S. Faye Smith, Ph.D.
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Open to Relocation



Environmental scientist with 10+ years of experience in soil science, microbial ecology, and sustainable land management. Skilled in field research, data analysis (R, Python, GIS), and stakeholder collaboration across academic, government, and nonprofit settings. Experienced in project coordination, education, and translating complex environmental data into actionable insights.

Education

| 2015 – 2020 | Ph.D., Environmental Dynamics from the University of Arkansas Dissertation title: Using Soil Geospatial Properties and Environments to Explore Microbial Diversity |
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| 2011 - 2013 | M.Sc., Crop, Soil, and Environmental Sciences from the University of Arkansas Thesis title: Long-term Residue and Water Management Effects on Soil Respiration and Soil Aggregate Stability in a Wheat-soybean, Double-crop System in Eastern Arkansas. |
| 2007 – 2011 | B.Sc., Environmental, Soil, and Water Sciences from the University of Arkansas Honors; Cum Laude Thesis title: Molecular and Phenotypic Comparisons of Salt Effects on Soybean Cultivars with Differential Chloride Uptake Capacities. |

Employment and Research History

| 2023 – 2024 | | Soil Data Analyst - Soil Health Institute, Morrisville, NC Managed and coordinated data collection for large-scale soil health testing projects, including the Carbon Program and Soil Health Assessment with Truterra. Analyzed soil data to establish benchmarks and supported strategic initiatives aimed at enhancing land management practices. Collaborated with stakeholders to ensure project alignment with conservation goals. |
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| 2021 - 2022 | R | Postdoctoral Researcher - USDA-ARS, Pendleton, OR Led research exploring the genetic mechanisms of fungicide resistance in wheat pathogens using bioinformatics and genomic tools. Developed ecological maps to evaluate the impact of wheat farming practices on soil microbiomes, providing insights to inform sustainable agriculture policies. |
| 2020 – 2021 | | Postdoctoral Researcher - USDA-ARS, Beltsville, MD Developed an R-based pipeline for designing SNP-based PCR assays to distinguish fungal variants causing boxwood blight. Conducted bioinformatics analyses to identify mitochondrial DNA differences, supporting the development of targeted pathogen management strategies. |
| 2015 – 2020 | | Graduate Researcher - Soil Microbial Ecology - University of Arkansas Designed and executed a spatial ecology field experiment to investigate soil-microbe interactions and their connection to geospatial soil properties. Collected and analyzed large micro- biome datasets using bioinformatics, R, and QGIS, producing insights into soil health and ecosystem dynamics. |
| 2013 - 2014 | | Technical Assistant III - Soybean Breeding - University of Arkansas Contributed to soybean breeding research by purifying seed stocks, creating genetic crosses, and organizing seed inventories. Revised and published academic manuscripts, supporting advancements in crop genetics and breeding methodologies. |

Employment and Research History (continued)

- 2011 2013 Graduate Research Assistant Applied Soil Physics University of Arkansas Conducted field and laboratory experiments to measure trace gas emissions and soil physical properties in agro-ecosystems. Authored grants and scientific publications while managing field operations, contributing to sustainable agricultural practices.
- 2008 2010 Technical Assistant I Plant Biotechnology University of Arkansas Performed laboratory research on plant genomics, including RNA and DNA isolation, data analysis, and hazardous material handling. Managed greenhouse experiments and supported biotechnology projects by compiling research findings into abstracts and presentations.

Teaching and Educational Development

Environmental Science Teacher - Springdale High School, AR Designed and 2024 - 2025 implemented an environmental science curriculum for over 160 high school students, emphasizing sustainability and conservation practices. Mentored at-risk students through personalized recovery plans, improving academic outcomes and fostering engagement with environmental stewardship. Delivered interactive lessons that connected real-world environmental challenges to classroom learning. Instructor of Record - Biological Anthropology Laboratory - University of Sp 2020 Arkansas. Led two laboratory sections of approximately 30 students each, focusing on bone identification and anthropological studies. Adapted and implemented lab activities to enhance student learning and engagement. Provided individualized support for struggling students and successfully transitioned to remote learning platforms during the COVID-19 pandemic. Fa 2017 Teaching Assistant - Plant Pathogenic Fungi Graduate Course - Dept of Plant Pathology - University of Arkansas. Facilitated genetic analysis labs, including DNA extraction and PCR. Prepared culture media and laboratory materials to ensure smooth class operations. Managed the course's online Blackboard account, providing timely communication and resources to graduate students. Sp 2016 - Sp 2017 Instructor of Record - Environmental Science Laboratory - Dept of Crop, Soil, and Environmental Sciences - University of Arkansas. Developed and delivered customized course materials, including handouts, lectures, and quizzes, for a hands-on environmental science lab. Supervised ongoing student experiments and provided one-on-one mentoring to enhance understanding. Created interactive online assignments and quizzes to improve student engagement and comprehension. Sp 2015 – Fa 2015 Teaching Assistant - Intro to Environmental Biophysics - Dept of Biological and Agricultural Engineering - University of Arkansas. Designed the core curriculum for a newly developed course in environmental biophysics. Created lecture materials, quizzes, and tests aligned with course objectives. Fa 2012 Teaching Assistant - Intro to Soil Science Laboratory - Dept of Crop, Soil, and Environmental Sciences - University of Arkansas. Prepared and facilitated laboratory experiments on soil science topics. Organized and led outdoor field experiments to provide students with practical, hands-on learning experiences. Assisted students in applying theoretical concepts to real-world scenarios. Fa 2011 Instructor of Record - Intro to Soil Science Drill - Dept of Crop, Soil, and Environmental Sciences - University of Arkansas. Provided individual academic support to undergraduates tackling complex homework assignments. Graded as-

