

Seth E. Younger

180 E Green Street • Athens, GA 30602-2152

seyounge@uga.edu • [Website](#)

Education

- **University of Georgia** **Athens, GA**
Department of Geography, M.S. Physical Geography 8/2010 – 12/2013
 - **Radford University** **Radford, VA**
Department of Geography, B.S. Geography 08/2006 – 05/2010
 - Geographic Information Systems (GIS) and mapping concentration
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Experience

- **University of Georgia** **Athens, GA**
Graduate Research Assistant 8/2014 – present
 - Watershed scale investigation of evapotranspiration as a function of forest cover type in the southeastern U.S.
 - Investigation of eucalyptus and loblolly pine water budgets in paired plots in the Upper Coastal Plain of South Carolina using hydrometric, physiometric and isotope techniques.
- **University of Georgia** **Athens, GA**
Hydrologic Field & Laboratory Technician 6/2013 – 7/2014
 - Collect weekly and monthly tree, soil, lysimeter, throughfall, and well samples.
 - Conduct data quality and assurance, pack and ship samples to analytical laboratories.
 - Prepare reports on rainfall, bare soil lysimeter, and soil moisture data.
 - Hydrologic monitoring, including streamflow measurement, setup and management of HOBO data loggers, ISCO samplers, Global Water level meters, and Decagons.
 - Assist U.S. Forest Service with tree planting, fertilization, and herbicide applications and, monitoring short rotation woody crop and competition herbaceous vegetation plots.
 - Conduct GIS Analysis relevant to watershed scale hydrology using ArcGIS 10.1.
 - Developed ArcGIS tools using ArcPy for watershed hydrologic analysis.
 - Provide support and assistance to staff in spatial analysis methods.
- **University of Georgia** **Athens, GA**
Graduate Research Assistant 1/2011 – 6/2013
 - Investigated the use of satellite meteorological data to drive hydrologic simulations in ungauged basins and contributed to development of reports to funding agencies.
 - Management of time series data using Python, R and Unix scripting, Microsoft Access and Excel.
 - Modeling streamflow with BASINS 4.1 & Hydrologic Simulation Program Fortran.
 - Spatial analysis and modeling in ArcGIS 10.1 and QGIS, including development of applications using model builder and ArcPy scripting.
- **Radford University** **Radford, VA**
Natural Hazard Mapping Technician 5/2009 – 7/2010
 - Collected, analyzed and organized spatial data to support The New River Valley, VA Planning District Commission FEMA Hazard Mitigation Plan 2010 update.
- **City of Radford Virginia** **Radford, VA**
GIS Technician 1/2008 – 7/2010
 - Collected and processed Trimble GPS data using Trimble Terra Sync, ArcPad, and GPS Pathfinder Office.
 - Geodatabase management and editing using ArcGIS 9.1-10.0 for Parcels, E911, Public Works, Water, Fire, and Electric departments.
 - Cartographic production for internal use and web applications.

Publications

- Bitew, Menberu, Seth E. Younger, C. Rhett Jackson, Enhao Du, and Damion Drover. In Press. Wetness Index based on Landscape position and Topography (WILT): Modifying the TWI to incorporate landscape position relative to water bodies. *Journal of Environmental Management*
- Caldwell, P.V., Jackson, C.R., Miniati, C.F., Younger, S.E., Vining, J.A., McDonnell, J.J., Aubrey, D.P., (2018) Woody bioenergy crop selection can have large effects on water yield: A southeastern United States case study, *Biomass and Bioenergy*, Volume 117, Pages 180-189, ISSN 0961-9534, <https://doi.org/10.1016/j.biombioe.2018.07.021>
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Grants

- Younger, S.E. 2016. Sigma Xi Grants-in-Aid of Research. Sampling effects on the deuterium isotope signature of tree xylem water. \$800
- Travel Award from UGA's Warnell School of Forestry and Natural Resources to present research at the 2019 Annual Meeting of the American Geophysical Union. \$1300
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Conference proceedings

