

# JEFF W. ATKINS

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## EDUCATION

- 2016 *Doctor of Philosophy*, Environmental Sciences, University of Virginia, Charlottesville, VA  
2004 *Bachelor of Arts*, English, Western Carolina University, Cullowhee, NC

## APPOINTMENTS

- 2021 – Pres Research Biologist, USDA Forest Service, Southern Research Station, Center for Forest Watershed Science, Savannah River Site  
2021 – Pres Assistant Professor, Department of Biology, Virginia Commonwealth University (affiliated faculty appointment)  
2021 Postdoctoral Fellow, University of Virginia, Department of Environmental Sciences  
2016 – 2020 Postdoctoral Fellow, Virginia Commonwealth University, Department of Biology  
2020 Adjunct Professor, Virginia Union University, Department of Natural Sciences  
2018 Adjunct Lecturer, University of Richmond, Department of Biology  
2016 – 2017 Visiting Scholar, University of Virginia, Department of Environmental Sciences  
2014 Graduate Research Fellow, Blandy Experimental Farm, University of Virginia  
2011 – 2019 Field Scientist, Shenandoah Watershed Study, University of Virginia

## PUBLICATIONS

- 2022 CM Gough, **JW Atkins**, RT Fahey, PS Curtis, G Bohrer, BS Hardiman, LJ Hickey, LE Nave, KM Neidermaier, CS Clay, JM Tallant, B Bond-Lamberty (Accepted) “Disturbance has variable effects on the structural complexity of a temperate forest landscape,” Accepted at *Ecological Indicators*, May 2022
- JA Walter, C Buelo, ML Pace, A Besterman, **JW Atkins** (2022) “An algorithm for detecting and quantifying disturbance and recovery in high-frequency ecological time series,” *Limnology & Oceanography Methods*, <https://doi.org/10.1002/lom3.10490>
- A Fotis, CE Flower, **JW Atkins**, CC Pinchot, S Matthews (2022) “The short-term and long-term effects of honeysuckle removal on canopy structural complexity and its implications for urban forest management,” *Forest Ecology and Management*.
- CA Silva, A Hudak . . . JW Atkins, (2022) “Treetop: A Shiny-based Application and R Package for Extracting Forest Information from LiDAR data for Ecologists and Conservationists,” *Methods in Ecology and Evolution*, <https://doi.org/10.1111/2041-210X.13830> [In the top 5% of all research outputs scored by Altmetric]
- JW Atkins**, JA Walter, AEL Stovall, RT Fahey, and CM Gough, (2022) “Power-law scaling relationships link forest complexity and canopy height across forest types,” *Functional Ecology* 36 (3), <https://doi-org.proxy.library.vcu.edu/10.1111/1365-2435.13983>
- JW Atkins**, AEL Stovall, CA Silva (2021) “Open-source tools in R for forestry and forest ecology,” *Forest Ecology and Management* 503, 119813. <https://doi.org/10.1016/j.foreco.2021.119813>

