

TIMOTHY J. HOELLEIN

Curriculum vitae

Department of Biology, Life Sciences Bldg. Rm 430
Loyola University Chicago
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EDUCATION

Ph.D. Biology. University of Notre Dame. 08/06/08. Dissertation title: The effects of seasonality and restoration on stream nutrient cycling at multiple spatial scales.

B.S. Biology. West Virginia Wesleyan College. 05/15/00. *Magna cum laude*. Minors: Chemistry and Honors Program.

RESEARCH FOCUS

Ecosystem processes and biogeochemistry; the use of metrics of ecosystem function and seasonal dynamics for evaluation of human impacts and restoration in aquatic ecosystems.

ACADEMIC AND PROFESSIONAL POSITIONS

Associate Professor, Aug. 2016 to present, Department of Biology, Loyola University Chicago

Assistant Professor, Aug. 2010 to 2016, Department of Biology, Loyola University Chicago

Assistant Professor, Aug. 2008-Aug. 2010, Department of Natural Sciences, Baruch College, City University of New York

Assistant Professor, Nov. 2008-Aug. 2010, Department of Biology, The Graduate School and University Center, City University of New York.

Graduate Research Assistant, Spring 2004 and Spring 2005, Department of Biology, University of Notre Dame, Advisor: Dr. Jennifer L. Tank.

Graduate Teaching Assistant, Fall 2004, Fall 2005, Fall 2007. Department of Biology, University of Notre Dame, Advisor: Dr. Jennifer L. Tank.

Research Technician. July 2002-Dec 2002. US Geological Survey. Biological Resources Division Ft. Collins, CO.

Animal Care/Water Quality Monitor. July 2000-July 2002. Dolphins Plus, Key Largo, FL, USA and Road Town, British Virgin Islands. Curator: Arthur Cooper.

PUBLICATIONS (*undergraduate students, §graduate students)

Zarnoch, C.B., **Hoellein, T.J.**, Furman, B.T., and B.J. Peterson. *In Press*. Eelgrass meadows, *Zostera marina* (L.), facilitate the ecosystem service of nitrogen removal during simulated nutrient pulses in Shinnecock Bay, New York, USA. *Marine Pollution Bulletin*

Hoellein, T.J., §McCormick, A., London, M., *Hittie, J., Scott, J.W., and J.J. Kelly. *In Press*. Longitudinal patterns of microplastic concentration and bacterial assemblages in surface and benthic habitats of an urban river. *Freshwater Science*

- Denise A. Bruesewitz, **Hoellein, T.J.**, Mooney, R.F., Gardner, W.S., and E. J. Buskey. *In Press*. Wastewater influences nitrogen dynamics along in a coastal catchment during a prolonged drought. *Limnology and Oceanography*
- *Vincent, A., and **T.J. Hoellein**. 2017. Anthropogenic litter abundance and accumulation rates point to seasonal litter sources on a Great Lakes beach. *Journal of Contemporary Water Research and Education* 160 (1): 72-84
- *Vincent, A., **Hoellein, T.J.**, Drag, N., Lyandres, O., and S. Neville. 2017. Citizen science datasets reveal drivers of spatial and temporal variation for anthropogenic litter on Great Lakes beaches. *Science of the Total Environment* 577: 105-112.
- §McCormick, A., **Hoellein, T.J.**, London, M., *Hittie, J., Scott, J.W., and J.J. Kelly. 2016. Microplastic in surface waters of urban rivers: Concentration, sources, and associated bacterial assemblages. *Ecosphere* 7(11): e01556.
- §McCormick, A. and **T.J. Hoellein**. 2016. Anthropogenic litter is abundant, diverse, and mobile in urban rivers: Insights from cross-ecosystem analyses using ecosystem and community ecology tools. *Limnology and Oceanography* 61(5):1718-1734
- §Reisinger, A., Tank, J.L., **Hoellein, T.J.**, and R.O. Hall. 2016. Midwestern river sediment, water column, and open-channel denitrification measured using membrane-inlet mass spectrometry. *Journal of Geophysical Research, Biogeosciences* 121(5): 1258-1274.
- §Cook, A.R. and **T.J. Hoellein**. 2016. Environmental drivers of leaf breakdown in an urban watershed. *Freshwater Science* 35(1): 311-323
- §Lindeman, S., Castignetti, D., Zarnoch, C.B., and **T.J. Hoellein**. 2016. Effect of eastern oysters (*Crassostrea virginica*) and seasonality on nitrite reductase gene abundance (*nirS*, *nirK*, *nrfA*) in an urban estuary. *Estuaries and Coasts* 39:218-232.
- §Turek, K.A., and **T.J. Hoellein**. 2015. The invasive Asian clam (*Corbicula fluminea*) increases sediment denitrification and ammonium flux in 2 streams in the Midwestern USA. *Freshwater Science* 34(2): 472-484
- Hoellein, T.J., *Westhoven, M., Lyandres, O., and J. Cross. 2015. Abundance and environmental drivers of anthropogenic litter on 5 Lake Michigan beaches: A study facilitated by citizen science data collection. *Journal of Great Lakes Research*. 41:78-86
- Hoellein, T.J.**, Zarnoch, C.B., and R. Grizzle. 2015. Water quality influences on eastern oyster (*Crassostrea virginia*) feeding, biodeposition, and sediment N cycling in Great Bay, NH. *Biogeochemistry* 122(1): 113-129
- §McCormick, A., **Hoellein, T.J.**, Mason, S., Schluep, J., and J.J. Kelly. 2014. Microplastic in an abundant and distinct microbial habitat in an urban river. *Environmental Science and Technology*. 48(20):11863-71.
- Richardson, D.C., *Oleksy, I.A., **Hoellein, T.J.**, Arscott, D. B., Gibson, C.A., and S.M. *Root. 2014. Spatial distribution and macroinvertebrate community effects of a nuisance, bloom-
C.V., T. Hoellein

forming diatom (*Didymosphenia geminata*) in Catskill Mountain streams, New York. *Aquatic Sciences* 76(4):553-564