- Rasmussen, Todd & Deemy, James & Younger, Seth. (2017). Big Data in Hydrology: From Continental to Hillslope Scales. Georgia Water Resources Conference, Athens, GA. April 2017.
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Scientific presentations

- Younger, S.E., Jackson, C.R. (2019). Influence of forest and vegetation type on annual evapotranspiration estimated by water budgets across 46 rural basins in the Southeastern US. Georgia Water Resources Conference. Athens, GA
- Raulerson, S., Jackson, C.R., Melear, N.D., Younger, S.E., Dudley, M., Elliott, K.J. (2019). Impacts of understory rhododendron removal on Southern Appalachian Mountain stream temperatures. Poster presented at Georgia Water Resources Conference. Athens, GA
- Younger, S.E., D.P. Aubrey, and C.R. Jackson. (2018). Water budget comparison of early rotation *Pinus taeda* and *Eucalyptus benthamii* in the Upper Coastal Plain of South Carolina. Warnell Graduate Student Association. Warnell Graduate Student Symposium. Athens, GA
- Aubrey, D. P., C. R. Jackson, J.J. McDonnell, C.R. Miniati, P.V. Caldwell, and S.E. Younger. (2017). Hydrologic Budgets for Short Rotation Loblolly Pine and Eucalyptus. USDA-NIFA AFRI Sustainable Bioenergy Annual Project Director Meeting. Tampa, FL. (Invited)
- Younger, S.E., Jackson, C.R. (2017). Variation of Annual ET Determined from Water Budgets Across Rural Southeastern Basins Differing in Forest Types, Poster [H33B-1667] presented at 2017 Fall Meeting, AGU, New Orleans, LA, 11-15 Dec.
- Brockman, L.E., Younger, S.E., Jackson, C.R., McDonnell, J.J., Janzen, K.F., Aubrey, D.A. (2017). Differential soil water sourcing of managed Loblolly Pine and Sweet Gum revealed by stable isotopes in the Upper Coastal Plain, USA, Poster [H23H-1776] Fall Meeting, AGU, New Orleans, LA, 11-15 Dec.
- Dix, M.J., S.E. Younger, D.P. Aubrey. (2017). The Role of Plants in the Water and Carbon Cycles. Touch An Animal Day, August 26, Savannah River Ecology Lab, Aiken, S.C.
- Younger, S.E., D.P. Aubrey, and C.R. Jackson. (2017). Comparing Water Use of *Pinus taeda* and *Eucalyptus benthamii* in the Upper Coastal Plain of South Carolina: Experimental Design and Preliminary Data. Warnell Graduate Student Symposium, Athens, GA.
- Bitew, M.M., C.R. Jackson, K.B. Vache, N. Griffiths, G. Starr, J. McDonnell, B. Rau, S.E. Younger, and K. Fouts. (2016). Water Quantity and Water Quality Impacts of Intensive Woody Biomass Feedstock Production in the Southeastern USA. Poster. Fall Meeting, AGU, December 12-16, San Francisco, CA.
- Rasmussen, T.C., Deemy, J.B., Younger, S.E., Kirk, S.E., Brockman, L.E. (2016). HIS Design: Big Data that Supports Hydrologic Modeling from Continental to Hillslope Scales. Poster. Fall Meeting, AGU, December 12-16, San Francisco, CA.
- Bitew, M.M., C.R. Jackson, K. Vache, J.J. McDonnell, N. Griffiths, G. Starr, S. Younger, K. Fouts, and B. Rau. (2016). Modeling hydrologic impacts of intensive woody biomass feedstock production in the southeastern U.S. Short

