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## Education

2015            Ph.D. Behavior, Ecology, Evolution, and Systematics, University of Maryland  
2005            B.S. Chemistry and Biology, College of William & Mary

## Professional Experience

2015 -            Postdoctoral Associate, School of Forestry & Environmental Studies, Yale University  
2006 - 2008    Research Specialist, School of Medicine, University of Virginia  
2005            Program Coordinator, Prince William Conservation Alliance

## Publications & Presentations

### Articles, Chapters & Reports

- Wollheim, W.M., S. Bernal, D. Burns, J.A. Czuba, C.T. Driscoll, A.T. Hansen, R.T. Hensley, **J.D. Hosen**, S.S. Kaushal, L. Koenig, Y. Lu, A. Marzardi, P. Raymond, D. Scott, R.J. Stewart, P.G. Vidon, E. Wohl. *In Revision*. River network saturation hypothesis: factors influencing biogeochemical demand of entire river networks relative to supply.
- Hosen, J.D.**, K.S. Aho, A.P. Appling, J.H. Fair, R.O. Hall, E. Kyzivat, S. Matt, J. Morrison, J.E. Saiers, J.B. Shanley, L. Weber, B. Yoon, P.A. Raymond. *Submitted*. Low turbidity enhancement of primary production during drought in the Connecticut River watershed is scale-dependent.
- Yoon, B., **J.D. Hosen**, E. Kyzivat, J.H. Fair, L. Weber, K.S. Aho, R. Lowenthal, S. Matt, W.V. Sobczak, B.A. Poulin, J. Shanley, J. Morrison, J.E. Saiers, A. Stubbins, P.A. Raymond. *Submitted*. The Central role of light in regulating dissolved organic matter in temperate watersheds.
- Hosen, J.D.**, A.W. Armstrong, M.A. Palmer. *In Press*. Dissolved organic matter variations in Coastal Plain wetland watersheds: the integrated role of hydrological connectivity, land use, and seasonality. *Hydrological Processes*.
- Epting, S.M., **J.D. Hosen**, L. Alexander, M. Lang, A.W. Armstrong, M.A. Palmer. 2018. Landscape metrics as predictors of hydrological connectivity between Coastal Plain wetlands and streams. *Hydrological Processes*.
- Hosen, J.D.**, C.M. Febria, B.C. Crump, M.A. Palmer. 2017. Watershed urbanization linked to changes in stream bacterial community composition. *Frontiers in Microbiology*. 8:1452.
- Febria, C.M.\*, **J.D. Hosen\***, B.C. Crump, M.A. Palmer, D.D., Williams. 2015. Microbial responses to changes in flow status in temporary headwater streams: a cross-system comparison. *Frontiers in Microbiology*. 6:522. [\*denotes equal contribution]
- Koch, B.J., C.M. Febria, R.M. Cooke, **J.D. Hosen**, M.E. Baker, A.R. Colson, S. Filoso, K. Hayhoe, J.V. Loperfido, A.M.K. Stoner, M.A. Palmer. 2015. Suburban watershed nitrogen retention: Estimating the effectiveness of stormwater management structures. *Elementa*. 3:000063.