- Hoellein, T.J.**, §Rojas, M., *Pink, A. *Gasior, J., and J. J. Kelly. 2014. Anthropogenic litter in urban freshwater ecosystems: Distribution and microbial interactions. *PLoS One* 9(6): e98485
- Hoellein, T.J.**, and C.B. Zarnoch. 2014. Effect of eastern oysters (*Crassostrea virginica*) on sediment carbon and nitrogen dynamics in an urban estuary. *Ecological Applications* 24(2):271-286
- Hoellein, T.J.**, Bruesewitz, D.A., and D. Richardson. 2013. Revisiting Odum (1956): A synthesis of aquatic ecosystem metabolism. *Limnology and Oceanography*. 58(6), 2013, 2089–2100.
- Hoellein, T.J.**, J.L. Tank, S.A. Entrekin, E.J. Rosi-Marshall, M.L. Stephen, and G.A. Lamberti. 2012. Effects of a benthic habitat restoration on nutrient uptake and ecosystem metabolism in three headwater streams. *River Research and Applications*. 28 (9): 1451-1461
- Hoellein, T.J.**, Bruesewitz, D.A., and D.P. Hamilton. 2012. Are geothermal streams important sites of nutrient uptake in an agricultural and urbanizing landscape (Rotorua, New Zealand)? *Freshwater Biology* 57: 129–142
- Hoellein, T.J.**, Arango, C.P., and Y. Zak*. 2011. Spatial variability in nutrient concentration and limitation in an urban watershed (Bronx River, New York, USA). *Biogeochemistry* 106:265–280
- Hoellein, T.J.**, J.L. Tank, J.J. Kelly, and E.J. Rosi-Marshall. 2010. Seasonal variation in nutrient limitation of microbial biofilms colonizing organic and inorganic substrata in streams. *Hydrobiologia* 649:331-345
- Kominoski, J.S., **T.J. Hoellein**, C.J. Leroy, C.M. Pringle, and C.M. Swan. 2010. Beyond species richness: expanding biodiversity-ecosystem functioning theory in detritus-based streams. *River Research and Applications*. 26: 67-75.
- Hoellein, T.J.**, J.L. Tank, E.J. Rosi-Marshall, and S.A. Entrekin. 2009. Temporal variation in substratum-specific rates of N uptake and metabolism and their relative contribution at the reach scale. *Journal of the North American Benthological Society*. 28(2): 305-318.
- Entrekin, S.A., J.L. Tank, E.J. Rosi-Marshall, **T.J. Hoellein**, and G.A. Lamberti. 2009. Responses in macroinvertebrate secondary production to large wood addition in three Michigan streams. *Freshwater Biology* 54 (8): 1741-1758.
- Kominoski, J.S., **T.J. Hoellein**, J.J. Kelly, and C. M. Pringle. 2009. Does mixing litter of different qualities alter stream microbial diversity and functioning on individual litter species? *Oikos*. 118:457-463.
- Entrekin, S.A., J.L. Tank, E.J. Rosi-Marshall, **T.J. Hoellein**, and G.A. Lamberti. 2008. Responses in organic matter accumulation and processing to an experimental wood addition in three headwater streams. *Freshwater Biology* 53:1642–1657.

Hoellein, T.J., J.L. Tank, E.J. Rosi-Marshall, S.A. Entekin, and G.A. Lamberti. 2007. Controls on spatial and temporal variation of nutrient uptake in three Michigan headwater streams. *Limnology and Oceanography* 52 (5) 1964-1977.

Entekin, S.A., E.J. Rosi-Marshall, J.L. Tank, **T.J. Hoellein**, and G.A. Lamberti. 2007. Macroinvertebrate secondary production in forested sand-bottom streams of the Upper Midwest. *Journal of the North American Benthological Society*. 26 (3): 472-490.

BOOK CHAPTERS

Harrison, J.P., **Hoellein, T.J.**, Sapp, M., Tagg, A., Ju-Nam, Y., and J.J. Ojeda. *In Press*. Microplastic-associated biofilms: A comparison of freshwater and marine environments. In: Wagner, M, and S. Lambert (Eds). *Freshwater Microplastics: Emerging Environmental Contaminants?* Series: The Handbook of Environmental Chemistry, Vol. 58. Springer International Publishing. ISBN 978-3-319-61614-8

EXTERNAL GRANTS RECEIVED

Hoellein, T.J. CAREER: Anthropogenic litter reveals drivers of ecosystem processes in urban streams. National Science Foundation. 07/01/16

Kelly, J.J., **Hoellein, T.J.**, and Mason, S. Identifying Sources of Microplastic Contamination in Lake Michigan. Illinois Indiana Sea Grant. 02/01/16

Zarnoch, C.B., **Hoellein, T.J.**, and Bruesewitz, D.A. \$197,974. Mechanisms of nutrient retention in restored salt marshes: Will marsh restoration in eutrophic ecosystems provide ecosystem services of nitrogen removal and carbon sequestration? Hudson River Foundation 7/1/15.

