

ABIGAIL SAENDER KNAPP
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EDUCATION

M.S. in Geology, 2018, University of Georgia Athens, GA
Thesis: *Effects of Precipitation and Drought Dynamics on Harmful Algal Blooms in Two Piedmont Reservoirs*, supervised by Dr. Adam M. Milewski

B.S. in Geology, 2013, University of Georgia Athens, GA
Undergraduate Thesis: *Melt Inclusion Study of the East Fork Rhyolite Member of the Valles Caldera, New Mexico*, supervised by Dr. Mike Roden

RESEARCH INTERESTS

Hydrogeology, Ecohydrology, Satellite Remote Sensing, Watershed Modeling

RESEARCH EXPERIENCE

Water Resources and Remote Sensing Laboratory Athens, GA
Department of Geology, University of Georgia 2016 – 2018
Research Assistant

- Obtained funding, planned & conducted fieldwork, analyzed data for thesis
- Collaborated on other lab and university research projects, grant applications, and field trips
- Coded prototype R Shiny application of water quality data for U.S. Fish & Wildlife
- Co-hosted Fulbright scholars and visiting speakers
- Mentored undergraduate lab members

Department of Geology, University of Georgia Athens, GA
Undergraduate Researcher 2012 – 2013

- Collected rock samples and prepared thin-section blanks for mounting and polishing
- Investigated geochemistry using electron microprobe, polarized light microscopy, and SEM
- Presented research at UGA Center for Undergraduate Research Symposium

Southeastern Suture of the Appalachian Margin Experiment (SESAME) Athens, GA
Department of Geology, University of Georgia 2011, 2013

Undergraduate Researcher, NSF funded project

- Assisted with installation and calibration of Flexible Array broadband stations
- In 2013, assisted with checking the sensor network for maintenance and data collection

Department of Geology, University of Georgia Athens, GA
Undergraduate Researcher 2011

- Investigated mineralogy using electron microprobe and polarized light microscopy
- Presented research at regional conference (Southeastern GSA) with a first-authored poster

GRANTS (funding M.S. thesis work)

- Geological Society of America Research Grant, 2017 \$1250
- Watts-Wheeler Research Grant, 2017 \$1000

RELEVANT RESEARCH SKILLS

- Fieldwork coordination, planning, and implementation
- Surface water sampling – quality, flow, spectrophotometry; phytoplankton sampling and filtration
- Data and Statistical analysis: R, Shiny, Python, ArcGIS Desktop & Pro
- Satellite remote sensing: Google Earth Engine, ENVI, SNAP
- Hydrogeologic modeling software: WASP, SWAT, MODFLOW, and Aqtesolve

PUBLICATIONS AND ABSTRACTS

Knapp, A.S. and Milewski, A.M., 2020. Spatiotemporal Relationships of Phytoplankton Blooms, Drought, and Rainstorms in Freshwater Reservoirs, *Water* 12 (2), 404.

Moorman, M., Hutcheson, H., **Knapp, A.S.**, Creviston, M., Rasmussen, T., and Milewski, A.M., 2019. A Status Assessment of Water Quality on US Fish and Wildlife Refuges in the Southeastern US. 11th National Monitoring Conference, Abstracts with Program.

Knapp, A.S., Milewski, A.M., Rotz, R.R., Yilmaz, K.K., Fulton, S., James d.L., Webster, C., 2017. The Role of Drought and Storms in Harmful Algal Bloom Events in Two Georgia Piedmont Reservoirs. Geological Society of America, Abstracts with Program v 49.

Knapp, A.S., Milewski, A.M., Rotz, R.R., 2017. Temporal Relationship between Drought-Precipitation Patterns and Freshwater Harmful Algal Blooms in Lake Allatoona, Georgia. Georgia Water Resources Conference, Abstracts with Program.

Knapp, A.S., Milewski, A.M., and Rotz, R.R., 2017. Temporal Relationship between Drought-Precipitation Patterns and the Onset, Duration, and Severity of Freshwater Harmful Algal Blooms in Lake Allatoona, Georgia. Geological Society of America Southeastern Section, Abstracts with Program v 49.

Saenger, A. L. and Swanson, S.E., 2012. Mineralogy of Primary Phosphate Minerals in Li Pegmatites of the Kings Mountain District, North Carolina. Geological Society of America Southeastern Section, Abstracts with Program v 44.

Saenger, A. L. and Swanson, S.E., 2012. Comparison of Mineralogy of Li Pegmatites in the Kings Mountain District, North Carolina. Geological Society of America Southeastern Section, Abstracts with Program v 44.

