Erin C. Seybold

Assistant Scientist
Kansas Geological Survey
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Education

Ph.D.	Duke University	Ecology	2017
B.A.	St. Olaf College	Biology and Environmental Science	2011

Professional Appointments

Assistant Scientist 2019
Kansas Geological Survey, University of Kansas

Postdoctoral Associate 2017 – 2019
Vermont EPSCoR, University of Vermont

Research Interests

Biogeochemistry of groundwater and surface water, groundwater-surface water interactions, nutrient retention in riparian and aquatic ecosystems, effects of anthropogenic change on water quality

Awards, Fellowships, and Certificates

Duke Certificate in College Teaching	2017
NSF-USGS Graduate Research Internship Program Fellow	2016
Outstanding Student Presentation Award – AGU Fall Meeting (top 3-5% of student presenters)	2015
NSF Graduate Research Fellow	2013 – 2017
Fulbright Scholar	2011
Phi Beta Kappa Member	2011
Goldwater Scholar	2010

Research Support

California Sea Grant, Marine Pollution Program: *Linking terrestrial pollution to estuarine water quality: Quantification of the role of groundwater in the transport, transformation and removal of agricultural pollutants in Elkhorn Slough, CA*. Co-PI with Margaret Zimmer (UCSC) and Anna Braswell (UC Boulder). Total amount $243,000.

NSF Graduate Research Internship Program Fellowship: *Assessing the influence of redox microzones on whole-stream denitrification rates*. U.S. Geological Survey Office of Groundwater Geophysics Branch. Total amount $5,000.

NSF Graduate Research Fellowship: *Ecohydrologic controls on carbon cycling: coupling carbon & water at the watershed scale*. Total amount $178,000.

Publications

Published

Seybold EC, Gold A, Inamdar S, Bowden WB, Vaughan M, Pradhanang S, Addy K, Shanley J, Vermilyea A, Levia D, Adair C, Wemple B, Schroth A. (2019) Influence of land use and hydrologic

variability on seasonal dissolved organic carbon and nitrate export: insights from a multi-year regional analysis for the northeastern USA. Biogeochemistry. doi: 10.1007/s10533-019-00609-x

Seybold EC, McGlynn BL (in press) Middle Rockies (Omernik Ecoregion 6.2.10) Represented by Tenderfoot Creek Experimental Forest, Montana. In: A synthesis of science from experimental forests and ranges. Gen. Tech. Rep. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station.

Seybold EC, McGlynn BL (2018) Hydrologic and biogeochemical drivers of dissolved organic carbon and nitrate uptake in headwater stream networks. Biogeochemistry. doi: 10.1007/s10533-018-0426-1

Bernhardt ES, Blaszczak J, Ficken C, Fork M, Kaiser K, **Seybold EC** (2017) Control Points in Ecosystems: Moving beyond the hot spot hot moment concept. Ecosystems. doi: 10.1007/s10021-016-0103-y

Schade JD, **Seybold EC,** Drake T, Spawn S, Sobczak W, Frey KE, Holmes RM, Zimov N (2016) Variation in summer nitrogen and phosphorous uptake among Siberian headwater streams. Polar Research 35. doi: 10.3402/polar.v35.24571

In review or preparation

Seybold EC, J. Blaszczak, A. Braswell, M. Fork, M. Fuller, K. Kaiser, J. Mallard, M. Zimmer. In prep. Introduction of a conceptual framework to synthesize ecosystem synchronies and asynchronies in the Anthropocene. Anticipated submission February 2020 to Ecosystems.

Seybold EC, Kincaid DW, Schroth AS, Adair EC, Lancellotti B, Perdrial JN. In prep. Effects of changing spring melt on nutrient export from forested and agricultural watersheds. Anticipated submission February 2020 to Water Resources Research.

Kincaid DW, **Seybold EC**, Adair EC, Bowden WB, Perdrial JN, Vaughan MCH, Schroth AW. In prep. Land use and season influence event-scale riverine export dynamics of nitrate and soluble reactive phosphorus from headwater catchments. Anticipated submission January 2020 to Biogeochemistry.

Seybold EC, McGlynn BL (In internal review) Quantifying coupled C and N dynamics across contrasting headwater stream networks. Anticipated submission May 2020 to JGR-Biogeosciences.

Seybold, E.C., McGlynn, B.L. (In Prep.) Influence of geomorphic form and in-stream transformations on watershed carbon dynamics. Anticipated submission March 2020 to Water Resources Research.

Select presentations and published abstracts

Seybold EC et al. 2019. (poster presentation) Using high-frequency sensor networks to quantify terrestrial nitrogen sources to a coastal estuary. Coastal and Estuarine Research Federation Biannual Meeting, *Mobile, AL*.

Seybold EC. 2019. (invited seminar) Taking the pulse of water quality: Understanding the effects of environmental change on the hydrogeochemistry of groundwater and surface water. Kansas Biological Survey Seminar Series, University of Kansas, *Lawrence, KS*.