Hoellein, T.J., and ^SA. McCormick. Anthropogenic litter and microplastic in urban streams: abundance, source, and fate. Illinois Water Resources Center. 05/01/14.

Zarnoch, C.B., **Hoellein, T.J.**, and Bruesewitz, D.A. Ecosystem response to enhanced nutrient loadings following Hurricane Sandy in the Long Island South Shore Estuary: increased nitrogen removal or availability. New York Sea Grant. 02/15/13.

Hoellein, T.J., Zarnoch C.B., Branco, B.B., Bruesewitz, D.A., and W. Gardner. The influence of oyster restoration on nitrogen cycling in the Hudson-Raritan Estuary. Hudson River Foundation. 06/01/11.

Hoellein, T.J. Dissimilatory N cycling in an urban watershed (Bronx River, NY): the use of spatially explicit measurements to quantify landscape and in-stream drivers of N delivery to a small estuary. Professional Staff Congress, CUNY. 4/19/10

Zarnoch, C.B. and **T.J. Hoellein**. Research experience for undergraduates (REU) supplement application for DEB 0918952: The influence of oyster restoration on sediment nitrogen cycling: an ecosystem approach. National Science Foundation. 3/29/10

Richardson, D.C. **Hoellein, T.J.**, D. Arscott, and C. Gibson. Rock snot in sick rivers. Ashokan Watershed Stream Management Program Advisory Council. 6/15/10

Richardson, D.C. **Hoellein, T.J.**, D. Arscott, and C. Gibson. What are the environmental drivers controlling blooms of the invasive diatom *Didymospehnia geminata* in the Northeastern and Mid-Atlantic United States? United States Geological Survey: Water Resources Institute. 3/15/10

Hoellein, T.J., Zarnoch, C.B., and D.F. Gruber. Major Research Instrumentation: Acquisition of a Seal AQ2+ Discrete Autoanalyzer for interdisciplinary research in aquatic ecology by faculty and undergraduates at Baruch College. National Science Foundation. (MRI 0959876). 12/15/09.

Hoellein, T.J. and Zarnoch, C.B. The influence of oyster restoration on sediment nitrogen cycling: an ecosystem approach. National Science Foundation (DEB 0918952). 7/15/09.

Hoellein, T.J. and J.L. Tank. Will stream restoration increase ecosystem resistance and resilience to storms? Doctoral Dissertation Improvement Grant, National Science Foundation, 05/15/07.

Hoellein, T.J. Coupling microbial community composition and ecosystem processes to examine the response of heterotrophic microbial biofilms to nutrient enrichments in a Northern Michigan stream. Sigma Xi Scientific Research Society, 01/19/07.

AWARDS

2017. **Langerback Award.** Excellence in Undergraduate Research Mentoring. Loyola University Chicago

2017. *Nomination.* Sujack Teaching Award - Excellence in Teaching Loyola University Chicago.

2016. **Sujack Research Award.** Excellence in Faculty Research. Loyola University Chicago.

2016. *Nomination.* Hayes Award for Undergraduate Research Mentoring. Loyola University Chicago

2015. *Nomination.* Hayes Award for Undergraduate Research Mentoring. Loyola University Chicago

2012. *Honorable Mention.* Langerback Award for Undergraduate Research Mentoring. Loyola University Chicago

2007. **Bayer Pre-doctoral Research Fellowship.** Co-sponsored by the Bayer Corporation and Center for Environmental Science and Technology at the U. of Notre Dame to fund graduate student research in environmental science.

2007. **President's Award.** North American Benthological Society. Given by the North American Benthological Society for a research proposal merited as excellent.

2006. **Certification of Teaching Excellence in Biological Sciences.** U. of Notre Dame. Awarded following completion a program of courses and workshops with rigorous training in the practice of teaching biological sciences.

2003-2007. **Arthur J. Schmitt Presidential Fellowship**, U.of Notre Dame. Awarded for excellence in academic achievement to fund the completion of Ph.D.

INVITED SEMINARS

Hoellein, T.J. Ecosystem engineers: Role of bivalves in nutrient transformation and retention. *Mar 27, 2017. Keynote speech.* Biannual meeting of the Freshwater Mollusk Conservation Society. Cleveland, OH.

Lourich, V. and T.J. Hoellein. Novel management strategies for reduction of anthropogenic litter on Chicago's Lake Michigan beaches. *Mar 24, 2017.* Alliance for the Great Lakes. Chicago, IL

Hoellein, T.J. Microplastic and anthropogenic litter in urban streams: abundance, movement, and microbial interactions. *Jan 26, 2017.* Cary Institute of Ecosystem Studies. Millbrook, NY

Hoellein, T.J. Microplastic and anthropogenic litter in urban streams: abundance, movement, and microbial interactions. *Nov 8, 2016.* Lake Forest College. Lake Forest, IL

Hoellein, T.J. Microplastic in urban streams: abundance, movement, and microbial interactions. *July 5, 2016.* University of Notre Dame Environmental Change Initiative. University of Notre Dame, Notre Dame, IN.

Hoellein, T.J. Microplastic in urban streams: abundance, movement, and microbial interactions. *April 29, 2016.* Wisconsin Sea Grant. University of Wisconsin, Madison, WI.