- McDonough, O.T., M.W. Lang, **J.D. Hosen**, and M.A. Palmer. 2015. Surface hydrologic connectivity between Delmarva bay wetlands and nearby streams along a gradient of agricultural alteration. *Wetlands*. 35:41-53.
- Hosen, J.D.**, O.T. McDonough, C.M. Febria, and M.A. Palmer. 2014. Altered stream dissolved organic matter composition and bioavailability with urbanization. *Environmental Science & Technology*. 48:7817-7824.
- Peters, J.L., S. Cohen, J. Staudenmayer, **J.D. Hosen**, T.A.E. Platts-Mills, R.J. Wright. 2012. Prenatal negative life events increase cord blood IgE: Interactions with dust mite allergen and maternal atopy. *Allergy*, 67:545-551.
- McDonough, O.T., **J.D. Hosen**, and M.A. Palmer. 2011. Temporary streams: the hydrology, geography, and ecology of non-perennially flowing waters. In: *River Ecosystems: Dynamics, Management and Conservation* (H.S. Elliot and L.E. Martin, eds). Nova Science Publishers, Inc., Hauppauge, NY.
- Palmer, M.A., L.A. Wainger, L.S. Craig, K.K. Politano, **J.D. Hosen**, A.P Davis, and J.M. Olszewski. 2010. *Promoting Successful Watershed Restoration Through Effective Monitoring and Assessment*. Chesapeake Biological Laboratory (CBL), Univ. of Maryland Center for Environmental Science, Solomons, MD 20688-0038. CBL report: CBL11-061.
- Peters, J.L., S.F. Suglia, T.A.E. Platts-Mills, **J.D. Hosen**, D.R. Gold, and R.J. Wright. 2009. Relationships among prenatal aeroallergen exposure and maternal and cord blood IgE: Project ACCESS, *Journal of Allergy and Clinical Immunology*. 123:1041-1046.
- Commings, S.P., S.M. Satinover, **J.D. Hosen**, J. Mozena, L. Borish, B.D. Lewis, J.A. Woodfolk, and T.A.E. Platts-Mills. 2009. Delayed anaphylaxis, angioedema, or urticaria after consumption of red meat in patients with IgE antibodies specific for galactose-alpha-1,3- galactose. *Journal of Allergy and Clinical Immunology*. 123:426-433.
- Erwin, E.A., **J.D. Hosen**, S.M. Pollart, M.J. Reid, and T.A.E. Platts-Mills. 2008. High-titer IgE antibody specific for pollen allergens in northern California is associated with both wheezing and total serum IgE. *Journal of Allergy and Clinical Immunology* 123:706-708.
- Chung, C.H., B. Mirakhur, E. Chan, Q. Le, J. Berlin, M. Morse, B.A. Murphy, S.M. Satinover, **J.D. Hosen**, D. Mauro, R.J. Slebos, Q. Zhou, D. Gold, T. Hatley, D.J. Hicklin, and T.A.E. Platts-Mills. 2008. Cetuximab-induced anaphylaxis and IgE specific for galactose-alpha- 1,3-galactose. *New England Journal of Medicine*. 358:1109-1117.

### Invited Seminars

- Hosen, J.D. River and stream microbial communities and carbon cycling response to environmental change. April 24, 2017, Smithsonian Environmental Research Center, Edgewater, MD.
- Hosen, J.D. Changes to headwater stream organic matter and microbial communities in response to urbanization. September 17, 2015, University of New Hampshire Department of Natural Resources, Durham, NH.

### Presentations & Posters (First Author Contributions)

- Hosen, J.D., J. Fair, E. Kyzivat, Y. Li, S. Matt, L. Weber. B. Yoon. P.A. Raymond. Oral Presentation. Microbial Functional Response to Drought in the Connecticut River. Coastal & Estuarine Research Federation, Providence, RI, November 2017.
- Hosen, J.D., J. Fair, E. Kyzivat, S. Matt, L. Weber, B. Yoon, P.A. Raymond. Oral Presentation. Organic carbon quality and quantity during storm events in the Connecticut River watershed. Society for Freshwater Science Annual Meeting, Raleigh, NC, June 2017.

