

# Megan L. Fork

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## Education

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### Ph.D. Environmental Science (2017)

Duke University

Dissertation title: "[Stormwater and organic matter in the urban stream continuum](#)"

Advisor: Dr. James Heffernan

### M.S. Biology (2012)

Florida International University

Thesis title: "[Direct and indirect effects of organic matter sources on denitrification in Florida Rivers](#)"

Advisors: Dr. James Fourqurean & Dr. James Heffernan

### B.S. Zoology; Biological Aspects of Conservation; Theatre & Drama (2008)

University of Wisconsin – Madison

Research title: "Mountain Pine Beetle host preference in Lodgepole vs. Whitebark Pine"

Mentor: Dr. Kenneth Raffa

## Professional Appointments

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### Postdoctoral Scientist (December 2019 – present)

Cary Institute of Ecosystem Studies

Mentor: Dr. Emma Rosi

### Postdoctoral Researcher (February 2018 – November 2019)

Umeå University – Department of Ecology and Environmental Science, Climate Impacts Research Centre

Mentor: Dr. Ryan Sponseller

### Research Technician (November 2008 – May 2009)

University of Canterbury – Freshwater Ecology Research Group

Supervisors: Dr. Angus McIntosh & Dr. Michelle Greenwood

## Publications

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Fork, M.L., J.R. Blaszczak, J.M. Delesantro, and J.B. Heffernan. 2018. Engineered headwaters can act as sources of dissolved organic matter and nitrogen to urban stream networks. *Limnology and Oceanography Letters* DOI: [10.1002/lol2.10066](https://doi.org/10.1002/lol2.10066)

Bernhardt, E.S., J.R. Blaszczak, C. Ficken, M.L. Fork, K.E. Kaiser, E.C. Seybold (all authors contributed equally). 2017. Control points in ecosystems: Moving beyond the hot spot hot moment concept. *Ecosystems*. DOI: [10.1007/s10021-016-0103-y](https://doi.org/10.1007/s10021-016-0103-y)

Solomon, C.T., S.E. Jones, B.C. Weidel, I. Buffam, M.L. Fork, J. Karlsson, S. Larsen, J.T. Lennon, J.S. Read, S. Sadro, and J.E. Saros. 2015. Ecosystem consequences of changing inputs of terrestrial dissolved organic matter to lakes: Current knowledge and future challenges. *Ecosystems* 18: 376-389. DOI: [10.1007/s10021-015-9848-y](https://doi.org/10.1007/s10021-015-9848-y)

Ficken, C., M.L. Fork, and M.R. Fuller. 2015. Patterns and process in landscape ecology: Physical template, biotic interactions and disturbance regime. *Teaching Issues and Experiments in Ecology* Vol. 10: Figure Set #1 [online]. [http://tiee.esa.org/vol/v10/issues/figure\\_sets/ficken/abstract.html](http://tiee.esa.org/vol/v10/issues/figure_sets/ficken/abstract.html)

Fork, M.L. and J.B. Heffernan. 2014. Direct and indirect effects of organic matter source and concentration on denitrification in Florida rivers. *Ecosystems* 17:14-28. DOI: [10.1007/s10021-013-9705-9](https://doi.org/10.1007/s10021-013-9705-9)

Heffernan, J.B., A.R. Albertin, **M.L. Fork**, B.G. Katz, and M.J. Cohen. 2012. Denitrification and inference of nitrogen sources in the karstic Floridan Aquifer. *Biogeosciences* 9:1671-1690. DOI: [10.5194/bg-9-1671-2012](https://doi.org/10.5194/bg-9-1671-2012)

### **In review**

**Fork, M.L.**, C.L. Osburn, and J.B. Heffernan. Bioavailability and compositional changes of dissolved organic matter in urban engineered headwaters.

**Fork, M.L.**, R.A. Sponseller, and H. Laudon. Changing source-transport dynamics drive differential browning trends among adjacent boreal catchments.

### **In revision**

**Fork, M.L.**, R. McManamay, and J.B. Heffernan. Propagation of inflowing stormwater pulses through reservoir coves: Transient shifts between lentic and lotic states.

### **In prep**

**Fork, M.L.**, J. Karlsson, and R.A. Sponseller. DOC regulates benthic biofilms in northern lakes through interacting effects on nutrient and light availability.

Lupon, A., L. Gómez-Gener, **M.L. Fork**, H. Laudon, and R.A. Sponseller. Discrete groundwater inflows control stream metabolism across spatial scales.

