

# 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

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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

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micro-topographic modeling, niche agricultural suitability, physical site selection, terroir analysis, geography of viticulture in the Southeastern U.S., climate

## Experience

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*Assistant Professor*, College of Agriculture (2018 to present), Arkansas State:

- Fundamentals of GIS/GPS, AGST 3543 (Fall 2018, Spr. 2019, sched. Fall 2019)
- Agricultural Spatial Technology I, AGST 3505(old) (Fall 2018)
- Advanced GIS for Agriculture and Natural Resources, AGST 4543 (Spr. 2019)
- Agricultural Biosystems 1, 5-week segment on Geospatial Ag.-Tech., AGRI 3823 (Spr 2019)
- Advanced Geographic Information Systems, AGST 6543 (graduate; Spr. 2019)
- Geospatial Data Applications, AGST 3505(new) (sched. Fall 2019)
- Understanding GIS, AGST 5763 (graduate; sched. Fall 2019)

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

- Introduction to Earth Science (Spr. 2017, Spr. 2018, Fall 2017)
- Introduction to Geographic Information Science (Fall 2017, Spr. 2018)
- Introduction to Sustainability Studies (Fall 2017, Spr. 2018)
- Introduction to Environmental Studies (Spr. 2018, 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 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

## Publications

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- Teague, T.G., A. Baker, J. Krob, J.W. Nowlin. 2020, “On-Farm Evaluation of Reduced Cotton Seeding Rates in a Mid-South System Incorporating a Cereal Rye Winter Cover Crop with Different Termination Timing” Proc. of the 2020 Beltwide Cotton Conferences, National Cotton Council, Austin, TX. (scheduled, submitted)
- 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. Nowlin, and B. Robertson. 2019. Seeding rate and winter cover crop effects on maturity and yield of Mid-South cotton. (in press) In: S. Boyd, M. Huffman, L. Krogman, and A. Sarkissian (Eds.), Proc. of the 2019 Beltwide Cotton Conferences, National Cotton Council, Memphis, TN.
- 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.

## Funding

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- 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 (Under Review)
- 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. July 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

## Presentations

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- John W. Nowlin, Aaron Shew, Ahmed Hashem, Geanseon “Sun” Kim. “Development of Digital Agriculture Curriculum: Geospatial Tutorial Topics for Agricultural Decision-making” (poster), AAG– Denver, CO (6-10 Apr 2020) planned
- John W. Nowlin, 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) submitted & scheduled
- John W. Nowlin, Joseph H. Massey, Daniel D. Shults. “Meter Resolution, Within Field Topographic Pattern Analysis” (presentation) Arkansas GIS Users Forum Symposium, Eureka Springs, AR (31 Oct 2019) submitted & scheduled
- 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 Symposium, Eureka Springs, AR (31 Oct 2019) submitted & scheduled
- 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) submitted & scheduled
- “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) High School Teachers Professional Development, University of Arkansas Community College Batesville (UACCB), Batesville, AR (27 Jun 2019)
- John W. Nowlin, 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, 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), Capitol Rotunda, Little Rock, AR (20 Feb 2019)

- Ahmed Hashem and John W. Nowlin, ““GIS and Unmanned Aircraft Systems- Applications in Agriculture” prospective students, Arkansas State University, Jonesboro, AR, (24 Jan 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 38<sup>th</sup> 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

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- AAG Geography of Wine, Beer, & Spirits Specialty Group member (2019 – 2020)
- Member Environmental Science Committee (2019-present)
- College of Agriculture, University Rep for the Undergraduate Admissions Appeals Committee (Jul 2018-present)
- College of Agriculture, University Rep for the LMS Task Force (Sep 2018 – Feb 2019)
- College of Agriculture, University Rep for the Academic Integrity Task Force (Oct 2018 – Feb 2019)
- College of Agriculture, Internship Committee (2018 – present)
- Recruiting Events: Select A Major Fair (3 Oct 2018), Pack Preview Day (6 Oct, 2018), Get Wolf Ready (31 Oct 2018), Agriculture Appreciation Expo, Black River Technical College (15 Feb 2019), Arkansas-Eastern District FFA Career Development Event (6 Mar 2019), Valley View High School Career Fair (29 Mar 2019),
- AAG Geography of Wine, Beer, & Spirits Specialty Group Student Rep. (2016 – 2019)

*Conference Volunteer* SEDAAG Conference Athens, GA (23-25 Nov 2014), Agricultural Students, New Student Orientation (Jun 3 and Jun 19, 2019), New Student Orientation (3 Jun & 9 Jun 2019)

## Professional Development

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2019 Mississippi County Water Management Field Day (August 5, 2019), Ocoola, AR  
2019 RiceTec Arkansas Field Day (August 6th, 2019), Harrisburg, AR  
2019 ESRI Education GIS Conference – San Diego, CA  
2019 ESRI User Conference – San Diego, CA  
2018 Non-and-grant Agricultural and Renewable Resources Universities (NARRU): Delta Tour (September 10, 2018), Jonesboro-Ocoola-Dyees-Wilson, AR  
2018 Mississippi County Water Management Field Day (August 6, 2018), Ocoola, AR  
2018 RiceTec Arkansas Field Day (August 7th, 2018), 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

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- 1<sup>st</sup> 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

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Certified GIS Professional GISP by The GIS Certification Institute (GISCI), 2015  
FAA Part 107 Remote Pilot License – Small Unmanned Aircraft Systems, Jun 2019

## Professional Memberships

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Member – American Association of Geographers (AAG)  
Member – AAG Geography of Wine, Beer, and Spirits Specialty Group  
Member – Southeastern Division of AAG (SEDAAG)

## Student Research & Mentorship

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Daniel Shults (2019-present) – MSA, RASAD Graduate Research Assistant-award recipient  
(advisor), “Micro Topography Analysis for Surface Reservoir Detection”  
Richard Picket – BS Ag. Agricultural System Technology program, (Undergrad Assistant)  
Jessica Krob – BS Ag. Plant Soil Science program, (co-advisor with Dr. Tina Teague)  
Diana Soteropoulos – Environmental Science Phd program (committee member)  
Valerie Kearny – Wildlife Management MS program (committee member)  
Justine Chester – Water Quality MS program (committee member)

## Teaching Interests

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Geographic Information Systems  
Environmental Modeling: Climate & Topographic Surface Analysis  
Human-Environment-Interactions  
Agricultural Geography  
Earth Science (Physical Geography)  
Cartography  
Geography of Wine  
World Regional Geography