

## L. SHEA ROSE

Professor

Department of Natural Sciences, University of West Georgia

### Education

2008 Ph.D. Geography (Atmospheric Science/Geospatial Techniques), The Florida State University

Dissertation: *A Spatial Analysis of Lightning Strikes and Precipitation in the Atlanta, Georgia (USA) Region*

1996 B.A. Energy and Environmental Studies, The Evergreen State College

Research Topic: *A Digital Temperature Network for Remote Heat Flow Monitoring*

### Academic and Professional Positions

2008– Professor (promoted 2019), Department of Natural Sciences

- Codirector of the new undergraduate atmospheric science certificate (2019)
- PI or coPI on over half a million dollars in grants to advance science and education
- Risk Management Environmental Health and Safety Community Award for Environmental Sustainability for work with students, staff, and nonprofits on the campus garden and environmental science teaching, 2015
- College of Science and Mathematics, Excellence in Teaching Award, 2013
- Managed research on Science and Policy for the Faculty and Student Team (FAST) Department of Energy Fellowship at the Environmental Protection Agency, Office of Air and Radiation, Washington, D.C., 2011

2017–2020 Assistant Dean, College of Science and Mathematics, University of West Georgia

- 2019–2020 Engage West Emerging Leaders Selection
- Responsible for administering student academic policies
- Coordinate COSM tours, orientations, preview days
- Investigate student success through GIS and data visualization
- Oversee Dean's Circle student representatives
- Updated COSM recruiting materials
- STEM Focus Area development
- GIS analysis for retention study for Student Affairs and Enrollment Management, Fall 2018
- COSM curriculum coordinator
- Administered faculty activity and workload reporting
- COSM grant reviewer

- 2002–2008 Graduate Teaching, Research and GIS Lab Assistant, The Florida State University
- NSF funded research in data visualization and urban storm modification
  - Assisted students with GIS and technical issues
- 1998–2002 Research Associate, Lawrence Berkeley National Laboratory, Environmental Energy Technologies Division, Heat Island Group, Berkeley, CA
- Responsible for urban fabric analysis of Chicago, Houston, Sacramento, and Salt Lake City in the EPA's Urban Heat Island Pilot
  - Coordinated with scientists, local planners, nonprofits and private companies to acquire data and provide expertise for analysis and policy development related to land use planning, air quality and energy demand
- 1997–1998 Computer Aided Drafting Department Manager  
Webb Structural Steel Design and Detailing, Dothan, AL
- Reduced wastes, while saving time and money, by transitioning the company to computer aided drafting
  - Managed employees and trained them on CAD-integrated applications for operational sustainability
- 1996 Research Assistant, Oak Ridge National Laboratory  
Energy and Transportation Science, Buildings Research Group, Oak Ridge, TN
- Analyzed real-time data from building components to determine R-values
  - Worked with users of research facilities from private and nonprofit organizations
- 1993, 1996 Science, Math and English Tutor, Pathways Program, Wallace Community College  
Department of Education program for at-risk students, Dothan, AL
- Achieved certification as a tutor in the State of Alabama

## Research Proposals

### External

Application of Energy Related Core Ideas and Practices across Middle and Secondary Earth, Environmental, and Life Sciences Content. Dr. L. Shea Rose (PI), Dr. Gail Marshall and Professor Judy Cox (coPIs). US Department of Education. Improving Teacher Quality State Grants Program-Title II, Part A. February 2017–May 2018. \$49,492.

Application of Energy Related Core Ideas and Practices across Middle and Secondary Earth, Environmental, and Life Sciences Content. Dr. L. Shea Rose (PI), Dr. Gail Marshall and Professor Judy Cox (coPIs). US Department of Education. Improving Teacher Quality State Grants Program-Title II, Part A. February 2016–May 2017. \$47,850.