Seybold EC and BL McGlynn. 2019. (oral presentation) Influence of catchment morphology on bio-physical drivers of carbon fluxes in headwater streams. Society of Freshwater Science Annual Meeting, *Salt Lake City, UT.*

Seybold EC et al. 2018. (oral presentation) Effects of changing winter snowmelt on watershed nutrient export from forested and agricultural catchments in northern Vermont. AGU Fall Meeting, *Washington, D.C.*

Seybold EC et al. 2018 (oral presentation) Effects of land use on the timing and magnitude of carbon and nitrogen fluxes: an analysis of high-frequency sensor measurements from forested, agricultural, and urban watersheds in the Lake Champlain Basin. Lake Champlain Basin Conference, *Burlington, VT.*

Seybold EC et al. 2017. (poster) Effects of land use on the timing and magnitude of dissolved organic carbon and nitrate fluxes: a regional analysis of high-frequency sensor measurements from forested, agricultural, and urban watersheds. AGU Fall Meeting, *New Orleans, LA.*

Seybold EC and BL McGlynn. 2017. (oral presentation) Physical and biological influences on coupled C and N cycling in headwater streams. AGU Fall Meeting, *New Orleans, LA*.

Seybold EC and BL McGlynn. 2016. (oral presentation) Exploring the relative influence of hydrologic and biogeochemical drivers on carbon and nitrogen uptake across two contrasting headwater streams. AGU Fall Meeting, *San Francisco, CA.*

Seybold EC and BL McGlynn. 2016. (oral presentation) Coupled carbon and nitrogen cycling and catchment-scale biogeochemical fluxes across forested mountainous catchments. ASLO Summer Meeting, *Santa Fe, NM.*

Seybold EC and BL McGlynn. 2015. (oral presentation) Influence of groundwater-surface water exchange on whole stream metabolism estimates. AGU Fall Meeting, *San Francisco, CA*.

Seybold EC and BL McGlynn. 2014. (oral presentation) Carbon metabolism, uptake kinetics, and export: How watershed form influences carbon mobilization and in-stream transformations in headwater catchments. AGU Fall Meeting, *San Francisco, CA*. *winner of Outstanding Student Presentation Award*

Seybold EC et al. 2014. (poster) Dynamic hydrologic connectivity as the driver of spatio-temporal variation in DOC dynamics. CUAHSI Biennial Meeting. *Shepardstown, WV*.

Seybold EC et al. 2014. (oral presentation) The role of hydrologic connectivity in mediating DOC dynamics in space and time. Joint Aquatic Sciences Meeting. *Portland, OR.*

Seybold EC et al. 2013. (poster) Utilizing high frequency in-situ sensor networks to understand carbon dynamics from reach to watershed scales. AGU Fall Meeting. *San Francisco, CA*.

Seybold EC et al. 2012. (poster) Trace gas fluxes in complex terrain: The space-time dynamics of soil CH_4 and CO_2. American Geophysical Union Fall Meeting. *San Francisco, CA*.

Seybold ES et al. 2011. (oral presentation) Diversity and Gene Expression of Methane Oxidizing Bacteria in Palsa Wetlands. Nordic Environmental Nucleotide Network Annual Workshop. *Reykjavik, Iceland.*

Seybold ES et al. 2010. (poster) Landscape Variation in N and P uptake in Streams in the Kolyma River Basin. American Geophysical Union Fall Meeting, *San Francisco, CA*.

Seybold ES et al. 2010. (poster) Geographic variation of nutrient spiraling in streams in Minnesota,Northern California, and Eastern Siberia. ASLO/NABS Joint Conference. *Sante Fe, NM.*

Seybold ES et al. 2009. (poster) Biogeochemical cycling and transient storage of surface water in Eastern Siberian streams using short-term solute additions. State of the Arctic Conf. *Miami, FL.*

Mentoring Experience

Brittany Lancellotti (Ph.D. candidate, University of Vermont)
Wilton Burns (Ph.D. candidate, University of Vermont)
Andria Greene (M.S. candidate, University of California Santa Cruz)
Emilio Grande (Ph.D. candidate, University of California Santa Cruz; committee member)

Thomas Adler (B.S., University of Vermont); Patrick Clay (B.S., University of North Carolina – Chapel Hill); Kelsey Coates (B.S., Duquesne University); Mariah Cronin (B.S., University of Vermont); Ricardo Feliciano-Rivera (B.S., University of Puerto Rico – Mayagüez); Amanda Jackson-Mojica (B.S., University of Puerto Rico – Mayagüez); Kunal Palawat (B.S., University of Vermont) Emily Persiak (B.S., University of Vermont); Julia Petty (B.S., University of Vermont); Ellie Sovcik (B.S., University of Vermont; Honors thesis advisee); Colleen Yancy (B.S., University of Vermont)

Teaching Experience

Teaching Assistant, Dynamic Earth (Introductory Earth Science) – Duke University	2016
Teaching Assistant, Earth Surface Processes – Duke University	2015
Teaching Assistant, Landscape Hydrology – Duke University	2013
Teaching Assistant, Water Resources Management – Duke University	2012

Leadership, outreach, and service

Reviewer for peer-review journals (Biogeochemistry, AGU Biogeosciences)	ongoing
Ad-hoc Reviewer for NSF proposals (DEB Ecosystem Sciences Cluster)	ongoing
VT EPSCoR Policy and Technical Advisory Committee member	2017-2019
VT EPSCoR summer internship faculty mentor and group coordinator	2017-2019
AGU Fall Meeting session convener (H23I: Terrestrial-aquatic linkages)	2017
Duke “Let’s Talk About Water” film symposium coordinator	2015
Duke Ecology Symposium steering committee member	2014-2015
"Adopt-a-UPE student” near-peer mentoring program coordinator	2014-2015
Women and Math Mentoring Program, Durham, NC	2013-2015