RYAN P. POLAND

Graduate Research Assistant | PhD Candidate

rpp49503@uga.edu | 309-706-2067 | 272 Sleepy Creek Dr. | Athens, GA, USA
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EDUCATION

Ph.D. Candidate in Analytical and Atmospheric Chemistry

University of Georgia, Department of Chemistry

August 2021 – June 2026 | Athens, GA

Research Advisor: Geoffrey D. Smith
GPA: 3.88 / 4.00

B.S. in Chemistry

Truman State University, Department of Chemistry

August 2017 – May 2021 | Kirksville, MO

Minor: Spanish for the medical professions
GPA: 3.86 / 4.00

RESEARCH EXPERIENCE

PhD Graduate Research Assistant

University of Georgia, Department of Chemistry

August 2021 – June 2026 | Athens, GA

My dissertation research focuses on the development, optimization, and deployment of a suite of custom-built and commercially available spectroscopy instruments for online measurements of the optical properties (photoacoustic, cavity ring-down, aethalometer, and single particle soot photometer) and physical properties (scanning mobility particle sizer) of carbonaceous aerosol particles from ambient sources and biomass burning. The nature of my research has emphasized skills such as multi-level data processing and statistical analysis, hardware and software interfacing for custom-built optical instruments, design and conduction of laboratory experiments, and participation in and partial leadership of multi-institutional and interdisciplinary biomass burning field campaigns. PAS | CRDS | Aethalometer | SMPS | SP2

ARM Summer School Participant

D.O.E. Atmospheric Radiation Measurement user facility

May 2024 | Cleveland, OH

Learned how to integrate data from various meteorological instrumentation collected at ARM sampling sites with cloud formation models to answer scientific questions in small-scale research projects.
Radar and LiDAR | CESM

Undergraduate Nuclear Research Assistant

Truman State University, Department of Chemistry/Physics

September 2019 – May 2021 | Kirksville, MO

Responsible for drafting research proposals to fund the design and assembly of a small scale nuclear fusion reactor for research and instructional purposes. Assisted in the design of reactor hardware

TECHNICAL SKILLS

MATLAB | LabVIEW | Python | LaTeX | DataGraph | Arduino + C | GitHub | Microsoft Suite

Lasers & Optics | A/D Electronics | Statistical Analysis | Welding

AWARDS

2022 UGA Communication of Research Scholarship and Grant
Grant awarded by University of Georgia Graduate School for creation of new environmental chemistry museum exhibit at Sandy Creek Nature Center in Athens, GA.

Truman State University President's Leadership Scholarship
Awarded to students demonstrating exemplary leadership in and out of the classroom.

Truman State University President's List
Earned in Fall 2017, Spring 2018, Spring 2019, Fall 2021, and Spring 2021.

LANGUAGES

English ●●●●●

Spanish ●●●●◐

Italian ●●○○○

REFERENCES

Geoffrey D. Smith, Professor
University of Georgia
geosmith@uga.edu
Research Advisor

components. AutoCAD

Undergraduate Biochemistry Research Assistant

Truman State University, Department of Chemistry

December 2018 – May 2021 Kirksville, MO

Optimized expression and purification conditions for enzyme from E.coli cells. Helped establish targeted assays to gauge the effectiveness of target enzyme as a potential non-invasive treatment for cataracts. Protein Expression FPLC SDS-PAGE UV-Vis Spectroscopy

Undergraduate Physiology Research Assistant

A.T. Still University

August 2018 – February 2019 Kirksville, MO

Conducted electrophysiology shock experiments on frog oocytes for Cystic Fibrosis drug discovery, in collaboration with a team of medical student researchers. EP shock CRISPR

Summer Biochemistry Research Assistant

Illinois State University, Department of Biochemistry

April 2016 – July 2016 Normal, IL

Conducted photodynamics experiments to probe the vulnerability of Leishmaniasis parasitic cells. Photodynamics MTT assay

TEACHING EXPERIENCE

Graduate Teaching Assistant

University of Georgia, Department of Chemistry

August 2021 – May 2022 Athens, GA

Responsible for leading general chemistry I and II students in experimental procedures, keeping proper lab notebooks, and training on various instruments, chemistry techniques, and data analysis strategies.

Personal Tutor

December 2019 – Fall 2025

Tutoring and mentoring of high school students in various levels of math, Spanish, and chemistry.

University Tutor

Truman State University Department of Mathematics/Chemistry

Fall 2018 – Spring 2021 Kirksville, MO

Individual tutoring for undergraduate calculus I and II and general chemistry I and II courses.

Human Cadaver Lab Proctor

Public School Systems of Le-Roy, IL

August 2017 – May 2017 Le-Roy, IL

Assisted local medical doctors with preparation, dissection, clean-up, and instruction of high school student participants in regional cadaver lab.