National Atlas Project: Cartographic Perspectives of the Physical Geography of the Korean Peninsula. Seong, J.C. (PI), Hwang, C. (coPI) and Rose, S. (coPI). Korean Geographical Society. 2015–2016. \$8,400.

A Community Garden for the University of West Georgia. Rose, S., Butts, L., Hembree, J., and Fox, J. Community transformation grant from the Centers for Disease Control and Prevention (CDC) led by Tanner Health System. 2014–2015. Gifts in kind for the garden including a sign, raised beds, seeds and soil.

Extending the LiDAR Project of Coastal Regional Commission of Georgia to Okefenokee National Wildlife Refuge. Dr. J.C. Seong (Principal) and Dr. S. Rose (coPI). United States Geological Survey. February 2010–July 2011. \$491,214. Includes private companies, student internships, and student assistants.

Analysis of Vegetative Effects on Albedo in Urban Environments. Dr. L. Shea Rose (PI). Lawrence Berkeley National Laboratory, Environmental Energy Technologies Division, Berkeley, CA. November 2009–February 2011. \$20,188. Includes 4 student assistants.

#### Internal

An examination of air quality risks in the Atlanta area arising from shifting climate conditions, Student Research Assistance Program, University of West Georgia (Summer 2023). \$1000.

Spatiotemporal Analysis of Weather Extremes in a Climatological Perspective for the Southeast US Region, Student Research Assistance Program, University of West Georgia (2019–2020). \$1800.

Louis–Stokes Alliance for Minority Participation–Geosciences, NSF, Dr. Swamy-Mruthinti, Institutional PI (2014–16). 2 student research stipends.

Developing Inquiry–Based Environmental Science Investigations for Place Based Learning, Board of Regents Stem II Grant, University of West Georgia Institutional STEM Excellence (2015–16). \$7,250.

Community Level Action for Sustainability, Student Research Assistance Program, University of West Georgia (July 2014–May 2015). \$1,800.

Building Applied Skills in Energy (BASE): A hands–on approach to understanding the potential energy production from photovoltaic panels, BOR Stem II Grant, University of West Georgia Institutional STEM Excellence (2013–14). \$5,868.

Local Sustainability, Student Research Assistance Program, University of West Georgia (July 2013–May 2014). \$2,000.

Ecological Sustainability at the Community Level, Student Research Assistance Program, University of West Georgia (August 2012–May 2013). \$2,000.

A GIS Examination of Community Sustainability, Student Research Assistance Program, University of West Georgia (August 2011–May 2012), \$2,000.

## Research Articles

DeSilva, L.A., Tennakone, K., Zander, C., **Rose, S.** and Kerlin, A. 2019. Measurement of Solar Spectral Irradiance and Surface Ozone at Carrollton, during Great American Eclipse on August 21st, 2017. *Georgia Journal of Science*, Volume 77, Issue 2, Article 2.

Kerlin, A., DeSilva, L.A., **Rose, S.** and Hasbun, J. E. 2016. Calculating the Sun's Photospheric Temperature, an Undergraduate Physics Laboratory. *Georgia Journal of Science*, Volume 74, Issue 2, Article 13.

**Rose, L.S.** and Levinson, R. 2013. Analysis of the Effect of Vegetation on Albedo in Residential Areas: Case Studies in Suburban Sacramento and Los Angeles, CA. *GIScience & Remote Sensing*, Volume 50, Issue 1, Pages 64–77.

**Rose, L.S.**, Seong, J.C., Ogle, J., Butte, E., Indridason, J., Hall, J., Nelson, S., Jones, T. and Humphry, J. 2013. Challenges and Lessons from a Wetland LiDAR Project: A Case Study of the Okefenokee Swamp, Georgia, USA. *Geocarto International*, Volume 28, Issue 3, Pages 1–17.

**Rose, S.**, Stallins, J.A. and Bentley, M. 2008. Climatological and Single-Event Scale Visualizations of Urban Cloud-to-Ground Flashes in Atlanta, Georgia. *Earth Interactions*, Volume 12, Pages 130.