- Hosen, J.D., L. Harris, M.A. Palmer. Poster. Response of headwater stream microbial extracellular enzymes to urbanization depends on substrate type. Fourth Symposium on Urban Stream Ecology, Greensboro, NC, June 2017.
- Hosen, J.D., J. Fair, E. Kyzivat, S. Matt, L. Weber, B. Yoon, P.A. Raymond. Oral Presentation. Drought and ecosystem function in the Connecticut River watershed. Yale Forestry Research Conference, New Haven, CT, April 2017.
- Hosen, J.D., J. Fair, E. Kyzivat, S. Matt, L. Weber, B. Yoon, P.A. Raymond. Poster. Testing the Pulse-Shunt Hypothesis: In situ data reveal hydrological extremes and scaling controls on carbon uptake in a river network. AGU Chapman Conference on Extreme Climate Event Impacts, San Juan, PR, January 2017.
- Hosen, J.D. and P.A. Raymond. Poster. Response of microbial metabolism to flow variability across a river network. International Society of Microbial Ecology 16, Montreal, CA, August 2016.
- Hosen, J.D., C. Febria, L. Harris, C. Swan, S. Filoso, M. Williams, M. Palmer. Poster. Predicting stream dissolved organic matter quality and quantity using basic watershed characteristics, Gordon Research Conference: Catchment Science - Interactions of Hydrology, Biology & Geochemistry, Andover, NH, June 2015.
- Hosen, J.D., C. Febria, B. Crump, C. Kellogg, M. Doherty, and M. A. Palmer. Oral Presentation. Microbial community composition and enzyme activity in Coastal Plain headwater streams relates to spatial water conductivity gradient. Joint Aquatic Sciences Meeting, Portland, OR, May 2014.
- Hosen, J.D. Invited Panelist. Maintaining Maryland's Healthy Watersheds. Maryland Land Conservation Conference, Adamstown, MD, April 2014.
- Hosen, J.D., C. Febria, and M. A. Palmer. Poster. Seasonal variability of microbial use of dissolved organic matter in Coastal Plain headwater streams. Abstract H43B-1454. American Geophysical Union Fall Meeting, San Francisco, CA, December 2013.
- Hosen, J.D., O.T. McDonough, C.M. Febria, M.R. Williams, M.A. Palmer. Oral Presentation. Anthropogenic Land Cover Linked to Shifts in Stream Dissolved Organic Matter Composition. ASLO 2013 Aquatic Sciences Meeting, New Orleans, LA, February 2013.
- Hosen, J.D., C. Febria, O.T. McDonough, and M. A. Palmer. Poster. Land use and inorganic nutrient load alter enzymatic processing of dissolved organic matter by stream microbial communities. Abstract B41D-0316. American Geophysical Union Fall Meeting, San Francisco, CA, December 2012.
- Hosen, J.D., O.T. McDonough, and M.A. Palmer. Poster. Patterns of Dissolved Organic Matter Characteristics in Perennial and Non-Perennial Streams of a Maryland Coastal Plain Watershed. Abstract B33A-0413. American Geophysical Union Fall Meeting, San Francisco, CA, December 2011.
- Hosen, J.D., M.S. Perzanowski; M.C. Carter; J. Odhiambo; L. Ng'ang'a; P. Ngari; S.M. Satinover; T.A.E. Platts-Mills. Oral Presentation. IgE antibodies to helminthes and the cross-reactive oligosaccharide galactose-alpha-1,3-galactose (alphaGal) among children in a village in Africa. American Academy of Allergy, Asthma, and Immunology Annual Meeting, Philadelphia, PA, March 2008.

## **Outreach Articles**

- Microbes in streams: Little things make a big difference. Watershed Observer, Spring 2014.
- Many streams run through it: How ACLT's headwater streams represent the pulse of human activity and conservation in Calvert County. Watershed Observer, Summer 2013.

## **Outreach Talks & Seminars**

- Hosen, J.D. Microbial Ecology Field and Laboratory Methods. July 2017. Yale-New Haven Teachers Institute Watershed Science Seminar.