Hoellein, T.J. Anthropogenic litter and microplastic in urban streams: abundance, movement, and microbial interactions. *Feb 29, 2016.* School of the Art Institute of Chicago. Chicago, IL

Hoellein, T.J. Microplastic in urban streams: Abundance, movement, and microbial interactions. *Feb 10, 2016.* Ohio River Valley Water Sanitation Commission. Cincinnati, OH.

Hoellein, T.J., Lyandres, O., and S. Neville. HSBC Water Programme – Researchers' Presentation Corporate Sustainability. *Jan 22, 2016.* Web Seminar to offices in London and New York City.

Hoellein, T.J. Great Lakes Marine Debris: A look at litter and microplastics in the Great Lakes region, including abundance, movement, and microbial interactions. *Nov 9, 2015.* Shedd Aquarium.

Hoellein, T.J. Anthropogenic litter and microplastic in urban streams: abundance, movement, and microbial interactions. *Nov 6, 2015.* Department of Environmental Engineering, Northwestern University.

Hoellein, T.J., Our freshwater futures: Garbage. Special session for Undergraduate education at the annual meeting of the Society for Freshwater Science. *May 17, 2015.* Milwaukee, WI.

Hoellein, T.J. Litter on Lake Michigan beaches at multiple scales: Density, sources, and accumulation rates. *April 20, 2015.* Alliance for the Great Lakes. Chicago, IL

- Hoellein, T.J., and J.J. Kelly. Major environmental stressors for urban streams in the Midwestern United States. Symposium on Urbanization and Stream Ecology (SUSE). *May 15, 2014*. Portland, OR.
- Hoellein, T.J. Litter on Lake Michigan beaches: Analysis of data from citizen scientists. Alliance for the Great Lakes. *April 29, 2014*. Chicago, IL
- Hoellein, T.J. Ecosystem function in urban streams: Effects of an invasive bivalve and anthropogenic litter. *November 22, 2013*. Ball State University. Muncie, IN
- Hoellein, T.J. Ecosystem function in urban streams: Effects of an invasive bivalve and anthropogenic litter. *September 17, 2013*. St. Benedictine University. Lyle, IL
- Hoellein, T.J. Distribution and biological activity of anthropogenic litter in freshwater ecosystems. *January 14, 2013*. Alliance for the Great Lakes. Chicago, IL
- Hoellein, T.J. Carbon and nitrogen dynamics in eutrophic aquatic ecosystems. *November 16, 2012*. Department of Biology. Western Michigan University. Kalamazoo, MI.
- Hoellein, T.J. The ecology of bivalves: restoration, conservation, and invasive species. Club Promoting Connections in Research. *Feb 9, 2012*. Loyola University Chicago, Chicago IL.
- Zarnoch, C.B., and Hoellein, T.J. The influence of oysters on sediment nitrogen cycling in an urban estuary. School of the Coast and Environment Seminar Series. Louisiana State University. *December 2, 2011*. Baton Rouge, LA
- Zarnoch, C.B., and Hoellein, T.J. The influence of oysters on sediment nitrogen cycling: an ecosystem approach. Hudson River Foundation *April 7, 2011*. New York, NY.
- Hoellein T.J. The influence of ecosystem restoration and eutrophication on nutrient cycling at multiple spatial scales. *March 25, 2010*. Department of Natural Sciences Bio-Med Society. Baruch College, New York, NY
- Richardson, D.C. and T.J. Hoellein. Rock snot and river congestion: What are the causes and consequences of blooms of *Didymosphenia geminata*? *November 13, 2009*. Cornell Cooperative Extension (Invasive Species) Invited Presentations, Cornell Univ., Ithaca, NY.
- Hoellein, T.J., J.L. Tank, E.J. Rosi-Marshall, S.A. Entekin, and G.A. Lamberti. The influence of restoration on rates of nutrient cycling and ecosystem metabolism in headwater streams of northern Michigan. *March 3, 2009*. Queens College Department of Biology, City University of New York. Queens, NY.
- Hoellein, T.J., J.L. Tank, E.J. Rosi-Marshall, S.A. Entekin, and G.A. Lamberti. The effect of seasonality and restoration on stream nutrient cycling at multiple spatial scales. *April 8, 2009*. Cary Institute for Ecosystem Studies. Millbrook, NY.

NON-REFEREED PUBLICATIONS

- Baldwin, AK, King, K., Damstra, R., Karns, B., Weller, L., Mason, S., **Hoellein, T.J.**, and L. Kim. Microplastics are Everywhere! Great Lakes Network Resource Brief. US Department of the Interior, National Park Service. - <https://doi.org/10.5066/F7HT2MJX>

MULTIMEDIA

Are you eating your fleece? May 2017. ABC Channel 7 News Chicago. Interview and field work visit for local TV news on microplastic research. <http://abc7chicago.com/news/are-you-eating-your-fleece/1969996/>

Our Plastics Glut Is An Environmental Nightmare -- And An \$80 Billion Opportunity. April 2017. *Forbes*. Interview regarding microplastic in Great Lakes. <https://www.forbes.com/sites/mikemontgomery/2017/03/25/our-plastics-glut-is-an-environmental-nightmare-and-an-80-billion-opportunity/#3100ff9f4f4d>

Plastic litter on Great Lakes beaches. February 2017. *Great Lakes Echo*. Summary of a recent publication by undergraduate student Anna Vincent. <http://greatlakeesecho.org/2017/02/13/plastic-litter-on-great-lakes-beaches/>