Akbari, H. and **Rose, L.S.** 2008. Urban Surfaces and Heat Island Mitigation Potentials, *Journal of the Human-Environmental System*, Volume 11, Number 2, Pages 85–101.

Stallins, J.A. and **Rose, S.** 2008. Urban Lightning: Current Research, Methods, and the Geographical Perspective. *Geography Compass*, Volume 2, Pages 620–639.

Stallins, J. A., Bentley, M. L. and **Rose, L. S.** 2006. Cloud-to-Ground Flash Characteristics for Atlanta, Georgia (USA) from 1992–2003. *Climate Research*, Volume 30, Pages 99–112.

**Rose, L. S.**, Akbari, H. and Taha, H. 2003. Characterizing the Fabric of the Urban Environment: A Case Study of Greater Houston, Texas. LBNL-51448. Berkeley, CA.

Akbari, H., **Rose, L. S.** and Taha, H. 2003. Analyzing the land cover of an urban environment using high-resolution orthophotos. *Landscape and Urban Planning*, Volume 63, Issue 1, Pages 1–14.

Berdahl, P., Akbari, H. and **Rose, L. S.** 2002. Aging of reflective roofs: Soot Deposition. *Applied Optics*, Volume 41, Issue 12, Page 2355–2360.

Akbari, H. and **Rose, L. S.** 2001. Characterizing the Fabric of the Urban Environment: A Case Study of metropolitan Chicago, Illinois. LBNL-49275. Berkeley, CA.

Akbari, H. and **Rose, L. S.** 2001. Characterizing the Fabric of the Urban Environment: A Case Study of Salt Lake City, Utah. LBNL-47851. Berkeley, CA.

Akbari, H., **Rose, L. S.** and Taha, H. 1999. Characterizing the Fabric of the Urban Environment: A Case Study of Sacramento, CA. LBNL-44688. Berkeley, CA.

\*Google Scholar [https://scholar.google.com/citations?user=zcX\\_lgsAAAAJ&hl=en&oi=ao](https://scholar.google.com/citations?user=zcX_lgsAAAAJ&hl=en&oi=ao)

### **Experiential Learning Presentations**

**Rose, L.S.** 2017. Developing undergraduate research through integrating the R-language into an applied climatology course. The Geological Society of America Annual Meeting. Seattle, Washington.

Marshall, G., Cox, J. and **Rose, S.** 2017. Alternative Energy Sources: Developing the STEM Concepts and Practices Necessary to Prepare Students for this Rapidly Advancing Career Field (Grades 6–12). Georgia STEM Forum. Athens, Georgia.

**Rose, S.**, Chambers, K., McClain, M., Ojiagbaje, S., Moore, J. and Eytalis, J. 2015. GIS Field Collection to Support a Tree Inventory for Campus Sustainability. Association for the Advancement of Sustainability in Higher Education Annual Conference. Minneapolis, Minnesota.

**Rose, S.** 2015. American Meteorological Society Climate Studies Implementation in a Hybrid Course Format. 95<sup>th</sup> American Meteorological Society Annual Meeting. Phoenix, Arizona.

**Rose, S.** 2014. Active Learning in an Undergraduate Energy and Sustainability Course. Third Conference on the Physics of Sustainable Energy: Using Energy Efficiently and Producing It Renewably. American Physical Society. Berkeley, California.

### **Panel Session on Experiential Learning Practices**

Rawlings, L., Cumming, W., **Rose, S.**, Halvorson, S., Harty, J. and Lash, J. 2013. Outdoor Classroom, Sponsored by Geography Faculty Development Alliance, Geography Education Specialty Group, and Applied Geography Specialty Group, Annual Meeting of the Association of American Geographers. Los Angeles, CA.

### **Selected Research Presentations**

Rodgers, J. A. and **Rose, L.S.** 2021. GIS Analysis of a Southeastern Shift in Continental U.S. Tornado Intensity and Frequency. Annual Meeting of the American Association of Geographers. Virtual.