- RT Fahey, B Alveshare, **JW Atkins**, CM Gough, BS Hardiman, D Tanzer (2022) "An experimental approach for crown to whole-canopy defoliation in forests," *Canadian Journal of Forest Research* 52 (2), <https://doi.org/10.1139/cjfr-2020-0527>
- 2021 CM Gough, G Bohrer, BS Hardiman, L Nave, C Vogel, **JW Atkins**, B Bond-Lamberty, RT Fahey, A Fotis, M Grigri, LT Haber, J Yang, C Kleinke, K Maythes, K Nadelhoffer, E Stuart-Haëntjens, P Curtis (2021) "Disturbance-accelerated succession increases the production of a temperate forest," *Ecological Applications*, <https://doi.org/10.1002/eap.2417>
- EM Ordway, AJ Elmore, S Kolstoe, JE Quinn, R Swanwick, M Cattau, D Taillie, SM Guin, KD Chadwick, **JW Atkins**, RE Blake, M Chapman, K Cobourn, T Goulden, MR Helmus, K Hondula, C Hritz, J Jensen, JP Julian, Y Kuwayama, L Lulla, D O'Leary, DR Nelson, JP Ocon, S Pau, GE Ponce-Campos, C Portillio-Quintero, NG Pricope, RG Rivero, L Schneider, M Steele, MG Tulbure, MA Williamson, C Wilson (2021) "Leveraging the NEON Airborne Observation Platform for socio-environmental systems research," *Ecosphere* 12 (6), e03640, <https://doi.org/10.1002/ecs2.3640>
- JW Atkins**, EA Agee, A Barry, KM Dahlin, K Dorheim, MS Grigri, LT Haber, LJ Hickey, AG Kamoske, K Mathes, C McGuigan, E Paris, SC Pennington, C Rodriguez, A Shafer, A Shiklomanov, J Tallant, CM Gough, B Bond-Lamberty (2021) "The *fortedata* R package: open-science datasets from a manipulative experiment testing forest resilience," *Earth Systems Science Data* 13, 943–952. <https://doi.org/10.5194/essd-13-943-2021>
- JA Walter, AEL Stovall, **JW Atkins** (2021) "Vegetation structural complexity and biodiversity in the Great Smoky Mountains," *Ecosphere* 12 (3), e03390, <https://doi.org/10.1002/ecs2.3390>
- LaRue, E, J Rohr, J Knott, WK Dodds, KM Dahlin, JH Thorp, JS Johnson, MI Rodriguez Gonzalez, BS Hardiman, M Keller, RT Fahey, **JW Atkins**, F Tromboni, MD SanClements, GG Parker, J Liu, S Fei (2021) "The evolution of macrosystem biology," *Frontiers in Ecology and the Environment* 19 (1), 11-19, <https://doi.org/10.1002/fee.2288>
- 2020 **JW Atkins**, AEL Stovall, X Yang (2020) "Mapping Temperate Forest Phenology Using Tower, UAV, and Ground-Based Sensors," *Drones* 4 (3), 56: <https://doi.org/10.3390/drones4030056>
- CM Gough, **JW Atkins** and others (2020) "Forest structural complexity and biomass predict first-year carbon cycling responses to disturbance" *Ecosystems*, 37: <https://doi.org/10.1007/s10021-020-00544-1>
- CM Gough, **JW Atkins**, RT Fahey, BS Hardiman, E LaRue, (Accepted) "Community and structural constraints on the complexity of eastern North American forests," *Global Ecology and Biogeography*: <https://doi.org/10.1111/geb.13180>
- AN Shiklomanov, B Bond-Lamberty, **JW Atkins**, CM Gough (2020) "Structure and parameter uncertainty in centennial projections of forest community structure and carbon cycling." *Global Change Biology*: <https://doi.org/10.1111/gcb.15164>
- MS Grigri, **JW Atkins**, C Vogel, B Bond-Lamberty, CM Gough (2020) Aboveground wood production is sustained in the first growing season after phloem-disrupting disturbance." *Forests* 11 (12), 1306: <https://doi.org/10.3390/f11121306>
- EA LaRue, FW Wagner, S Fei, **JW Atkins**, RT Fahey, CM Gough, BS Hardiman (2020) Compatibility of Aerial and Terrestrial LiDAR for Quantifying Forest Structural Diversity. *Remote Sensing*, 12(9), 1407
- JW Atkins**, RT Fahey, BS Hardiman, L Haber, E Stuart-Haëntjens, E LaRue, B McNeil, D Orwig, AES Stovall, J Tallant, CM Gough (2020) "Application of multidimensional structural characterization to detect and describe moderate forest disturbance". *Ecosphere* 00(00): e03156. 10.1002/ecs2.3156A [**A Top Cited Article in Ecosphere 2020-2021**]
- Wales, S, M Kreider, **JW Atkins**, C Hulshof, RT Fahey, L Nave, K Nadelhoffer, CM Gough (2020) "Stand Age, Disturbance History, and the Temporal Stability of Forest Production," *Forest Ecology and Management* 460, 117865.

