

**C. NATHAN JONES, PhD**  
**POSTDOCTORAL FELLOW**  
The National Socio-Environmental Synthesis Center  

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**EDUCATION**

- 2015            PhD, *Biological Systems Engineering*, Virginia Tech (Mentor: Durelle Scott)
- 2010            BS, *Biological Engineering (Summa Cum Laude)*, University of Arkansas

**PROFESSIONAL APPOINTMENTS**

- 2019-            Assistant Professor, Department of Biological Sciences, University of Alabama, Tuscaloosa, AL
- 2017-2019      Postdoctoral Fellow, University of Maryland and The National Socio-Environmental Synthesis Center, Annapolis, MD (Mentor: Margaret Palmer)
- 2015-2017      Postdoctoral Researcher, Forest Resources and Environmental Conservation, Virginia Tech, Blacksburg, VA (Mentor: Daniel McLaughlin)
- 2010-2015      Graduate Research and Teaching Assistant, Department of Biological Systems Engineering, Virginia Tech, Blacksburg, VA
- 2009-2010      Natural Resource Specialist, Watershed Conservation Resource Center, Fayetteville, AR  
(9 months)
- 2007-2010      Research Technician, Center for Agricultural and Rural Sustainability, University of Arkansas, Fayetteville, AR (Supervisor: Marty Matlock)

**RESEARCH FOCUS**

Hydrology and water quality; Ecological engineering – stream and wetland restoration; Watershed management; Environmental tracers; Hydrologic modeling; Geospatial analysis

**AWARDS AND HONORS**

Fellowships:

- 2010-2014      Institute of Critical and Applied Technology Doctoral Fellowship, 2010 College of Agriculture and Life Sciences Recipient, Virginia Tech
- 2008-2010      USEPA Greater Research Opportunity Fellowship (Undergraduate)

Awards:

- 2015            PhD Student of the Year, Biological Systems Engineering, Virginia Tech
- 2010            Undergraduate Student of the Year, Biological Engineering, Univ. of Arkansas
- 2010            NSF Graduate Research Fellowship Program, Honorable Mention

## **PUBLICATIONS**

\*Indicates pre-doctoral student

- 2019      **Jones CN**, Ameli AA, Neff BP, Evenson GR, McLaughlin DL, Golden HE, Lane CR. Modeling connectivity of non-floodplain wetlands: Insights, approaches, and recommendations. *Journal of American Water Resources Research*. DOI: 10.1111/1752-1688.12735.
- Jones CN**, Nelson NG, Smith LL. Featured Collection Introduction: The Emerging Science of Aquatic Systems Connectivity I. *Journal of American Water Resources Research*. DOI: 10.1111/1752-1688.12739
- Schulte ML\*, McLaughlin DL, Wurster FC, Varner MJ, Stewart RD, Aust WM, **Jones CN**, Gile B\*. Short- and long-term hydrologic controls on smoldering fire in wetland soils. *International Journal of Wildland Fire*. DOI: 10.1071/WF18086
- Schulte ML\*, McLaughlin DL, Wurster FC, Balentine K, Varner MJ, Aust WM, Stewart RD, **Jones CN**. Linking ecosystem function and hydrologic regime to inform restoration of a forested peatland. *Journal of Environmental Management*. DOI: 10.1016/j.jenvman.2018.12.042
- 2018      Pieper KJ, Tang M, **Jones CN**, Weiss S, Greene A, Mohsin H\*, Parks J, Edwards MA. Impact of road salt on water quality and corrosion in drinking water from private wells. *Environmental Science and Technology*. DOI: 10.1021/acs.est.8b04709
- Evenson GR, **Jones CN**, McLaughlin DL, Golden HE, Lane CR, Devries B, Alexander LC, McCarty GW, Sharifi A. A watershed-scale model for depressional wetland-rich landscapes. *Journal of Hydrology X*. DOI: 10.1016/j.hydroa.2018.10.002  
\*\*\*Manuscript invited to be part of inaugural issue of JoH-X after initial review at JoH
- Keys TA\*, Govenor H\*, **Jones CN**, Hession WC, Hester ET, Scott DT. Effects of large wood on floodplain connectivity in a headwater Mid-Atlantic stream. *Ecological Engineering*. DOI: 10.1016/j.ecoleng.2018.05.007
- Jones CN**, McLaughlin DL, Henson KA\*, Kaplan DA. From salamanders to greenhouse gases: Does upland management affect wetland functions? *Frontiers in Ecology and the Environment* DOI: 10.1002/fee.1744  
\*\*\*Manuscript featured on the cover of February 2018 Issue
- Jones CN**, Evenson GR, McLaughlin DL, Vanderhoof MK, Lang MW, McCarty GW, Golden HE, Lane CR, Alexander LC. Estimating restorable wetland water storage at landscape scales. *Hydrological Processes* DOI: 10.1002/hyp.11405  
\*\*\*Manuscript featured as an HPToday Scientific Briefing
- 2017      Golden HE, Creed IF, Ali G, Basu NB, Neff BP, Rains MC, Mclaughlin DL, Alexander LC, Ameli AA, Christensen JR, Evenson GR, **Jones CN**, Lane CR, Lang M. Integrating geographically isolated wetlands into land management decisions. *Frontiers in Ecology and the Environment* DOI: 10.1002/fee.1504