Rawad Saleh, Associate Professor
@ University of Georgia
rawad@uga.edu
Committee member and campaign collaborator

Amanda A. Frossard, Professor
@ University of Georgia
afrossard@uga.edu
Committee member and campaign collaborator

LEADERSHIP EXPERIENCE

Men's Club Soccer President and Treasurer

Truman State University, Kirksville, MO

August 2018 – Spring 2021

Greatly developed leadership, organization, financial, and time management skills by scheduling and conducting practices, games, tryouts, fundraisers, team travel, and team meetings. Attended formal hearings with the university activities association to defend budget requests, managed a business checking account, and sent payment to referees and relevant organizations.

HOBBIES

Always active:
Soccer Running Skiing Biking Basketball Hiking Gardening Woodworking

Otherwise:
Cooking Sci-fi and fantasy novels Music Socializing Video games Board games Automotive repair

PUBLICATIONS AND PROCEEDINGS

Journal Articles

- Scott, A. M., Wise, C. A., **Poland**, **R. P.**, Jordan, A. D., & Fischer, D. A. (2026). Development of the SiMPLE-PAS: A low-cost, three-wavelength photoacoustic spectrometer for aerosol absorption. *Aerosol Research*, *4*(1), 103–120. doi:10.5194/ar-4-103-2026
- Abdurrahman, M. I., Glenn, C. K., Penland, R., **Poland**, **R. P.**, Choi, J. H., Roberts, E. T., Amster, I. J., Smith, G. D., & Saleh, R. (2025). Decoupling the evolution of the light-absorption properties of primary and secondary organic aerosol produced from duff burning. *ACS ES&T Air*, *2*(12), 2966–2978. doi:10.1021/acsestair.5c00274
- **Poland**, **R. P.**, McQueen, Z. C., Glenn, C. K., Hajj, O. E., Callaham, M. A., O'Brien, J. J., Saleh, R., & Smith, G. D. (2025). Improving measurements of aerosol light absorption coefficients from DualSpot aethalometers using an internal consistency diagnostic and an alternative loading compensation method. *Aerosol Science and Technology*, *ahead-of-print*(ahead-of-print), 1–18. doi:10.1080/02786826.2025.2587817
- Glenn, C. K., Hajj, O. E., McQueen, Z. C., **Poland**, **R. P.**, Penland, R., Roberts, E. T., Choi, J. H., Bai, B., Shin, N., Anosike, A., Kumar, K. V., Abdurrahman, M. I., Liu, P., Amster, J., Smith, G. D., Flanagan, S., Callaham, M. A., Loudermilk, E. L., O'Brien, J. J., & Saleh, R. (2024). Brown carbon emissions from biomass burning under simulated wildfire and prescribed-fire conditions. *ACS ES&T Air*. doi:10.1021/acsestair.4c00089
- McQueen, Z. C., **Poland**, **R. P.**, Glenn, C. K., Hajj, O. E., Penland, R., Anosike, A., Kumar, K. V., O'Brien, J. J., Saleh, R., & Smith, G. D. (2024). Optical properties of biomass burning aerosols from simulated wildfires and prescribed fires with representative fuel beds from the southeast united states. *ACS ES&T Air*, *1*(9), 1137–1146. doi:10.1021/acsestair.4c00091

Conference Presentations

- **Poland**, **R. P.**, Allen, J. T., Abdurrahman, M. I., Lesiak, M. J., Caraway, M. T., Carroll, T., Deegan, A. M., Callaham, M. A., O'Brien, J. J., Saleh, R., & Smith, G. D. (2025). Volatility resolved optical properties of biomass burning aerosols from simulated wildland fires in the g-wise-2 campaign. In *American association for aerosol research 43rd annual meeting*. Retrieved from https://aaarabstracts.com/2025/view_abstract.php?pid=184
- **Poland**, **R. P.**, Allen, J. T., McQueen, Z. C., Saleh, R., & Smith, G. D. (2024). Characterizing the influence of particle coating and volatility on the differential loading compensation parameter from a dualspot aethalometer. In *American association for aerosol research 42nd annual meeting*. Retrieved from https://aaarabstracts.com/2024/view_abstract.php?pid=230
- **Poland**, **R. P.**, McQueen, Z. C., Hajj, O. E., Glenn, C. K., Saleh, R., & Smith, G. D. (2023). Comparison of optical properties calculated from a dual-spot aethalometer and a photoacoustic spectrometer for biomass burning aerosols during the g-wise campaign. In *American association for aerosol research 41st annual meeting*. Retrieved from https://aaarabstracts.com/2023/view_abstract.php?pid=204
- **Poland**, **R. P.**, Peterson, K., & Dobson, C. M. (2021). Optimizing conditions for disulfide bond-forming enzyme de-aggregation activity using real-time lysozyme assays. In *Truman state university student research conference*.