sessments with detailed feedback to promote student success. Created an inclusive learning environment that encouraged active participation and problem-solving.

| Coding 📕 | R, ĽТЕХ, Visual Basic.net, CRBasic, SAS, Python |
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| Software | ArcGIS, JMP, RStudio, QGIS, Bioconductor, Microsoft Suite, LibreOffice |
| Web Dev and Repositories | Нтмь, CSS, JavaScript, Bluehost, WordPress, GitHub, RPubs |
| Conservation and Environmental Skills | Stakeholder collaboration, conservation planning, ecological assessments, and soil health benchmarking |
| Administrative and Strategic Skills | Grant writing and management, project coordination, legal compliance for conservation, accreditation standards devel- opment, and strategic planning |
| Misc. | Academic research, teaching, curriculum development, training, consultation, $\&T_EX$ typesetting and publishing, bioinformatics, experimental design, spatial modeling, statistics |

Miscellaneous Experience

Awards, Fellowships, and Grants

| 2019 | PhD Oral Presentation Competition, 2nd place, Gamma Sigma Delta, regional meet- |
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| | ing. Fayetteville, AR. |
| | Grants-In-Aid of Research Award, Sigma Xi. |
| 2015 – 2018 | Distinguished Doctoral Fellow, University of Arkansas. Fayetteville, AR. |
| 2012 – 2014 | Graduate Research Fellow (Masters), Arkansas Soybean Promotion Board |
| 2010 – 2011 | State Undergraduate Research Fellow (SURF) , Arkansas Department of Higher Education and the National Science Foundation |
| 2009 – 2011 | M.H. "Bill" Simmons Honors College Academy Scholarship |
| 2009 – 2010 | TC and Ada Anderson Endowed Scholarship |
| | Sherman D. Cullum, Sr. Scholarship |
| 2009 | Wayne E. Sabbe Arkansas Plant Food Association Endowed Scholarship |
| 2007 – 2011 | Honors College Academy Scholarship, University of Arkansas |
| Workshops | |



2011

Eddy Covariance Training Workshop. LI-COR Biosciences. Lincoln, Nebraska.
 Eleventere Workshop University of Colorado, Bouldar Mountain Bassarah Statio

Fluxcourse Workshop University of Colorado, Boulder Mountain Research Station.

LI-6400XT Portable Photosynthesis Measurement Training Course. LI-COR Biosciences. Lincoln, Nebraska.

Responsible Conduct of Research Training Course. Graduate School and International Education. University of Arkansas. Fayetteville, AR

Research Publications and Presentations

Journal Articles

Reardon, C., Klein, A., Melle, C., Hagerty, C., Klarer, E., Machado, S., Paulitz, T., Pritchett, L., Schlatter, D., & **Smith, S. F.** (2022). Enzyme activities distinguish long-term fertilizer effects under different soil storage methods. *Applied Soil Ecology*, *177*, 104518.



7 Runkle, B., Suvocarev, K., **Smith**, **S. F.**, & Reba, M. (2016). Alternate wetting and drying as an effective management practice to reduce methane in Arkansas rice production [Poster Presentation]. Rice Technical Working Group.



9 Smith, S. F., & Brye, K. R. (2012). Long-term residue- and water-management effects on soil respiration in a wheat-soybean double-crop production system. [Oral Presentation]. Lon Mann Cotton Research Station Field Day; Open House.

10 Holifield, S Faye, Rodriguez, F. L., Cartwright, R. D., Chen, P., & Korth, K. L. (2010). *Molecular and phenotypic comparisons of salt effects on soybean cultivars with differential chloride uptake capacities.* [Poster Presentation]. American Society of Plant Biologists.

References

Available on Request