

Seth E. Younger

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Education

- **University of Georgia** **Athens, GA**
Warnell School of Forestry and Natural Resources, in progress PhD 8/2014 – expected August 2020
 - **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
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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 isotopic water sourcing.
- **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

- Raulerson, S., Jackson, C.R., Melear, N.D., Younger, S.E., Dudley, M., Elliott, K.J. Do southern Appalachian Mountain summer stream temperatures respond to removal of understory rhododendron thickets? *Hydrological Processes*. 2020; 1– 16. <https://doi.org/10.1002/hyp.13788>
- Meles Bitew, M., Jackson, C.R., Goodrich, D.C., et al. Dynamic domain kinematic modelling for predicting interflow over leaky impeding layers. *Hydrological Processes*. 2020; 34: 2895– 2910. <https://doi.org/10.1002/hyp.13778>
- Meles, Menberu B., Seth E. Younger, C. Rhett Jackson, Enhao Du, and Damion Drover. 2020. Wetness Index based on Landscape position and Topography (WILT): Modifying TWI to reflect landscape position, *Journal of Environmental Management*, Volume 255, ISSN 0301-4797, <https://doi.org/10.1016/j.jenvman.2019.109863>
- Caldwell, P.V., Jackson, C.R., Miniat, 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
- Younger, S.E. 2019. 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., Aubrey, D.P., Jackson, C.R., (2019), Water budget comparison of two fast growing bioenergy tree species during canopy closure (Invited), B11J-2240 poster presented at 2019 Fall Meeting, AGU, San Francisco, CA, 9-13 Dec.
- 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. Miniat, 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.

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

Acknowledgments

- 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>

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