- 2016 Hester ET, Guth CR\*, Scott DT, **Jones CN**. Vertical surface water–groundwater exchange processes within a headwater floodplain induced by experimental floods. *Hydrological Processes* DOI: 10.1002/hyp.10884
- Keys TA\*, **Jones CN**, Scott DT, Chuquin D. A cost-effective image processing approach for analyzing the ecohydrology of river corridors. *Limnology and Oceanography: Methods* DOI: 10.1002/lom3.10095
- 2015 **Jones CN**, Scott DT, Guth C\*, Hester ET, Hession WC. Seasonal variation in floodplain biogeochemical processing in a restored headwater stream. *Environmental Science and Technology* DOI: 10.1021/acs.est.5b02426
- 2014 **Jones CN**, Scott DT, Edwards BL, Keim RF. Perirheic mixing and biogeochemical processing in flow-through and backwater floodplain wetlands. *Water Resources Research* DOI: 10.1002/2014WR015647
- Scott DT, Keim RF, Edwards BL, **Jones CN**, Kroes DE. Floodplain biogeochemical processing of floodwaters in the Atchafalaya River Basin during the Mississippi River flood of 2011. *Journal of Geophysical Research: Biogeosciences* DOI: 10.1002/2013JG002477

Manuscripts in Review [Available on request]:

Scott DT, **Jones CN**, Gomez-Velez J, Harvey JW. River-floodplain connectivity across the conterminous United States. [*Resubmitting with Revisions Spring 2019*]

Manuscripts in Preparation:

**Jones CN**, Cheng F\*, McLaughlin DL, Basu N, Cohen M, Ali G, Palmer M. Wetlandscape Hydrology: Variation and controls across spatiotemporal scales. [*Submitting Spring 2019*]

**Jones CN**, Parker J, Gilmour C, Jordan E, Heyes A, Palmer M. Impact of tree species richness and functional diversity on catchment hydrology. [*Submitting Spring 2019*]

**Jones CN**, Armstrong AA\*, Hondula KL\*, Williams M, McLaughlin DL, McCarty G, Palmer M. Landscape controls on the hydrology and function of Delmarva Bay wetlands. [*Submitting Spring 2019*]

Maietta CE, Hondula KL\*, **Jones CN**, Palmer M. Methane-cycling microbial communities vary along a hydrologic gradient in depressional wetland soils. [*Submitting Spring 2019*]

Hondula KL\*, DeVries B, **Jones CN**, Palmer M. Scaling up field measurements of methane fluxes from forested wetlands using inundation time series. [*Submitting Spring 2019*]

Armstrong A\*, **Jones CN**, Gonsior M, Palmer M. Seasonal hydrologic connectivity and site-level differences influence wetland dissolved organic matter composition and photoreactivity. [*Submitting Summer 2019*]

## **INVITED SEMINARS AND PRESENTATIONS**

- 2019 Jones CN. Managing hydrologic connectivity to improve the physical, chemical, and biological functions of aquatic systems. *The Smithsonian Environmental Research Center Seminar*. Edgewater, MD
- 2018 Jones CN, Cheng FY, McLaughlin DL, Basu NB, Lang M, Alexander LC. Wetlandscape hydrology: Variation and dominant controls across spatio-temporal scales. *University Council on Water Resources Annual Conference*. Pittsburg, PA
- 2017 Jones CN. Simulating hydrology of geographically isolated wetlands. *Molecules to macrosystems: EPA research webinar series on aquatic ecosystem connectivity and function*.
- 2016 Jones CN. Solute fate and transport across gradients of hydrologic connectivity. *USDA Agriculture Research Service Seminar*. Fayetteville, AR
- 2012 Jones CN, Scott DT. The role of river-floodplain connectivity in nutrient removal. *INTECOL International Wetlands Conference*. Orlando, FL.