Gore, Pamela J. W., Pollack, G.D., and **Saenger, A.L.**, 2009, Two-Year College Collaboration with K-12 Schools and Universities. Geological Society of America, Abstracts with Program v 41.

RELEVANT PROFESSIONAL AND TEACHING EXPERIENCE

Georgia Environmental Protection Division, Watershed Protection Branch

Atlanta, GA

Geologist I – III, Underground Injection Control Coordinator

2018-2021

- Wrote no-discharge state wastewater treatment permits
- Completed annual UIC program grant application, budget, EPA reporting, and work plans
- Curated the state's UIC well inventory, permitting and compliance files
- Reviewed hydrogeologic models, wastewater treatment designs, and geologic reports
- Responded formally to regulators, stakeholders, and the regulated community

- Assisted with public hearings, stakeholder meetings, and conference presentations

Athens-Clarke County Water Conservation Office

Athens, GA

Water Education Intern (Georgia DNR Project WET Certification)

2017

- Taught educational modules on water conservation and treatment to 300 children and adults

University of Georgia, Department of Geology

Athens, GA

Laboratory Coordinator

2017

(Physical Geology)

- Designed and updated teaching materials, managed lab samples and displays
- Gave laboratory lectures; proctored and graded quizzes, exams, and assignments
- Managed grading and attendance information

University of Georgia, Department of Geology

Athens, GA

Teaching/Laboratory Assistant

2016-2018

(Physical Geology, Mineralogy, Igneous Petrology)

- Designed and updated teaching materials
- Gave laboratory lectures; proctored and graded quizzes, exams, and assignments
- Managed grading and attendance using online coursework platform (D2L)

Southeastern Suture of the Appalachian Margin Experiment (SESAME)

Blairsville, GA

Department of Geology, University of Georgia

2013

Undergraduate Employee

- Earth science outreach to K-12 students at the Georgia Mountain Research and Education Center

RELEVANT COURSEWORK

Geology Field School	Hydrogeology	Environmental GIS
Surficial Processes	Advanced Hydrogeology	Environmental Remote Sensing
Aqueous Geochemistry	Hydrologic Models	Data Analysis in Geosciences

INVITED PRESENTATIONS AND WORKSHOPS

2018 – 2021	“Igneous Petrology”, Atlanta Geological Society P.G. Workshop Series
2018	“Effects of Precipitation and Drought Dynamics on Harmful Algal Blooms in Two Piedmont Reservoirs”, Atlanta Geological Society Meeting

HONORS AND AWARDS

2018	Outstanding Teaching Assistant Award, University of Georgia
2018	Outstanding M.S. Student, Geology Department, University of Georgia
2017	Geological Society of America Travel Grant
2017	Geological Society of America Southeastern Section Travel Grant
2017	Watts-Wheeler Travel Grant
2012	Vernon J. Hurst Undergraduate Research Grant Recipient
2008	Outstanding Student in Historical Geology, Georgia Perimeter College
2007 – 2012	Georgia HOPE Scholarship Recipient

PROFESSIONAL SERVICE AND INVOLVEMENT

2021-present	Chair, Atlanta Geological Society (AGS) Georgia P.G. Workshops Committee
2018-2021	Invited instructor, AGS Georgia P.G. Workshops
2017	Student Volunteer, IAH-ECHN, GSA National Meeting
2017	Technical Assistant, Georgia Water Resources Conference
2016-2018	Undergraduate Mentor, UGA Geology Club
2012	Contributing Logo Artist, UGA Geology Club

PROFESSIONAL MEMBERSHIPS

2018-Present	Atlanta Geological Society (AGS)
2018-2021	Groundwater Protection Council (GWPC)
2017-2018	American Institute of Professional Geologists (AIPG)
	American Geophysical Union (AGU)
	International Association of Hydrologists (IAH-ECHN)
2016-2018	University of Georgia Geology Club
	UGA Women in Science
	UGA Graduate Professional Student Association
2010-Present	Geological Society of America (GSA)

CERTIFICATIONS AND TRAINING

2019	Georgia ASBOG Examination - Geologist In Training
2019	Georgia Dept. of Agriculture Certified Nutrient Management Planner
2018	WASP Modeling (Water Quality Analysis Simulation Program) 35-hr EPA workshop
2018	University of Georgia Teaching Development Transcript
2017	Georgia DNR Project WET (Water Education for Teachers) Certification