- Hosen, J.D. Temporary Streams. November 2, 2014. Merrimac Farm Master Naturalist Course.
- Hosen, J.D. Dissolved Organic Matter Quality and Bioavailability Changes Across an Urbanization Gradient in Headwater Streams. October 1, 2014. Center for Watershed Protection Lunch and Learn Seminar Series.
- Hosen, J.D. Organic matter in streams and rivers. November 7, 2013. Prince William County Stream Stewards Lecture Series.
- Hosen, J.D. Headwater Streams and the Chesapeake Bay. July 18, 2013. Chesapeake Bay Foundation Professional Learning Summer Course.
- Hosen, J.D. Temporary streams in the Chesapeake Bay watershed. April 4, 2012. Prince William County Stream Stewards Lecture Series

## Grants & Awards

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| 2016        | American Geophysical Union Chapman Conference Travel Award – Extreme Climate Events Impacts on Aquatic Ecosystems, January 22-27, 2017 – \$1,550 |
| 2012 - 2014 | Doctoral Dissertation Improvement Grant, National Science Foundation - \$13,535  |
| 2012        | Graduate Student Summer Research Fellowship, University of Maryland - \$5,000  |
| 2010        | Drach-Mellody Navigator Award, Chesapeake Biological Laboratory - \$2,500  |
| 2008 - 2009 | Darwin Fellowship, University of Maryland - \$13,520   |
| 2004        | Summer Research Fellowship from the HHMI Education grant to the College of William & Mary - \$4,000  |

## Teaching

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| 2009        | The Ecological and Geomorphic Principles of Stream Restoration (TA) |
| 2008 - 2009 | Human Anatomy (TA)  |

## Service

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| Peer Reviewer | <i>Environmental Science &amp; Technology, Environmental Science: Processes &amp; Impacts, Environmental Science and Pollution Research, Freshwater Science, Hydrobiologia, Journal of Geophysical Research - Biogeosciences</i> |
| 2018          | Special Session Organizer – “Reframing the Science of Urbanized Headwater Streams” – Society for Freshwater Science 2018 Annual Meeting  |
| 2017          | Student Presentation Judge – Coastal Estuarine Research Federation 24th Biennial Conference  |
| 2009 - 2014   | Member – Chesapeake Biological Laboratory Graduate Education Committee   |
| 2013          | Member – University of Maryland Center for Environmental Science Presidential Review Committee   |
| 2013          | Session Organizer – “Linking Microbial Communities and Biogeochemistry to Ecosystem Processes and Environmental Change” – American Geophysical Union 2013 Annual Meeting   |

## Project Participation

2015 - Present	National Science Foundation - “The Pulse-Shunt Concept: A conceptual framework for quantifying and forecasting watershed DOM fluxes and transformations at the MacroSystem scale.”
2015 - Present	National Science Foundation – “River Organic Matter and Environmental ‘Omics”
2013 - 2015	United States Department of Agriculture - ARS. “Wetland-Stream Hydrologic Connectivity and Ecosystem Services.”
2012 - 2014	Environmental Protection Agency - “Quantification of Freshwater Ecosystem Service Production Functions under a Changing Climate.”
2010 - 2013	National Oceanic & Atmospheric Administration. “Integrating Climate Change into the Restoration of the Chesapeake Bay and Watershed.”
2009 - 2010	National Fish & Wildlife Foundation. “Promoting Successful Watershed Restoration using Cost-Effectiveness Monitoring and Assessment.”

## Collaborators

**Ph.D. Advisor:** Margaret Palmer

**Postdoctoral Advisor:** Peter Raymond

**Collaborators:** Laurie Alexander (US EPA), Matthew Cohen (U. Florida), Byron Crump (Oregon State University), Catherine Febria (University of Canterbury), Solange Filoso (University of Maryland Center of Environmental Science), Lora Harris (University of Maryland Center for Environmental Science), Benjamin Koch (Northern Arizona University), Megan Lang (USFWS), Xuhui Lee (Yale University), Greg McCarty (USDA), Brett Poulin (USGS), James Saiers (Yale University), James Shanley (USGS), William Sobczak (College of the Holy Cross), Aron Stubbins (Skidaway Institute – University of Georgia), Chris Swan (University of Maryland Baltimore County).

## Professional Affiliations

American Geophysical Union, Coastal & Estuarine Research Federation, Society for Freshwater Science.