- Rose, L.S.** and LaRow, T. 2016. The Relationship between Climate Oscillations and Regional Extremes. American Geophysical Union Annual Conference. San Francisco, CA.
- Seong, J.C., **Rose, S.**, Ogle, J. and Indridason, J. 2012. LiDAR Surveying on Okefenokee Swamp: Issues and Challenges. American Society for Photogrammetry and Remote Sensing (ASPRS) 2012 Annual Conference. Sacramento, CA.
- Rose, S.** and Patel, N. 2011. The US EPA's Heat Island Reduction Program Activities. International Workshop on Advances in Cool Roof Research. Berkeley, CA.
- Rose, S.** and Indridason, J.A. 2011. Impacts of Urban Vegetation on Community Albedo. Annual Meeting of the Association of American Geographers. Seattle, WA.
- Seong, J.C. and **Rose, S.** 2011. Mapping with LiDAR: Opportunities and Challenges. Annual Meeting of the Association of American Geographers. Seattle, WA.
- Seong, J.C. and **Rose, L.S.** 2010. Experience from the LiDAR Project of Okefenokee National Wildlife Refuge. AmericaView 2010 Fall Technical Meeting. Madison, WI.
- Rose, L.S.** 2007. An event-based climatology of cloud-to-ground flash patterns for Atlanta, Georgia: Initial assessment of elevation effects. Special paper session on Climatology and Hazards of Severe Weather, Annual Meeting of the Association of American Geographers. San Francisco, CA.

### **Recent Directed Student Research Presentations**

- Gordon, Henrick and **Rose, L.** 2019. Investigating the spatial characteristics of regional extremes in the southeastern United States as related to large scale climate features. Association of American Geographers Annual Meeting. Washington, D.C.
- Brown, Benjamin. 2017. Impact of High School Educational Experience on College Graduation at UWG. Southeastern Division of the Association of American Geographers Annual Meeting. Starkville, MS.
- Gordon, Henrick. 2017. An Examination of the Educational Success of Under-Represented Groups. Southeastern Division of the Association of American Geographers Annual Meeting. Starkville, MS.
- Purcell, William. 2017. Examining Fan Bases Using Social Media for Professional Football Teams. Southeastern Division of the Association of American Geographers Annual Meeting. Starkville, MS.
- Randolph, Ellen. 2017. Geographic Trends of a New Dance Form in the U.S. Southeastern Division of the Association of American Geographers Annual Meeting. Starkville, MS.

Moore, Javantae. 2016. The Cry Wolf Syndrome on College Campuses: Analysis of Weather Closing Communication. Georgia–Alabama LSAMP Spring Symposium. Atlanta, GA.

Moore, Javantae and Ojiagbje, Stephanie. 2015. An Examination of Seasonal Patterns of Pollen and Atmospheric Factors in the Birmingham, AL Region. Georgia–Alabama LSAMP Spring Symposium. Atlanta, GA.

Bowens, Sesame, Ojiagbje, Stephanie and **Rose, S.** 2014. Urban Heat Island Mitigation and Planning Strategies in Georgia Cities. Georgia–Alabama LSAMP Spring Symposium. Atlanta, GA. Award Winning Presentation: 1<sup>st</sup> Place in Poster Session for Physics Division.

Tzegaegbe, Dana 2014. Examining Land Use at the University of West Georgia. Southeastern Division of the Association of American Geographers Annual Meeting. Athens, GA.

Cornelison, Lillie. 2014 University of West Georgia Forest Degradation Caused by Suburban Sprawl in North Atlanta. Southeastern Division of the Association of American Geographers Annual Meeting. Athens, GA.

**Invited Speaker**

Science, Energy, and Sustainability: Progress and Challenges. National Science Honor Society Induction Ceremony and Energy Expo, Luella High School, Locust Grove, GA, December 2017.