## **SELECTED PRESENTATIONS**

- 2019 Jones CN, Evenson GR, McLaughlin DM. New geospatial and process-based modeling tools for wetlandscape restoration. *Society of Wetland Science Annual Meeting*. Baltimore, MD.
- 2018 Jones CN, Parker JD, Pullen J, Gilmour CC, Jordan T, Heyes A, Palmer M. Seeing the forest for the trees: Using long-term observations from a forest biodiversity experiment to examine the effect of forest restoration and stand diversity on catchment hydrology. *American Geophysical Union Fall Meeting*. Washington DC.
- Jones CN, Peiper KJ, Mohsim H, Tang M, Weiss S, Parks J, Edwards M. Road salt, lead leaching, and private well systems: A case study from New York State. *University Council on Water Resources Annual Conference*. Pittsburg, PA
- Jones CN, Palmer MA. Optimizing wetland restoration for both agriculture water use and ecosystem function. *Boundary Spanning: Advances in Socio-environmental Systems Research*. Annapolis, MD
- 2017 Jones CN, Cheng FY, McLaughlin DL, Basu NB, Lang M, Alexander LC. Exploring drivers of wetland hydrologic fluxes across parameters and space. *American Geophysical Union Fall Meeting*. Baton Rouge, LA.
- Jones CN, Ameli A, Neff B, Evenson G, McLaughlin D, and Golden H. Representing wetland connectivity in hydrologic models: Insights from an inter-model comparison. *Connecting the Dots: The Emerging Science of Aquatic System Connectivity (AWRA Specialty Conference)*. Snowbird, UT.

- 2016 **Jones CN, McLaughlin DL, Chang F, Basu N, Lang M, Alexander L.** Variation in wetland connectivity across contrasting landscapes. *American Geophysical Union Fall Meeting*. San Francisco, CA.
- Jones CN.** 2016. Hydrologic connectivity and its effects on downstream hydrology and water quality. *Arkansas Water Resources Center Annual Water Conference*. Fayetteville, AR.
- Jones CN, McLaughlin DL, Lang MW, Alexander LC.** Hydrologic connectivity of depressional wetlands: Modeling across landscapes to elucidate the drivers of surface water and groundwater fluxes. *Society of Wetland Scientists Annual Meeting*. Corpus Christi, TX.
- 2015 **Jones CN, Scott DT, Gomez-Velez J, Harvey J.** Floodplain connectivity at the continental scale and ecological engineering applications to watershed restoration. *American Ecological Engineering Society Annual Meeting*. Stillwater, OK.
- Jones CN, Scott DT, Hester E, Guth C, Hession WC.** Effect of floodplain reconnection on nutrient flux along a second-order stream. *World Environmental and Water Resources Congress (American Society of Civil Engineers, Environmental and Water Resources Institute)*. Austin, TX.
- 2014 **Jones CN, Scott DT, Gomez-Velez J, Harvey J.** National assessment of floodplain connectivity. *American Geophysical Union Fall Meeting*. San Francisco, CA.
- Jones CN, Scott DT, Hester E, Guth C, Hession WC.** Floodplain connectivity: a source or sink of nutrients? *EcoStream*. Charlotte, NC.
- Jones CN, Guth C, Scott DT, Hester E, Hession WC.** Stream restoration, floodplain connectivity, and nutrient retention in a 2<sup>nd</sup> order Appalachian stream. *American Ecological Engineering Society Annual Meeting*. Charleston, SC.
- Jones CN, Scott DT, Keim R, Edwards B.** Perirheic mixing and biogeochemical processing within riverine floodplains. *Joint Aquatic Scientist Meeting*. Portland, OR.
- 2013 **Jones CN, Scott DT, Keim RF, Edwards B.** Dissolved organic matter processing within the Atchafalaya Basin: From river to backwater swamps. *American Geophysical Union Fall Meeting*. San Francisco, CA.

