroir Congress – Post Congress Appellations Tour – selected Oregon &
Washington vineyards
2015 ESRI User Conference – San Diego, CA

Honors and Achievements

- 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)

Certifications

Certified GIS Professional (GISP) Cert.# 90584, GIS Certification Institute, Apr 2015

FAA Part 107 Remote Pilot License, Small Unmanned Aircraft Systems, Jun 2019

Professional Memberships

Member – American Association of Geographers (AAG)

Member – AAG Geography of Wine, Beer, and Spirits Specialty Group

Member – Southeastern Division of the American Association of Geographers (SEDAAG)

Student Research & Mentorship

Daniel Shults (2019-present) – B.S., M.S.A., RASAD Graduate Research Assistant-award recipient
“Micro Topography Analysis for Surface Reservoir Detection” (Jul 2019-Jun 2021)

-Proposed thesis title: “A spatiotemporal analysis of surface water installation in the Cache and L’Anguille River Regions of Northeastern AR” (advisor)

-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.”

Richard Pickett (2019-present) – B.S., Ag. Agricultural System Technology, M.S.A. (accelerated)

-Awarded the Undergrad. Student Award at the Arkansas Soil & Water Conf. (29 Jan 2020)

Shauna Taylor (2019) – M.S.A, (non-thesis) Concentration in Plant and Soil Science (committee member)

Jessica Krob (2018-present) – B.S., Ag. 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 *Lycus lineolaris* feeding in Mid-South cotton.” --

Awarded the 2020 Outstanding Student award for her BSA in Agronomy (Plant and Soil Science).

Diana Soteropoulos (2018-present) – Environmental Science Ph.D. program (committee member)

Valerie Kearny (2018-present) – Wildlife Management M.S program (committee member)

Justine Chester (2018-present) – Water Quality M.S. program (committee member)

Teaching Interests

geographic information systems
environmental modeling: climate, soil & topographic surfaces analysis
human-environment interactions
agricultural geography
Earth science (physical geography)
cartography
geographies of wine, beer and spirits
world regional geography