Environmental Risks of the Keystone XL Pipeline, League of Women Voters of Carrollton and Carroll County, Carrollton, GA, February 2013.

**Teaching Experience**

The University of West Georgia

Graduate Courses for Postgraduate Certificate in GIS

Geospatial Technologies Practicum\*                      Computer Cartography (GIS)

Undergraduate Courses for B.S. in Geography, General Education and Atmospheric Science Certificate

Intro to GIS	Weather & Climate/Lab
Intro to Geographic Analysis	Environmental Science/Lab*
Human Impacts on the Environment	Landforms Geography/Lab
Local Sustainability*	Energy & Sustainability*
Computer Cartography (GIS)	Meteorology
Environment and Health*	Applied Climatology*
GIS Practicum	

\*New Course Development

The Florida State University

World Regional Geography

Environmental Science

## **Professional Development**

### Education, Engagement, and Curriculum Focus

University System of Georgia Momentum Summit. University of West Georgia Campus Team.  
University of Georgia, Classic Center, Athens, GA. January 28–29, 2020.

University System of Georgia Advising Academy 2018. University of West Georgia Campus Team.  
Stone Mountain, GA. September 20–21, 2018.

John Gardner Institute. Gateway Course Experience Conference, Analytics in Pedagogy and  
Curriculum Sessions. Houston, TX. March 22–27, 2018.

Sustainability and Curriculum: American Association for Sustainability in Higher Education  
Workshop for Campus Leaders, Emory University, Atlanta, GA. January 7–8, 2016.  
Representative for University of West Georgia's Center for Sustainability.

Lockheed Martin awarded "School of Ice." Conducted by the U.S. Ice Drilling Program Office in  
partnership with American Meteorological Society. Denver, CO. June 14–18, 2015.

American Meteorological Society Climate Studies Diversity Project. Washington, D.C. May 18–28,  
2014.

NASA supported "The Greenhouse Effect of Learning" at Georgia State University. Atlanta,  
Georgia. June 5–6, 2013.

U.S. EPA's 12<sup>th</sup> Community Involvement Training Conference. 2011. Community Involvement in  
the 21<sup>st</sup> Century: Embracing Diversity, Expanding Engagement, Utilizing Technology.  
Arlington, Virginia. July 19–21, 2011.

### Research Focus

National Center for Atmospheric Research (NCAR) Regional Climate Tutorial. Foothills  
Laboratory, Boulder, CO. August 10–12, 2016.

NOAA Air Resources Laboratory's HYSPLIT Workshop 2010. Hybrid Single Particle Lagrangian  
Integrated Trajectory Model for Air Parcel Trajectories and Dispersion. Silver Spring,  
MD. June 2010.

NCAR Workshop on Climate and Health. Heat waves and air pollution. Boulder, CO. July 2009.

Vespucci Institute. Geographic Information Science applications focus. Florence, Italy. July 2009.

## **Academic Service**

### University Committees

College of Arts, Culture, and Scientific Inquiry, Executive Committee, Fall 2023–

College of Arts, Culture, and Scientific Inquiry, General Education Committee, Fall 2020–Spring 2023

Faculty Senate Academic Policies Committee, Academic Programs Committee, Fall 2020–Spring 2021

General Education Program Assessment Core Area D Work Group Coordinator, Fall 2020–Spring 2023

Momentum Summit Implementation Team, Academic Advising Committee, Spring 2020

General Scholarship Committee, 2018

Strategic Enrollment Management (SEM) Plan Committee, 2018–2019

Catalog Governance Committee, 2018–2019

General Education Program Assessment Committee, Area D Focus, 2018–2019

Barrier Team, College of Science and Mathematics Representative, 2015–2019  
Soft Benefits Subcommittee Member, Sledgehammer Awarded

Graduate Programs Committee, College of Science and Mathematics Representative, 2015–2017