Cigarette Butts, Food Waste Account For Almost All Chicago Beach Trash. December 2016. *Chicagoist*. Summary of a recent publication by undergraduate student Anna Vincent. http://chicagoist.com/2016/12/27/cigarette_butts_food_waste_chicago.php

Cigarette butts make up nearly half of trash at Chicago beaches, study shows. December 2016. *Chicago Tribune*. Summary of a recent publication by undergraduate student Anna Vincent. <http://www.chicagotribune.com/news/ct-lake-michigan-beaches-trash-met-20161227-story.html>

Study Reveals What Litters Chicago's Shores. December 2016. *Loyola Phoenix*. Summary of a recent publication by undergraduate student Anna Vincent. <http://loyolaphoenix.com/2016/12/study-reveals-litters-chicagos-shores/>

Gross! Analysis of Chicago beach garbage shows butts, needles, condoms. November 2016. *DNA Info Chicago*. Summary of a recent publication by undergraduate student Anna Vincent. <https://www.dnainfo.com/chicago/20161121/gold-coast/chicago-beach-garbage-needles-condoms-cigarette-butts>

Up-Close: Tim Hoellein. November 2016. Illinois/Indiana Sea Grant. Long form interview about research goals, objectives, and applications. https://issuu.com/iiseagrant/docs/upclose_hoellein_e-version

Scientist Spotlight. October 2016. Center for Great Lakes Literacy. Described research on water pollution. <http://www.cgll.org/scientistspotlight/tim-hoellein/>

Letter to the Editor. August 2016. *Crested Butte News*. Why use plastic when there are environmentally safe alternatives available? A comment on the consideration by the city council of a plastic bag ban.

Microplastics may help pathogens escape wastewater treatment. February 2016. *Illinois Water* (magazine). <http://www.ilwaterresources.org/illinois-water-magazine/microplastics-may-help-pathogens-escape-wastewater-treatment/>

Volunteer Data Drives Research on Plastic, Other Debris. Summer 2015. *Alliance for the Great Lakes Stewardship Issue*. Described our research on Adopt-A-Beach dataset.
<http://www.greatlakes.org/document.doc?id=1526>

Microbeads Ban Clears House Committee. Indiana Public Media. January 29, 2015. Coverage of testimony to Indiana State House committee on proposed ban of microbeads.
<http://indianapublicmedia.org/news/microbeads-ban-clears-house-committee-77487/>

Tiny microbeads pile up to problems for the Great Lakes. PBS News Hour. July 30, 2014. Interviewed regarding research on microplastic in Chicago area rivers.
<http://www.pbs.org/newshour/bb/tiny-plastic-microbeads-pile-problems-great-lakes/>

No more microbeads. Chicago Tonight. July 24, 2014. Interviewed regarding research on microplastic in Chicago area rivers. <http://chicagotonight.wttw.com/2014/07/21/no-more-microbeads>

Tiny pieces of plastic polluting Lake Michigan, worrying researchers. TV news story by Annie Chung, CBS affiliate in South Bend, IN. June 6, 2014. Featured our research on microplastic. <http://wsbt.com/archive/tiny-pieces-of-plastic-polluting-lake-michigan-worrying-researchers>

Little things matter in Great Lakes beach, water pollution. Newspaper article by Jim Hayden. *Holland Sentinel*. May 19, 2014. Featured our research on Lake Michigan beaches with collaborators at The Alliance for the Great Lakes.
<http://www.hollandsentinel.com/article/20140519/NEWS/140519764>

Cleansing microbeads are everywhere – including our lake and river. Newspaper article by Brigit Sweeny. *Crain's Chicago Business*. February 24, 2014. Featured our research on microplastic in the Chicago River.
<http://www.chicagobusiness.com/article/20140222/ISSUE01/302229985/cleansing-microbeads-are-everywhere-including-our-lake-and-river>

Talking Trash. Featuring research on ecosystem effects of litter in Chicago River. *Loyola magazine*. Winter 2014.

Photo gallery: Oysters in an eastern estuary. *Bulletin of the Ecological Society of America*. 2014. Volume 95 (1): 82-84.

Chicago River Trash Teeming with Life. Newspaper article by Abby Olena. Featured our research on anthropogenic litter abundance and ecosystem effects in rivers. *Chicago Tribune*. August 4, 2013.

Shellshocked: Saving Oysters to Save Ourselves. Documentary film by Emily Driscoll. 2012. Featured our research on oyster influences for nitrogen cycling in Jamaica Bay, NYC.

CONFERENCE PRESENTATIONS (* denotes undergraduates, § indicates graduate students)

Aldred, M., **Hoellein, T.J.**, Breusewitz, D.A, and C.B. Zarnoch. 2017. Restoring coastal marshes: How can we recover nitrogen-removal services in urban estuaries? Ecological Society of America. Portland, OR