## **Grants & Awards**

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- Climate Impacts Research Centre Grant – Umeå Univ. EMG Department; 50,000 SEK [~ \$5000] (2019)
- Bass Instructor of Record Fellowship – Duke Graduate School; \$11,456 (2017)
- Summer Research Fellowship – Duke Graduate School; \$5500 (2015)
- GO! Program Fellowship – Oak Ridge National Laboratory; \$40,000 (2015)
- James B. Duke Fellowship – Duke Graduate School; \$20,000 (2012)
- Sigma Xi – Grants-In-Aid of Research; \$300 (2011)
- Best Poster – FL International University 13th Annual Biology Research Symposium (2010)
- Hilldale Research Fellowship – UW-Madison; \$4000 (2007)

## **Teaching & Pedagogical Training**

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### **Co-Instructor** (Fall 2019)

Swedish Agricultural University (SLU)

Course: Watershed Ecology and Biogeochemistry (PhD level), Module: Frontiers in Watershed Biogeochemistry and Ecology: Questions, Tools and Communication

### **Certificate in College Teaching** (2017)

Duke University

### **Instructor of Record** (Fall 2017)

Duke University – Nicholas School of Environment

Course: Carbon, People, and the Environment

### **Teaching Assistant** (2012-17)

Duke University – Nicholas School of Environment

Courses: Ecology and Conservation of Rivers and Streams; Water in a Changing World; Urban Ecology; Landscape Ecology

### **Teaching Assistant** (2010)

Florida International University – Dept. of Biological Sciences

Course: General Biology I Lab

## Presentations (last 5 years)

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### Oral Presentations

- Fork, M.L.** Organic matter budgets and fates in engineered headwaters. Baltimore Ecosystem Study LTER Annual Meeting, 23-24 October 2019. Baltimore, MD.
- Fork, M.L.**, J. Karlsson, and R.A. Sponseller. Light vs. nutrient effects of DOM on benthic production in northern lakes. Society for Freshwater Science Annual Meeting, 19-23 May 2019. Salt Lake City, UT.
- Fork, M.L.** and C.L. Osburn. Urban headwaters: Model systems for DOM generation at the aqua-terrestrial interface. Workshop on Organic Matter Spectroscopy, 23-26 October 2018. Carqueiranne, Toulon, France.
- Fork, M.L.** Stormwater and organic matter in urban aquatic systems. University of Guelph, 28 June 2018. Guelph, Canada. (invited)
- Fork, M.L.**, C.L. Osburn, and J.B. Heffernan. Microbial processing conditions DOM from urban engineered headwaters. Society for Freshwater Science Annual Meeting, 21-24 May 2018. Detroit, MI.
- Fork, M.L.**, J.R. Blaszczak, and J.B. Heffernan. From gutter to stream: Contributions of engineered headwaters to nitrogen and carbon in urban stormwater. Society for Freshwater Science Annual Meeting, 3-8 June 2017. Raleigh, NC.
- Fork, M.L.** Organic matter and stormwater in an urban stream continuum. Tennessee Stormwater Association – East Chapter, Quarterly Meeting, 9 September 2016. Oak Ridge, TN. (invited)
- Fork, M.L.**, J.B. Heffernan, and R.A. McManamay. Pulses of stormwater disrupt reservoir physical and chemical structure across land uses. Association for the Sciences of Limnology and Oceanography Summer Meeting, 5-10 June 2016. Santa Fe, NM.
- Fork, M.L.**, J.R. Blaszczak, and J.B. Heffernan. Dissolved organic matter in urban ephemeral headwaters. Society for Freshwater Science Annual Meeting, May 21-26 May 2016. Sacramento, CA.
- Fork, M.L.**, E.S. Bernhardt, J.B. Heffernan, and D.L. Urban. Patterns of dissolved organic matter concentration, composition, and timing in three small urban streams. Society of Freshwater Science Annual Meeting, 17-21 May 2015. Milwaukee, WI.

### Posters

- Fork, M.L.**, J.R. Blaszczak, and J.B. Heffernan. Organic matter transport and transformation in engineered urban headwaters. Gordon Research Conference: Catchment Science, 25-30 June 2017. Lewiston, ME.
- Fork, M.L.**, J.R. Blaszczak, E.S. Bernhardt, J.B. Heffernan, D.L. Urban and J.M. Delesantro. Composition of dissolved organic matter in urban runoff depends on source and landscape position. Ecological Society of America Annual Meeting, 9-14 August 2015. Baltimore, MD.

### Outreach & Service

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- Ad-hoc reviewer for *Biogeochemistry*; *JGR-B*; *Water*; *PLOS One*; *STOTEN*; *Fund. & Appl. Limnol.*
- Program committee for [5<sup>th</sup> Symposium on Urbanization and Stream Ecology](#) (2019-20)  
Co-chaired communication and outreach efforts and served on program planning committee
- Facilitator for [4<sup>th</sup> Symposium on Urbanization and Stream Ecology](#) (May 31 - June 3, 2017)  
Facilitated and co-led working group discussions and efforts at the meeting
- Society for Freshwater Science Student Resource Council (2015-17)
- Contributor to NC DENR Street Sweeping & Storm Drain Cleaning – Nutrient Crediting Framework (2016)  
Attended meetings for development of Framework and presented and discussed scientific results with state-level managers

- Program representative and co-chair for Nicholas PhD Advocacy Council (2015-16)
  - Worked with University administrators to develop long-range planning for graduate program and coordinate efforts among council members
- Coordinator of Duke Nicholas School of Environment Graduate Afternoon Seminar series (2013-14)

## **Professional Memberships**

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American Geophysical Union  
Association for the Sciences of Limnology and Oceanography  
Freshwater Biological Association  
Society for Freshwater Science