- Fahey, RT, **JW Atkins**, JL Campbell, LE Rustad, M Duffy, CT Driscoll, TJ Fahey, PG Shaberg (2020) "Effects of an Experimental Ice Storm on Forest Canopy Structure," *Canadian Journal of Forest Research* 50 (999), 136-145
- 2019 Fahey, RT, **JW Atkins**, CM Gough, BS Hardiman, L Nave, J Tallant, K Nadelhoffer, C Vogel, C Scheuermann, E Stuart-Haëntjens, LM Haber, A Fotis, R Ricart, P Curtis (2019) "Defining a spectrum of integrative trait-based vegetation canopy structural types," *Ecology letters* 22 (12), 2049-2059 <https://doi.org/10.1111/ele.13388>
- Gough, CM, **JW Atkins**, RT Fahey, BS Hardiman (2019) "High rates of primary production in structurally complex forests," *Ecology* 100 (10), <https://doi.org/10.1002/ecs2.2864> [**In the top 5% of all research outputs scored by Altmetric**]
- Hickey, LJ\*, **JW Atkins**, RT Fahey, MT Kreider, CM Gough (2019) "Contrasting development of canopy structure and primary production in planted and naturally regenerated red pine forests," *Forests*, 10 (7), 566. <https://doi.org/10.3390/f10070566> [\*undergraduate mentee]
- Atkins, JW** and E Agee (2019) "Phenological and structural linkages to seasonality inform productivity relationships in the amazon rainforest." *New Phytologist* 222 (3), 1165-1166. <https://doi.org/10.1111/nph.15783>
- 2018 **Atkins, JW**, HE Epstein, DL Welsch (2018) "Characterization of understory shrub expansion in a West Virginia watershed from 1986 – 2011 using Landsat derived vegetation indices," *Ecosphere*, 9 (10). <https://doi.org/10.1002/ecs2.2404>
- BS Hardiman, EA LaRue, **JW Atkins**, RT Fahey, FW Wagner, CM Gough (2018) "Spatial Variation in Canopy Structure Across Forest Landscapes" *Forests*, 9, 474. <https://doi.org/10.3390/f9080474>
- LaRue, EL, **JW Atkins**, K Dahlin, RT Fahey, S Fei, CM Gough, BS Hardiman (2018) "Linking Landsat to terrestrial LiDAR: Vegetation metrics of forest greenness are correlated with canopy structural complexity" *International Journal of Applied Earth Observations and Geoinformation*, 73, 420-427. DOI: [10.1016/j.jag.2018.07.001](https://doi.org/10.1016/j.jag.2018.07.001)
- Atkins, JW**, G Bohrer, RT Fahey, BH Hardiman, T Morin, A Stovall, N Zimmerman, CM Gough (2018) "Quantifying forest and canopy structural complexity metrics from terrestrial LiDAR data using the *forestr* R package" *Methods in Ecology and Evolution*, 9 (10), 2057-2066. DOI: [10.1111/2041-210X.13061](https://doi.org/10.1111/2041-210X.13061) [**Cover Image of MEE for October, 2018 Issue**]
- Atkins, JW**, RT Fahey, BH Hardiman, CM Gough (2018) "Canopy structural complexity predicts forest canopy light absorption at plot to sub-continental scales" *JGR-Biogeosciences*, 123 (4), 1387-1405. DOI: [10.1002/2017JG004256](https://doi.org/10.1002/2017JG004256) [**AGUniverse Research Highlight - May, 3, 2018**]
- Fahey, RT, C Kern, Y Dickinson, B Alveshire, CM Gough, BH Hardiman, W Keeton, K Puettmann, M Saunders, **JW Atkins**, C Webster, J Burton, A Larson, A D'Amato, B Palik (2018) "Shifting conceptions of complexity in forest management and silviculture," *Forest Ecology and Management*, 421, 59-71. DOI: [10.1016/j.foreco.2018.01.011](https://doi.org/10.1016/j.foreco.2018.01.011) [**Most Cited Article Acknowledgement 2018-2020**]
- 2017 **Atkins, JW**, HE Epstein, DL Welsch (2017) "Seasonal and inter-annual variability in litter decomposition and nitrogen availability in a mid-Appalachian watershed." *Ecosphere* 8 (9). DOI: [10.1002/ecs2.1908](https://doi.org/10.1002/ecs2.1908)
- JA Walter, JC Neblett\*, **JW Atkins**, HE Epstein (2017) "Regional and watershed scale analysis of current and future suitable habitat for red spruce in the central Appalachian Mountains." *Plant Ecology* 218 (3), 305-316. DOI: [10.1007/s11258-016-0687-5](https://doi.org/10.1007/s11258-016-0687-5) [\*undergraduate mentee]
- 2015 **Atkins, JW**, HE Epstein, DL Welsch (2015) "Vegetation and elevation influence the timing and magnitude of soil CO<sub>2</sub> efflux in a humid, topographically complex watershed." *Biogeosciences*, 12 (10), 2975-2994. DOI: [10.5194/bg-12-2975-2015](https://doi.org/10.5194/bg-12-2975-2015)

## PUBLICATIONS (Technical Reports, White Papers, etc.)

- 2021 E Graham, [et al. 35 others, including **JW Atkins\***] (2021) "Towards a unifying framework of disturbance ecology through crowdsourced science," *Frontiers in Ecology and Evolution* 9, 76 \**Consortium authorship*

2019 NYDF Assessment Partners. (2019). Protecting and Restoring Forests: A Story of Large Commitments yet Limited Progress. New York Declaration on Forests Five-Year Assessment Report. Climate Focus. Accessible at [forestdeclaration.org](http://forestdeclaration.org). [Contributing author]

Shiklomanov AN, B Bond-Lamberty, CM Gough, **JW Atkins** (2018) "Investigating the Canopy Structural Fingerprints of Disturbance History." NASA Biological Diversity and Ecological Forecasting Program.

## PUBLICATIONS (In Review)

**JW Atkins**, [et al. 18 others] (In Review) "Measuring ecosystem structural diversity: advances, limitations, and possibilities," Submitted to Forest Ecology and Management in May 2022

E Crockett, **JW Atkins**, Q Guo, G Sun, S Ollinger, CA Silva, H Tan, C Woodall, J Holgerson, J Xiao (In Review) "Impacts of structural and species diversity on aboveground carbon storage in temperate forests: evidence from GEDI and forest inventory data," Submitted to Global Change Biology

AEL Stovall and **JW Atkins**, (In Review) "Assessing low-cost terrestrial laser scanners for deriving forest structure parameters," Submitted to Remote Sensing Letters

JM Sarneel, MM Hefting, T Sandén, ... **JW Atkins** ... and ~90 others. "Different drivers for different decomposition phases in a global experiment," In review at PNAS

EA LaRue, RT Fahey, B Alvshare, **JW Atkins** . . . and ~12 others, (In Review) "A theoretical framework for the ecological role of structural diversity," Submitted to Frontiers in Ecology and the Environment

## GRANTS AND FUNDING (Total: \$832,407—external: \$669,827; internal: \$162,580)

2022 Joint Fire Science Program, "EMS4D: Multi-scale fuel mapping and decisions support system for next generation of fire management," PIs: CA Silva (U of Florida), AT Hudak (USFS); CO-PIs: RA Parson (USFS), A Susaeta (U of Florida); Collaborators: **JW Atkins**, J Vogel (USFS), C Klauberger (UFSJ), B Bright (USFS), S Flanary (USFS), E Broadbent (U of Florida), F Mauro (U of Oklahoma), M Christiano (USFS), K Sauerbrey (USFS), A Spannuth (NAU), A Watts (UN), A Cardil (UdL). \$443,199.