## **COMPETITIVE FUNDING**

- Pending (\$992,266) NSF Ecosystem Studies. Hydrologic connectivity and water storage as drivers of carbon export and emissions from wetland-dominated catchments. University of Maryland: **CN Jones (PI)**, MA Palmer. Virginia Tech: DL McLaughlin (PI), ER Hotchkiss, DT Scott.
- 2015 (\$150,000) USDA-NIFA Education and Literacy Initiative Postdoctoral Fellowship. Legacy Phosphorus: A study of phosphorus transport along preferential pathways in the saturated subsurface. Z Easton (PI), **CN Jones**, DT Scott, WC Hession. [CNJ Role: Lead conceptual development and grant writing, listed as co-PI due to institutional restrictions. CNJ declined award due to prior acceptance of another postdoctoral position.]
- 2012 (\$5000) Virginia Water Resources Research Center Student Grant. The development of an ecohydraulic model to estimate nitrogen removal in a floodplain. **CN Jones**, DT Scott.
- 2008 (\$2000) University of Arkansas Honors College Research Grant. Modeling watershed scale sediment loading and the effects of best management practices on the West Fork White River. **CN Jones**, S Bajwa.

## **EDUCATION EXPERIENCE**

- 2018 Fundamentals of Engineering Exam Blueprint Creation Meeting (Environmental Engineering Exam Panel), National Council of Examiners for Engineering and Surveying
- 2014-2015 Teaching Assistant, Department of Biological Systems Engineering, Virginia Tech  
Courses assisted include:
- Agricultural Nonpoint Source Pollution (Online graduate course for College of Agriculture and Life Science students)
  - GIS for Engineers (Senior level course for both engineering and non-engineering students)
  - Nonpoint Source Pollution Modeling and Management (Junior/senior engineering course)
  - Introduction to Biological Systems Engineering (Introductory sophomore engineering lab)
- 2014-2015 Undergraduate Curriculum Committee Member, Department of Biological Systems Engineering, Virginia Tech
- 2012 Head Graduate Mentor, Dynamics of Water and Societal Systems, NSF Research Experience for Undergraduates, Stream Restoration and Education Laboratory, Virginia Tech
- 2003-2007 (summers) Whitewater Kayak Instructor, Camp Daniel Boone, Boy Scouts of America, Pisgah National Forest, NC

## **SERVICE ACTIVITIES**

- 2018-present Editorial Team Member (Review Editor), Forest Hydrology, Frontiers in Forests and Global Change.
- 2018 Guest Associate Editor, Journal of American Water Resources Association, Special issue: *The Emerging Science of Aquatic Systems Connectivity*.
- 2018 Postdoctoral Fellowship Review Panel, The National Socio-Environmental Synthesis Center, Annapolis, MD
- 2017-present Water Quality Technical Committee Member, Hydrology Section, American Geophysical Union
- 2017 Session Co-Chair: Success in integrating models and measurements into management for aquatic connectivity. *Connecting the Dots: The Emerging Science of Aquatic Systems Connectivity (AWRA Specialty Conference)*. Snowbird, UT.
- 2016 Session Co-Chair: Wetland and riparian zone effects on water quality, quantity, and ecology in downstream waters. *American Geophysical Union Fall Meeting*. San Francisco, CA.
- 2016 Wetland connectivity modeling working group member, USGS Powell Center, Fort Collins, CO
- 2015 Joint EPA-USGS Prairie Pothole wetlands workshop participant, Cottonwood Lakes Experimental Station, Jamestown, ND
- 2011-2012 President, Graduate Student Association, Department of Biological Systems Engineering, Virginia Tech.
- 2010 Belize Water Resource Development, University of Arkansas and Peacework International, Dangriga, Belize
- 2009 Regional Watershed Planning Internship, Watershed and Aquifer Protection Group, USEPA Region 8 Headquarters, Denver, CO

## **PROFESSIONAL ACTIVITIES**

**Engineering Intern Licensure**, Arkansas (2010)

**Society Membership:** American Ecological Engineering Society, American Geophysical Union, Society of Wetland Scientists

**Journal Reviews [Approximately 2 per semester]:** Water Research, Water Resources Research, Hydrology and Earth Systems Sciences; Journal of American Water Resources Association, Journal of Geophysical Research-Biogeosciences, Hydrological Processes, Journal of Hydrology, Wetlands