Disciplinary Appeals Committee, 2013–2015

Campus Tree Advisory Board, 2012–2016

Sustainability Council, College of Science and Mathematics Representative, Fall 2014–Spring 2016

Earth Week Committee, Spring 2014–Spring 2016

At-Large Member of Advisory Committee, College of Science and Mathematics, 2012–2013

Search Committees: Tenure-Track Assistant Professor of Geology, 2015–2016  
Tenure-Track Assistant Professor of GIS, 2011–2012  
Tenure-Track Assistant Professor of GIS, 2010–2011  
Tenure-Track Assistant Professor of Geosciences, 2009–2010

### M.A. Committee Member

Hall, Aron. (MA Thesis, Sociology, 2015). The environmental impact of relocation on health outcomes of Hurricane Katrina survivors.

### Student Organization

Green Elite. Focus on sustainability: Started the University of West Georgia (UWG) Community Garden and composting for Carve on the Quad. Advisor. Fall 2013–Summer 2016.

### Manuscript Reviews

*GIScience & Remote Sensing*

*Remote Sensing of Environment Cities and the Environment (CATE) Applied Geography.*

### Grant Reviews

U.S. Dept. of Education, Improving Teacher Quality State Grants–Title II, Part A. Managed by the University of Georgia for the University System of Georgia. TQ Grant Proposals 2017–2018.

Fundação para a Ciência e a Tecnologia (FCT), Government of Portugal. Reviewer for a physical geography grant proposal, May 2009.

### Conference Reviews

The Association for the Advancement of Sustainability in Higher Education (AASHE). Reviewer for the AASHE 2015 Annual Conference, October 25–28, 2015.

Southeastern Division of the Association of American Geographers (SEDAAG). Reviewer for physical geography submissions for the SEDAAG Annual Meeting, November 2009 and November 2010.

### Tenure and Promotion Review

University of West Florida, Department of Earth and Environmental Sciences

## **Professional Affiliations**

Association of American Geographers

American Meteorological Society: 2014–15 Climate Diversity Project Cohort

International Association for Urban Climate

Phi Kappa Phi Academic Honor Society

Southeastern Division of the Association of American Geographers

## **Community Service**

May 2021 Georgia's ArcGIS Online Competition Judge, Grades 5-12 Schools

January 2018 Hosted Energy Ideas Implementation in Middle and High School Life, Earth and Environmental Sciences Session for Teachers, Gordon State College, Funded by the Improving Teacher Quality State Grants Program, Elementary and Secondary Education Act, Title II, Part A.

- Dec 2016 American Geophysical Union, Outstanding Student Paper Awards Graduate Student Research Competition Judge
- March 2016 UWG Sustainability in the Curriculum Workshop, UWG's Center for Sustainability, Classroom Integration Techniques: Led Reading Discussion
- 2014–2016 Green Elite coordinated donations to Second Harvest, the Carroll County Soup Kitchen and Emergency Shelter from the UWG Community Garden
- 2015, 16, 17 UWG College of Education Spring STEM Competition Proctor and Judge
- Dec 2015 Interview with LaGrange Daily News, [Forecasters Predict Cold Wet Winter in Georgia as El Nino Drives Rainfall](#). Associated Press article in several media outlets including The Washington Times, The Arkansas Democrat, The Marietta Daily Journal and The Troy Messenger
- July 2015 Interviews with the Times–Georgian and Lagrange Daily News on climate extremes
- June 2015 Interview with NSF's The Antarctic Sun about the "School of Ice 2015"  
<https://antarcticsun.usap.gov/science/4169>
- 2015 West Georgia Regional Science and Engineering Fair Judge
- 2014 Curriculum Development for SunPower for Schools, Green Power EMC
- February 2012 Environmental History Presentation and Recycling Activity, Girl Scout Daisy Troup, Ranburn, AL

### **Computer Skills**

ArcGIS, ERDAS Imagine, MS ACCESS, MS Excel, R language, FORTRAN and Visual Basic