- McNeish, R.E., Mason, S.A., **Hoellein, T.J.**, and J.J. Kelly. 2017. Sources of microplastic contamination in Lake Michigan and interactions with aquatic biota. International Association of Great Lakes Research. Detroit, MI.
- Chiarelli, P., §Reynar, K., §Kim, L., Hoellein, T.J., and J.J. Kelly. Analysis of compounds derived from aquatic plastic pollution by GC-TOFMS. American Society for Mass Spectrometry. Indianapolis, IN
- Hoellein, T.J., §Shogren, A.J., Tank, J.L., and J.J. Kelly. 2017. Microplastic deposition in streams: Influence of polymer type and biofilm colonization. Society for Freshwater Science. Raleigh, NC
- *Lourich, V., Neville, S., Lyandres, O., and T.J. Hoellein. 2017. Assessment of novel management strategies for anthropogenic litter on urban beaches. Society for Freshwater Science. Raleigh, NC
- *Vincent, A and **T. J. Hoellein**. 2017. Abundance and accumulation of anthropogenic litter on Great Lakes beaches. Society for Freshwater Science. Raleigh, NC
- §Kim, H.L, Dunn, S., and **T. J. Hoellein**. 2017. Anthropogenic litter in urban streams: Spatial distribution of plastic and its role in leaf litter breakdown. Society for Freshwater Science. Raleigh, NC
- Allred, M., **Hoellein, T.J.**, Breusewitz, D.A, and C.B. Zarnoch. 2016. Nitrogen removal services of restored salt marshes in Jamaica Bay. Annual Conference of the New York Marine Sciences Consortium. Bronx, NY. (Invited).
- Allred, M., **Hoellein, T.J.**, Breusewitz, D.A, and C.B. Zarnoch. 2016. Recovery of ecosystem services following wetland restoration in Jamaica Bay. State of the Bay Symposium. Brooklyn, NY. (Invited).
- Hoellein, T.J.** 2016. The influence of anthropogenic litter on ecosystem processes in urban streams. Society for Freshwater Science. Sacramento, CA.
- §Turner, B., N. O., Ogunsola, A. **Hoellein, T.J.** and J. J. Kelly. 2016. Microplastic represents a distinct microbial niche within freshwater ecosystems. Society for Freshwater Science. Sacramento, CA.
- Hoellein, T.J.**, §McCormick, A.R., London, M., and J.J. Kelly Consider a source: Microplastic in rivers is abundant, mobile, and selects for unique bacterial assemblages. 2016. American Society for Limnology and Oceanography. New Orleans, LA.
- *Sladek, J., **Hoellein, T.J.**, Poretsky, R., and J.J. Kelly. 2015. Spatial variation in activity and composition of the Chicago River system microbiome. Society for Freshwater Science. Milwaukee, WI
- *Westhoven, M., **Hoellein, T.J.**, Lyandres, O., and J. Cross. 2015. Spatial variation in density of anthropogenic litter on Lake Michigan beaches: role of river mouth proximity and fishing activity as revealed by citizen science data collection Society for Freshwater Science. Milwaukee, WI

- §McCormick, A.R., **Hoellein, T.J.**, *Hittie, J., London, M. and J.J. Kelly. 2015. Microplastic in urban streams: Source, abundance, and selection of unique bacterial assemblages. Society for Freshwater Science. Milwaukee, WI
- §Reisinger, A.J., Tank, J.L., **Hoellein, T.J.**, and R.O. Hall. 2015. Using MIMS to measure riverine sediment, water column, and open channel denitrification. Society for Freshwater Science. Milwaukee, WI
- Kelly, J.J., **Hoellein, T.J.**, Mason, S, §McCormick, A., and M. London. 2015. Microplastic particles are a novel and mobile habitat for microorganisms in freshwater ecosystems. Society for Freshwater Science. Milwaukee, WI
- London, M., §McCormick, A., **Hoellein, T.**, Mason, S, and J. Kelly. Bacterial colonization of microplastic particles in the Great Lakes. Society for Freshwater Science. Milwaukee, WI
- Hoellein, T.J.**, Zarnoch, C.B., and D.A. Bruesewitz. 2015. Freshwater mussels increase sediment denitrification in an urban river. Society for Freshwater Science. Milwaukee, WI
- Zarnoch, C.B., **Hoellein, T.J.**, and D.A. Bruesewitz. 2015, Ecosystem response to nutrient loadings following Hurricane Sandy in the Long Island South Shore Estuary: Increased nitrogen removal or availability? Benthic Ecology Meeting. Montreal, Quebec.
- §McCormick, A. and **T.J. Hoellein**. 2014. Anthropogenic litter and microplastic in urban streams: abundance, source, and fate Illinois Water Conference. Champaign, IL
- Hoellein, T.J.**, *Westhoven, M., Lyandres, O, and J. Cross. 2014. Litter on Lake Michigan beaches: Analysis of data from citizen scientists. Illinois Water Conference. Champaign, IL
- Hoellein, T.J.**, Kelly, J.J., McCormick, A., Rojas, M., *Westhoven, M., and O. Lyandres. 2014. Anthropogenic litter in urban freshwaters: Methods, abundance, and interactions with microbial communities. Symposium on Urban Stream Ecology. Portland, OR.
- Hoellein, T.J.**, §McCormick, A., and J.J. Kelly. 2014. Riverine microplastic: Abundance and bacterial community colonization. Joint Aquatic Sciences Meeting. Portland, OR.
- Bruesewitz, D.A., Zarnoch, C.B., **Hoellein, T.J.**, and J. Beaulieu. 2014. Nitrogen cycling dynamics at the sediment-water interface following Hurricane Sandy in the Long Island South Shore Estuary. Joint Aquatic Sciences Meeting. Portland, OR.
- Zarnoch, C.B., **Hoellein, T.J.**, Prudente, D., Furman, B., and B. Peterson. 2014. Nitrogen cycling in subtidal seagrass beds and unvegetated sediments within a temperate coastal lagoon. Joint Aquatic Sciences Meeting. Portland, OR.
- Hoellein, T.J.** and §K. Turek. 2013. Effects of the invasive Asian Clam, *Corbicula fluminea*, on nitrogen transformations in southern Great Lakes tributaries. International Association for Great Lakes Research. West Lafayette, IN.
- *Dunne, M., **Hoellein, T.J.**, and § K. Turek. 2013. Bottom-up and top-down drivers of behavior in invasive Asian Clam, *Corbicula fluminea*. Society for Freshwater Science. Jacksonville, FL