- Rotation Woody Crop Science and Technology in an Uncertain Global Marketplace. Poster. 11th Biennial Short Rotation Woody Crops Operations Working Group Conference, October 11-13, Fort Pierce, FL.
- Younger, S., & Jackson, C. R. (2015). Comparison of evapotranspiration and forest cover type in the southeast United States: A long-term water budget approach.. Poster session presented at the meeting of American Geophysical Union Conference, Dec. 14-19, San Francisco, CA..
- Younger, S.E., Leigh, D.S. (2014). Sediment Source Ascription of Forest Roads in the Upper Little Tennessee River Basin. Talk at the Southeast Division of the Association of American Geographers. November 23-25.
- Grundstein, A., B. Avant, S. Younger, A. Ignatius, T. Rasmussen, T. Mote, J.M. Shepherd, (2012). A Methodology for Hydrological Modeling in Data Poor Regions using TRMM Precipitation Data and MERRA Reanalysis Meteorological Data. AAG Annual Meeting, 24-28 February, New York, NY.
- Rasmussen T.C., A. Grundstein, T. Mote, M. Shepherd, A. Ignatius, B. Avant, S. Younger, (2012). Remote Sensing-Based River Fluxes, National Nuclear Security Administration (NA-22), U.S. Department of Energy, Washington D.C., December 1, 2012.
- Younger, S.E., Foy, A.S. (2010). Conservation Land Use Analysis for the City of Radford, VA. Poster presented at the Big South Undergraduate Research Symposium April 9 & 10.
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Technical Reports

- Rasmussen TC, AY Özalp, SE Younger, BK Avant, JB Deemy, JA Floyd, HM Wolff. (2012). Groundwater Vulnerability: US Forest Service Southern Region, Technical Report, Warnell School of Forestry & Natural Resources, University of Georgia, Athens GA 30602
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Acknowledgements

- Natalie A. Griffiths, C. Rhett Jackson, Menberu M. Bitew, Allison M. Fortner, Kevin L. Fouts, Kitty McCracken, Jana R. Phillips, Water quality effects of short-rotation pine management for bioenergy feedstocks in the southeastern United States, In Forest Ecology and Management, Volume 400, 2017, Pages 181-198, ISSN 0378-1127, <https://doi.org/10.1016/j.foreco.2017.06.011>
- Griffiths NA, Rau BM, Vaché KB, et al. Environmental effects of short-rotation woody crops for bioenergy: What is and isn't known. GCB Bioenergy. 2018;00:1-19. <https://doi.org/10.1111/gcbb.12536>
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Professional Societies

American Geophysical Union

Teaching

Fall 2018- Laboratory section instructor for [Soils and Hydrology 3060](#). Taught a lab section including delivery of lab lectures and instruction. In addition to teaching with existing materials I contributed by [recreating old graphs for use with lab instruction](#).

Volunteer and Service Work

- Session technical support - 2017 Georgia Water Resources Conference, April 19 & 20, 2017
- American Water Resources Association - UGA Chapter Club President (2015-16)
- Session moderator – 2013 Georgia Water Resources Conference. April 10 & 11, 2013
- Field assistant to Ph.D. student Brad Suther – pilot study examining soil variability on a late Holocene point bar of the Pee Dee River - Marion, SC. (50 hours) January 9-14 2013
- Judge/Staff – 13th Annual Geography Undergraduate Conference. April 19th 2012
- Field assistant to Geography Masters Student Dustin Menhart, Measurement of Stream Cross Sections Using a Photographic Technique - Masters Thesis. December 2011
- Field assistant for Coweeta LTER - Measurement of stream cross-sections and channel slopes in support of ongoing intensive sampling. (11 hours) October 2011.
- Initiated reactivation of the Kappa Omicron Chapter of Gamma Theta Upsilon – Fall 2009
- Initiated and assisted in sponsoring and clean-up of city roadway. April 2009 – Spring 2010

- Co-organized a group of students to prepare for presentations at the Association of American Geographers National Annual Meeting, Washington, D.C. 2010
- Assisted in organizing Geography Awareness Week events. November 2010
- Geography Club (all officer roles) Radford University. Fall 2007 to Spring 2010
- Field assistant to Dr. Bernd H. Kuennecke to investigate landuse, and water/hydroelectric supply issues. Salinas De Garanda, Bolivar, Ecuador. (2 weeks) July 2009