USDA Forest Service Southern Research Station, "A Forest Microclimate Observation Network for Southeastern US Forests." PI: **Jeff W. Atkins**. \$153,250

2021 Oak Ridge Institute for Science and Education (ORISE), "Advanced remote sensing for forest restoration: quantifying biodiversity, productivity, and resilience under a changing environment." Co-PIs: Qinfeng Guo (USFS-EFETAC) and **Jeff W. Atkins**, Collaborators: Jingfeng Xiao (UNH), Steve McNulty (USFS-EFETAC), Ge Sun (USFS-EFETAC), William Hargrove (USFS-EFETAC), Jennifer Costanza (USFS-RTP), Carl Trettin (USFS-Santee EF), Andrew Oishi (USFS-Coweeta), John Willis (USFS-Auburn), Dale Brockway (USFS-Auburn), and Carlos A. Silva (UF). \$211,362.

2019 Huron Mountain Club. *Microclimate response of old-growth forests in the Upper Peninsula of Michigan to extreme heat events*. PI: **JW Atkins**, Collaborators: AEL Stovall (NASA – Goddard), E LaRue (Purdue), EA Agee (Oak Ridge National Lab). \$4,800

2017 Appalachian Highlands Science Learning Center Research Program/Great Smoky Mountains National Park. *Mapping forest structural complexity across complex terrain in the highly diverse forest of the Great Smoky Mountains National Park*. PIs: **JW Atkins**, JA Walter (Univ. of Virginia), and AEL Stovall (Univ. of Virginia). \$1,965

VCU Post-Doctoral Travel Award, \$700

2016 VCU Post-Doctoral Travel Award, \$700

2014 Open Access Fund Award, University of Virginia Library, \$1,190

Moore Award. *Methane and carbon cycling in a Virginia ephemeral wetland*. Department of Environmental Sciences, University of Virginia. \$5,000.

Jeff Atkins CV ([jeffrey.atkins@usda.gov](mailto:jeffrey.atkins@usda.gov))

- 2012 Appalachian Stewardship Foundation, *Evaluating Carbon and Water Cycling in the Weimer Run Watershed, West Virginia*. Co-PIs: HE Epstein (Univ. of Virginia), **JW Atkins** \$8,500
- 2011 Robert J. Huskey Travel Fellowship, Graduate School of Arts and Sciences, University of Virginia, \$240.  
Exploratory Research Grant. *Mechanisms influencing surface soil CO<sub>2</sub> efflux in respect to elevation and vegetation gradients in a complex watershed*. Department of Environmental Sciences, University of Virginia, \$1,500.

## INVITED SEMINARS AND PRESENTATIONS

- 2022 “Forest and Forest Ecology Analysis in R,” University of Florida, April, 2022  
“Lidar and Forest Disturbance,” USDA Forest Service, Forest Remote Sensing Technical Working Group 2022 Annual Meeting, March 8-9, 2022. Virtual Meeting  
“Considerations, Limitations, and New Directions in Characterizing Forest Structural Diversity,” Integrated Digital Forestry Initiative, Purdue University, Feb. 17, 2022
- 2020 “The Ecological Important of Forest Structural Complexity,” Forest Structural Diversity Workshop, Virtual Meeting, May 18-19. **\*Keynote Address**  
“Interdisciplinary applications of LiDAR remote sensing: Where have we been and where can we go?” SESYNC Leveraging NEON for Socio-Environmental Synthesis Feb 10-12, 2020, Annapolis, MD
- 2019 “Across scales: understanding ecosystem function by quantifying structure.” Oak Ridge National Lab  
“Podcasting and science communication,” Science Communication Graduate Seminar at Iowa State University. Students from Biology and Environmental Science interdepartmental graduate programs  
“Ecological Informatics: From Sensors to Synthesis,” Department of Forest Resources and Environmental Conservation, Virginia Polytechnic Institute and State University  
“Integration across scales: ecological informatics and novel sensor applications to address the “big” questions,” Department of Forestry and Natural Resources Seminar Series, Purdue University  
“Ecological Informatics: From Sensors to Synthesis,” Education Seminar Series, Purdue University
- 2018 “Forest structure and function relationships at the continental scale,” Biology Seminar Series, Virginia Commonwealth University
- 2016 “The role of complex topography in carbon and water cycling,” Biology Seminar Series, Virginia Commonwealth University  
“Where you are on the landscape matters...sometimes!” Up-Goer Five Challenge: Using Common Language to Communicate Science Ecological Society of America Annual Meeting in Ft. Lauderdale, FL

## PRESENTATIONS

- 2021 **JW Atkins**, C Clay, CM Gough, LM Haber, LJ Hickey, KC Mathes, K Niedermaier, “Promoting forest carbon cycling resilience to disturbance: Lessons learned and management recommendations from the US-UMB and -UMd Ameriflux site,” Ameriflux Annual Meeting, Virtual (Talk)  
**JW Atkins**, A Shiklomanov, BP Bond-Lamberty, CM Gough, “Canopy structural change following disturbance modulates forest microclimates,” Ameriflux Annual Meeting, Virtual (Poster)
- 2020 **JW Atkins**, CM Gough, BP Bond-Lamberty, “Does existing system complexity convey resistance?: Canopy structural change during the first two years of the Forest Resistance Threshold Experiment (FoRTE),” AGU Fall Meeting, Virtual (Talk)