- §A. Cook and **T.J. Hoellein**. 2013. The role of macroinvertebrates and nutrient enrichment on leaf breakdown rate in an urban watershed. Society for Freshwater Science. Jacksonville, FL.
- Hoellein, T.J.**, *A. Pink, J. *Gasior. 2013. Distribution and biofilm metabolism of anthropogenic litter in urban freshwaters. Society for Freshwater Science. Jacksonville, FL.
- Bruesewitz, D.A., **Hoellein, T.J.**, *Hasiakos, S., and L. A. *Devlin. 2013. Patterns of spatial and temporal variation of ecosystem metabolism: A comparison of subtropical Atlantic and Gulf of Mexico ecosystems. Society for Freshwater Science. Jacksonville, FL.
- §Hassett, M.C., **Hoellein, T.J.**, Zarnoch, C.B., Bruesewitz, D.A., Branco, B.F., and W.S. 2013. Gardner. The influence of the eastern oyster (*Crassostrea virginica*) on nitrogen cycling in a eutrophic estuary. Society for Freshwater Science. Jacksonville, FL.
- Branco, B., Zarnoch, C., §Hassett, M., **Hoellein, T.**, and D. Bruesewitz. 2013. Hydrodynamic influences on nitrogen cycling at a restored Eastern Oyster (*Crassostrea virginica*) reef in a eutrophic estuary. New England Estuarine Research Society. Portland, Maine.
- *Oleksy I.A., Richardson D.C., Gibson, C.A., **Hoellein, T.J.**, Arscott, D.B., *Achterberg, L., *Bialowas, E., *Handler, A., *Miller, A., *Redfield, M. *Didymosphenia geminata* (Rock Snot) in the New York City Watershed – factors that affect the growth, spatial distribution, and timing of the Didymo bloom in the Esopus Creek (2010-2012). Catskill Environmental Monitoring and Research Conference poster, Highmount, New York.
- Hoellein, T.J.**, Gasior, J.*, and *A. Pink. 2012. Distribution and biological activity of anthropogenic litter in freshwater ecosystems. Illinois Water Conference, Champaign, IL.
- *Handler, A.M., *Oleksy I.A., Richardson D.C., *Rigolino, N., **Hoellein, T.**, Arscott, D.B., Gibson, C.A. 2012. Physiochemical controls of the growth of the invasive freshwater diatom, *Didymosphenia geminata*, in Rondout Creek, New York. Ecological Society of America Annual Meeting. Portland, OR
- *Oleksy, I.A., *Handler, A.M., *Rigolino, N., Arscott, D.B., Gibson, C.A., **Hoellein, T.**, Richardson, D.C. 2012. A spatial analysis of *Didymosphenia geminata* (rock snot) in the New York City watershed. Ecological Society of America Annual Meeting. Portland, OR.
- §Hassett, M.C., **Hoellein T.J.**, Zarnoch, C.B., Bruesewitz, D.A., Branco, B.F., and Gardner, W.S. 2012. The influence of the eastern oyster (*Crassostrea virginica*) reef restoration on nitrogen cycling in an urban estuary. Society for Freshwater Science Louisville, KY.
- §Turek, K., and **T.J. Hoellein**. 2012. Ecosystem effects of the invasive Asian Clam, *Corbicula fluminea*, in urban streams. Society for Freshwater Science Louisville, KY.
- *Polaskey, S., **Hoellein, T.J.**, and C.B. Zarnoch. 2012. The influence of hard clams, *Mercenaria mercenaria*, on sediment nitrogen cycling across a nutrient gradient in Jamaica Bay, New York City. Society for Freshwater Science Louisville, KY.
- Hoellein, T.J.**, Bruesewitz, D.A., and Richardson, D.C. 2012. Revisiting Odum (1956): A synthesis of ecosystem metabolism reveals drivers of primary production and respiration across streams, lakes, wetlands, and estuaries. Society for Freshwater Science Louisville, KY.