- SC Pennington, **JW Atkins**, R Rich, A Hopple, CM Gough, and BP Bond-Lamberty, "From field to analysis: Two models for data distribution in a standardized and FAIR way," AGU Fall Meeting, Virtual (Poster)
- LM Haber, **JW Atkins**, BP Bond-Lamberty, MS Grigri, A Barry, LJ Hickey, A Shafer, and CM Gough, "Subcanopy leaf functional trait response to disturbance at different severities and implications for ecosystem production stability," AGU Fall Meeting, Virtual (Poster)
- 2019 **JW Atkins**, E Paris, CM Gough, "Structural changes from disturbance: first year response to the FoRTE experiment," Ecological Society of America Annual Meeting, Louisville, KY
- 2018 **JW Atkins**, A Stovall, G Clark, BH Hardiman, CM Gough, "Quantifying forest structure, complexity, and biomass using the Leica BLK360 terrestrial laser scanner," ForestSAT Conference, College Park, MD
- JW Atkins**, RT Fahey, BH Hardiman, E LaRue, E Stuart-Haëntjens, B McNeil, D Orwig, L Turner, A Stovall, CM Gough, "Structural Signatures of Forest Disturbance," ForestSAT Conference, College Park, MD
- JW Atkins**, RT Fahey, BS Hardiman, CM Gough "Coupling ecosystem complexity with leaf to canopy light and carbon cycling dynamics," Ecological Society of America Annual Meeting, New Orleans, LA
- EA LaRue, **JW Atkins**, KM Dahlin, RT Fahey, S Fei, CM Gough, BS Hardiman "Linking Landsat to terrestrial LiDAR: Spectral indices of greenness and brightness are correlated with canopy structural complexity," Ecological Society of America Annual Meeting, New Orleans, LA
- CM Gough, RT Fahey, **JW Atkins**, BS Hardiman "The imperative of network ecology to advancing continental knowledge of carbon cycling-ecosystem structure relationships," Ecological Society of America Annual Meeting, New Orleans, LA
- L Haber, **JW Atkins**, CM Gough "Ecosystem structure and function: (e)merging models across scales," Ecological Society of America Annual Meeting, New Orleans, LA
- JW Atkins**, RT Fahey, CM Gough, BS Hardiman "The forest and the trees: A look at how ecosystem complexity is shaped by landscape and disturbance," University of Virginia Forest and Water Use Symposium
- 2017 **JW Atkins**, RT Fahey, CM Gough, BS Hardiman "Canopy structural complexity predicts forest canopy light interception at the continental scale," American Geophysical Union Fall Meeting, San Francisco, CA
- CM Gough, BP Bond-Lamberty, E Stuart-Haëntjens, **JW Atkins**, L Haber, RT Fahey "Carbon cycling at the tipping point: Does ecosystem structure predict resistance to disturbance?" American Geophysical Union Fall Meeting, San Francisco, CA
- RT Fahey, **JW Atkins**, CM Gough, BS Hardiman, E Stuart-Haëntjens, DA Orwig, JL Campbell, M Duffy "Effects of different types of moderate severity disturbance on forest structural complexity and ecosystem functioning: A story of ice and fire," American Geophysical Union Fall Meeting, San Francisco, CA
- JW Atkins**, RT Fahey, CM Gough, BS Hardiman "Using portable canopy LiDAR (PCL) to measure canopy structural complexity: forest structure-function relationships at the continental scale" The Royal Society, The Terrestrial Laser Scanning Revolution in Forest Ecology, Buckinghamshire, UK
- 2016 **JW Atkins**, RT Fahey, CM Gough, BS Hardiman "Canopy structural complexity as a continental predictor of primary production: Using NEON to transform understanding of forest structure-function" 2016 American Geophysical Union, San Francisco, CA
- Hardiman, BS, **JW Atkins**, K Dahlin, RT Fahey, CM Gough "Canopy structural complexity influences forest canopy reflectance: linking terrestrial LiDAR with Landsat observations" 2016 American Geophysical Union Fall Meeting, San Francisco, CA
- Fahey, RT, J Tallant, CM Gough, BS Hardiman, **JW Atkins**, CM Scheuermann "Comparison of Aerial and Terrestrial Remote Sensing Techniques for Quantifying Forest Canopy Structural Complexity and Estimating Net Primary Productivity" American Geophysical Union Fall Meeting, San Francisco, CA

- Atkins, JW**, CM Gough, P Buckaveckas, M Beck “Canopy complexity and chronic nitrogen amendments constrain the primary production of a Mid-Atlantic forest: A long-term study at the nexus of environmental and ecological change” Ecological Society of America Annual Meeting, Ft. Lauderdale, FL
- Gough, CM, RT Fahey, BS Hardiman, CM Scheuermann, **JW Atkins** “(Why) does physical complexity matter?: Forest physical structure and carbon cycling,” INTERface workshop, Ft. Lauderdale, FL
- 2015 **Atkins, JW**, HE Epstein, DL Welsch “Characterization of understory shrub expansion in a West Virginia watershed from 1986 – 2011 using Landsat derived vegetation indices,” American Geophysical Union Fall Meeting, San Francisco, CA
- Atkins, JW**, HE Epstein, DL Welsch “Decomposition varies spatially and temporally by vegetation cover and elevation in a West Virginia watershed,” Ecological Society of America Annual Meeting, Baltimore, MD
- Atkins, JW**, AM Riscassi “Impact of episodic acidification events on brook trout in Shenandoah National Park,” Robert J. Huskey Research Exhibition, University of Virginia
- 2014 **Atkins, JW**, HE Epstein, DL Welsch “Carbon dioxide and methane fluxes from the transitional zone of a Virginia ephemeral wetland,” American Geophysical Union Fall Meeting, San Francisco, CA
- Ko, SM\*, HE Epstein, **JW Atkins** “Effects of elevation and vegetation interactions on the organic layer in Weimer Run watershed, West Virginia,” Enviroday – Environmental Sciences Student Research Symposium, University of Virginia [\*undergraduate mentee]
- Neblett, JC\*, JA Walter, JW Atkins, HE Epstein “Red spruce in the Weimer Run watershed, WV: suitability under current conditions,” Enviroday – Environmental Sciences Student Research Symposium, University of Virginia [undergraduate mentee]
- 2013 **Atkins, JW**, HE Epstein, DL Welsch “Impacts of vegetation heterogeneity and landscape position on carbon and water cycling in a complex, humid watershed in West Virginia,” American Geophysical Union Fall Meeting, San Francisco, CA
- Atkins, JW**, DL Welsch, HE Epstein “Inter-annual variation in precipitation affects the spatial heterogeneity of soil CO<sub>2</sub> efflux in a West Virginia watershed,” Ecological Society of America Annual Meeting, Minneapolis, MN
- Atkins, JW** “Implications of fundamental state changes on red spruce restoration attempts in the central Appalachians,” Robert J. Huskey Research Exhibition, University of Virginia
- Atkins JW**, DL Welsch, HE Epstein “Inter-annual variation in precipitation affects the spatial heterogeneity of soil CO<sub>2</sub> efflux in a West Virginia watershed,” Environmental Chemistry and Microbiology Student Symposium, Pennsylvania State University
- Atkins JW**, DL Welsch, HE Epstein “How the lateral redistribution of soil moisture within a humid, temperate watershed affects carbon cycling,” Enviroday – Environmental Sciences Student Research Symposium, University of Virginia
- 2012 **Atkins JW**, HE Epstein, DL Welsch “Mechanisms influencing surface soil CO<sub>2</sub> efflux in respect to elevation and vegetation gradients in a complex watershed,” The Fourth Annual FREC Graduate Research Symposium, Department of Forest Resources and Environmental Conservation, Virginia Tech
- Atkins JW**, HE Epstein, DL Welsch “Evaluating the controls on carbon and water cycling in complex terrain: what goes in, must come out,” Robert J. Huskey Research Exhibition, University of Virginia
- Atkins JW**, HE Epstein, DL Welsch “Evaluating the effects of complex terrain on carbon and water cycling in a forested watershed in West Virginia,” Enviroday – Environmental Sciences Student Research Symposium, University of Virginia
- 2011 **Atkins JW**, HE Epstein, DL Welsch (2011) “Mechanisms influencing surface soil CO<sub>2</sub> efflux in respect to elevation and vegetation gradients in a complex watershed,” American Geophysical Union Fall Meeting, San Francisco, CA

**Atkins JW**, HE Epstein, DL Welsch (2011) “Carbon and water cycling in a high-altitude watershed in West Virginia,” Enviroday – Environmental Sciences Student Research Symposium, University of Virginia

2003 **Atkins JW** “Joseph Meeker and John Steinbeck: the importance of place in *Cannery Row*,” National Conference on Undergraduate Research, University of Utah

## AWARDS AND RECOGNITIONS

2015 Graduate Student Association Award, Department of Environmental Sciences, University of Virginia

2015 First place presentation, Biology and Biomedical Sciences, Robert J. Huskey Research Exhibition

2014 Trout Unlimited Award, Trout Unlimited Virginia Area Council

2012 Tomorrow’s Professor Today, Teaching Resource Center, University of Virginia

2012 Third place presentation, Physical Science and Math, Robert J. Huskey Research Exhibition

1999 Founder’s Scholarship, Honors College, Western Carolina University

## PROFESSIONAL SERVICE

Associate Editor for AoB Plants, Forest Science, and PLOS One. Review Board Member for Remote Sensing

Grant Reviewer: National Science Foundation (2021, 2022); Natural Environmental Resource Council (UK)(2020, 2021)

Peer Reviewer for Agricultural and Forest Meteorology, AoB Plants, Biogeosciences, Biogeochemistry, Drones, Ecosphere, Forests, Forest Ecology and Management, Global Change Biology, Journal of Ecology, JGR-Biogeosciences, Journal of Vegetation Science, Nature Ecology and Evolution, New Phytologist, Science of the Total Environment, Remote Sensing, and Water

National Ecology Observatory Network (NEON) Ambassador – a program designed to promote and extend the reach of NEON data, science, and tools <https://www.neonscience.org/neon-ambassador-program> (2021 – Present)

AmeriFLUX Diversity, Equity and Inclusion Committee <https://ameriflux.lbl.gov/community/group/diversity-equity-and-inclusion-committee/> (2021 – Present)

Contributor to NEON Remote Sensing Educational resources: *Calculating Forest Structural Diversity Metrics from NEON LiDAR Data*: <https://www.neonscience.org/structural-diversity-discrete-return>

Ecological Society of America Session Chair

- Cutting-Edge Remote Sensing Applications in Ecology: Spanning Scales, Sensors, and Systems (2018, 2019, 2020)

American Geophysical Union Session Chair

- Novel methods of connecting ecosystem structure to function with remote sensing (2018, 2019)
- Impacts to Water and Nutrient Cycles in Ecosystems Following Disturbance (2017)
- Towards better understanding of climate variability: from Ecosystem processes to agricultural adaptation and decision-making (2015-2017)

NACP/Ameriflux PI Breakout Session Chair

- Translational Ecology for Terrestrial Carbon Management (2017)

University of Virginia Center for Teaching Excellence

- August Teaching Workshop seminars “The First Days of Class,” and “Troubleshooting Teaching Challenges” (2014, 2015)
- Foundations of Scholarly Teaching Seminar (six-week mentoring of new graduate students) (2015)

Relevant Volunteer Experience

Jeff Atkins CV ([jeffrey.atkins@usda.gov](mailto:jeffrey.atkins@usda.gov))



- EEB Mentor (2018)
- Judge, ESA Physiological Ecology Billings Award and New Phytologist Poster Award (2018)
- Judge, ESA Biogeosciences Elizabeth Sulzman Award (2017)
- Judge Virginia Piedmont Regional Science Fair (Environmental Management, NOAA “Taking the Pulse of the Environment Award,” and Association of Women Geoscientists, “Women in Geoscience Award”) (2013, 2017)
- Belowground Carbon Methods Workshop (<https://youtu.be/MI09tfGSSUY>) (2017)
- Student Volunteer American Geophysical Union Fall Meeting (2013)
- Session Presider Ecological Society of America Annual Meeting (2013)
- Planting Science Mentor (2015-2016)
- Coldwater Conservation Research Initiative, Waynesboro, Virginia (2012)
- Dr. Doughnuts, Department of Environmental Sciences, University of Virginia (2011 – 2015)

Society memberships: Ecological Society of America and The American Geophysical Union

Skype a Scientist (<https://www.skypeascientist.com/>) volunteer—meet with classrooms (K-12) to answer questions about science and being a scientist (2019-2021)

## PROFESSIONAL DEVELOPMENT AND TRAINING

2016 NEON Data Institute, Boulder, CO

2015 Potsdam Flux Course, Potsdam, Germany

International Geosphere-Biosphere Program (IGBP) Future Earth Early Career Workshop, Palo Alto, CA

Tomorrow’s Professor Today; Teaching Resource Center, University of Virginia (Two-year training and mentorship program)

Alan Alda Communicating Science Workshop, Charlottesville, VA

## TEACHING

2020 Adjunct Professor, Virginia Union University  
NS 260: Introduction to Environmental Science

2018 Lecturer, University of Richmond  
BIO 109: Environmental Biology (Two Sections)

2017 Instructor of Record, Virginia Commonwealth University  
BIO 475: Capstone Seminar in Biology: Science and Society

2015 Instructor  
University of Virginia Center for Teaching Excellence FOSTer Seminar

2010 – 2015 Graduate Teaching Assistant, University of Virginia  
EVSC 1020: Practical Concepts in Environmental Sciences  
EVSC/BIO: 4559: Forest Sampling  
EVSC 5220: Terrestrial Ecology Lab  
EVSC 3600: Hydrology Lab

2010 – 2011 Athletics Tutor, University of Virginia – Athletic Academic Affairs Office  
Ecology, Environmental Sciences, Hydrology, Biology

2009 – 2010 After-School Tutor, Jackson County Public Schools  
Math, Science, English, History, Life Skills

2001 – 2004 Writing Tutor, University Writing Center – Western Carolina University  
Focus in History, Composition, Literature, Rhetoric

## ADDITIONAL RESEARCH EXPERIENCE

Jeff Atkins CV ([jeffrey.atkins@usda.gov](mailto:jeffrey.atkins@usda.gov))

- 2012 Western Atlantic Climate Study (WACS), Seawater Aerosol Generator laboratory, NOAA Ron Brown, Research Assistant
- 2011 – 2018 National Atmospheric Deposition Program (NADP), Station VA00

## SCIENCE COMMUNICATION AND OUTREACH

- 2017 – Pres Co-Host of *Major Revisions*, a science and ecology-based podcast (>60 episodes, >35k listens, 8K downloads, >500 subscribers) [www.majorrevisionsshow.com](http://www.majorrevisionsshow.com)
- 2015 – 2019 PLOS Ecology Community Site Editor and Contributor (Views up to 100K per article) ([blogs.plos.org/ecology](http://blogs.plos.org/ecology))
- 2018 – 2019 Associate Editor, Rapid Ecology, a community science blog for all ecologists (>5k views per article) ([www.rapidecology.com](http://www.rapidecology.com))

## OTHER EXPERIENCE

- 2017 – 2019 City of Charlottesville Water Resources Protection and Advisory Committee Board Member
- 2015 Environmental Science Instructor, 4 Star Summer Camps
- 2008 – 2010 Qualified Mental Health Professional, Jackson County Psychological Services, Sylva, NC
- 2006 – 2008 Associate Mental Health Professional, Jackson County Psychological Services, Sylva, NC.
- 2004 – 2006 Direct Care Worker, Meridian Behavioral Health Services, Sylva, NC.
- 2003 – 2004 Features Editor, Copy Editor, Writer Western Carolinian/WC Newsmagazine, Western Carolina University, Cullowhee, NC.
- 2002 – 2004 Editor, NOMAD literary magazine, Western Carolina University.

## PRESS

- "Under the Canopy: Measuring Light," Virginia Commonwealth University Nature Walks  
<https://vcu.exposure.co/nature-walks>
- "Carbon Fluxes from Mountainous Soil," Environmental Sciences at the University of Virginia 2013-14 Annual Report  
[http://www.evsc.virginia.edu/wp-content/uploads/UVAES\\_2015annualreport\\_lores.pdf](http://www.evsc.virginia.edu/wp-content/uploads/UVAES_2015annualreport_lores.pdf)
- "U.Va.'s Long-Term Mountain Stream Studies Reveal Changing Conditions," UVA Today  
<http://news.virginia.edu/content/uva-s-long-term-mountain-stream-studies-reveal-changing-conditions>

## COMMUNITY SERVICE

- Garden Committee, Venable Elementary School, Charlottesville, Virginia (2012 – 2013)
- Board Member for City of Charlottesville Water Resources and Stormwater Advisory Board (2017 – 2019)
- Little League Baseball Coach, McIntire Little League, Charlottesville, VA (2016-2018)
- Youth Soccer Coach (U8 and U10), Soccer Organization of Charlottesville/Albemarle (2014 – 2016)

## MENTORSHIP

Postdoctoral Scholars/Fellows

- Erin Crockett, Ph.D. ORISE Fellow (2021-2022)

MS Committee

- Michael Beck (VCU, M.S. Student) "Nitrogen cycling at the VCU Rice Rivers Center" (2017)

Undergraduate Mentorship and Advisement

Jeff Atkins CV ([jeffrey.atkins@usda.gov](mailto:jeffrey.atkins@usda.gov))

- Clemson Engineering Capstone Project (2021)
- Evan Paris (Vassar College), REU Program at the University of Michigan Biological Station (2019)
- Laura Hickey (VCU), REU Program at the University of Michigan Biological Station (2018)
- Mark Kreider (Goshen College), REU Program at the University of Michigan Biological Station, “Effects of biological and physical complexity on carbon storage in mixed and single-species dominated forests,” (Co-Mentored with Dr. Christopher Gough) (2018)
- Molly Siebers (UVA, B.S. Student), “Rhododendron expansion and change in winter NDVI in the Weimer Run watershed” (2015)
- Emily Salle (UVA, B.S. Student, 2015), “Spatial variation in methane fluxes from an ephemeral wetland using soil incubations”
- Jorge Ruiz (University of Puerto Rico-Mayaguez), REU program Blandy Experimental Farm, “Spatio-temporality of the earthworm community in Lake Arnold” (2014)
- Sang Mee Ko (UVA, B.S. Student), Thesis: “Effects of elevation and vegetation interactions on organic layer in Weimer Run Watershed, West Virginia” (2014)
- Jessica Neblett (UVA, B.A. Student), Thesis: “Red spruce: current and future suitability in the Weimer Run watershed, West Virginia,” (Co-Mentored with Jonathan Walter) (2014)
- Sarah Friedlander (UVA, B.A. Student), Thesis: “Variable flow relationships with Cl<sup>-</sup> concentrations in four mountain catchments,” (Co-Mentored with Dr. Rick Webb), (2013)

## OPEN SCIENCE PRODUCTS

- `forestr`: Ecosystem and Canopy Structural Complexity Metrics from LiDAR. R package version 2.0.2. <https://CRAN.R-project.org/package=forestr> [github.com/atkinsjeff](https://github.com/atkinsjeff)
- `fortedata`: Data from the Forest Resilience Threshold Experiment (FoRTE) <https://github.com/FoRTEExperiment/fortedata>
- `pcl`: Forest Structural Complexity Data from Terrestrial LiDAR for North America. R Package version 0.1.0. <https://github.com/atkinsjeff/pcl>
- `Treetop`: A Shiny-based Application for Extracting Forest Information from LiDAR data <https://cran.r-project.org/web/packages/treetop/>
- `ForestryAnalysisInR`: A Shiny-based catalog of R packages for forestry and forest ecology research <https://atkinsjeff.shinyapps.io/ForestAnalysisInR/>