- Bruesewitz, D.A. and **T.J. Hoellein**. 2012. Concurrent measurements of nitrogen cycling and ecosystem metabolism along a river-estuary continuum. Society for Freshwater Science Louisville, KY.
- David, A*., Polaskey, S*., **Hoellein, T.J.**, and Zarnoch, C.B. 2012. The influence of oysters on sediment quality (C:N) in an urbanized coastal environment (Jamaica Bay, NYC). Chicago Area Undergraduate Research Symposium. Chicago, IL
- Hoellein, T.J.**, Zarnoch, C.B., Mass, A., Paramananda, N*., Mummini, S*., Law, D*., David, A*., Morgan, S*., and Polaskey, S*. 2011. The influence of the eastern oyster, *Crassostrea virginica*, on sediment nitrogen cycling across a nutrient gradient in eutrophic Jamaica Bay, New York City (NY, USA). Biannual Meeting of the Coastal and Estuarine Research Federation. Daytona Beach, FL.
- Zarnoch, C.B, **Hoellein T.J.**, §Mass, A., Law*, D., Paramananda, N*., Mummini, Isreal, G*., Zahabrov, V*., and H. Yan*. 2011. Eastern oyster, *Crassostrea virginica*, feeding and absorption in a eutrophic estuary. New England Estuarine Research Society. Biannual Meeting of the Coastal and Estuarine Research Federation Daytona Beach, FL.
- Zarnoch, C.B, and **T.J. Hoellein**. 2011. The influence of oyster feeding and biodeposition on sediment nitrogen cycling in Jamaica Bay, NY. New England Estuarine Research Society. Port Jefferson, NY.
- Zarnoch, C.B, **Hoellein, T.J.**, §Mass, A. Paramananda, N*., Law, D*., Mummini, S*., Zaharov, V*., Yan, H*., and G. Isreal*. 2011. Variability in eastern oyster, *Crassostrea virginica*, feeding behavior in a eutrophic estuary. National Shellfisheries Association 103rd Annual Meeting. Baltimore, MD.
- Hoellein, T.J.**, Zarnoch, C.B., §Mass, A., Paramananda, N*., Mummini, S*., Law, D*., David, A*., Morgan, S*., and Polaskey*, S. 2011. The influence of the eastern oyster, *Crassostrea virginica*, on sediment nitrogen cycling across a nutrient gradient in eutrophic Jamaica Bay, New York City (NY, USA). Annual Meeting of the North American Benthological Society, Providence, RI.
- Richardson, DC; Achterberg, L.A*, Redfield, M*, Root, S*, Arscott, D.A., Gibson, C, **Hoellein, T.J.** 2011. Rock snot in a sick river: water chemistry and links to *Didymosphenia geminata* blooms in Esopus Creek. Annual Meeting of the North American Benthological Society, Providence, RI.
- Achterberg, L.A*, Redfield, M*, Richardson, D.C., **Hoellein, T.J.**, Root, S*, Arscott, D.A., Gibson, C. 2011. The influence of macro and micronutrients on growth of the invasive diatom, *Didymosphenia geminata*, in a newly invaded stream (Esopus Creek, NY). Annual Meeting of the North American Benthological Society, Providence, RI.
- Zarnoch, C.B., **Hoellein, T.J.**, §Mass, A., Paramanand, N*., Law, D*., and S. Mummini*. 2010. The influence of oysters on sediment nitrogen cycling in Jamaica Bay, New York; an ecosystem approach. CUNY Environmental Sciences Forum. 8Nov 2010. CUNY Graduate School and University, New York, NY.

- Richardson, D.C., Achterberg, L.A*., Redfield, M*, Root, S*, Arscott, D.A., Gibson, C., **Hoellein, T.J.** 2010. Rock snot in a sick river: What causes didymo blooms in Esopus Creek? Catskill Environmental Monitoring and Research Conference, Highmount, NY.
- Bruesewitz, D.A., **Hoellein, T.J.**, and D.P. Hamilton. 2010. Rates of ecosystem function in streams across a gradient of geothermal activity (Tuapo Volcanic Plateau, New Zealand). Annual Meeting of the North American Benthological Society, Sante Fe, NM.
- Hoellein, T.J.**, Zak, Y*, and C. Kuang*. 2010. Spatial variability in nutrient concentrations and limitation in an urban watershed (Bronx River, NY). 2010. Annual Meeting of the North American Benthological Society, Sante Fe, NM.
- Hoellein, T.J.**, Zak, Y*, and C. Kuang*. 2010. Spatial variability in nutrient concentrations and limitation in an urban watershed (Bronx River, NY). 2010. MillionTreesNYC 2010 Research Symposium, New York, NY.
- Hoellein, T.J.**, Entrekin, S.A., J.L. Tank, E.J. Rosi-Marshall, and G. A. Lamberti. 2009. Comparing multiple metrics of ecosystem function reveals underlying controls on variation among and within headwater streams. Annual Meeting of the North American Benthological Society, Grand Rapids, MI
- Hoellein, T.J.**, J.L. Tank, Entrekin, S.A., and E.J. Rosi-Marshall. 2008. Does restoration enhance stream ecosystem resistance and resilience to storms? Annual Meeting of the North American Benthological Society, Salt Lake City, UT.
- Entrekin, S.A., J.L. Tank, B. Holland*, E.J. Rosi-Marshall, **T.J. Hoellein**, and G.A. Lamberti. 2008. An experimental large wood addition shifts carbon stable isotope signatures in stream macroinvertebrates. Annual Meeting of the North American Benthological Society, Salt Lake City, UT.
- Kominoski, J.S., **T.J. Hoellein**, C.J. LeRoy, C.M. Pringle, and C.M. Swan. 2008. Studies of stream organic matter processing advance the theoretical framework linking biodiversity and ecosystem function. Annual Meeting of the North American Benthological Society, Salt Lake City, UT.
- Hoellein, T.J.**, J.L. Tank, E.J. Rosi-Marshall, S.A. Entrekin. 2007. The influence of a substrate-based restoration strategy on stream nutrient uptake and metabolism. Annual Meeting of the North American Benthological Society, Columbia, SC.
- Entrekin, S.A., E.J. Rosi-Marshall, J.L. Tank, **T.J. Hoellein**, and G.A. Lamberti. 2007. Stream macroinvertebrate secondary production responds to an experimental wood addition in the Upper Peninsula of Michigan. Annual Meeting of the North American Benthological Society, Columbia, SC.
- Moerke, A.H., G.A. Lamberti, S.A. Entrekin, **T.J. Hoellein**, K. Pfeifer*, E.J. Rosi-Marshall, and J.L. Tank. 2007. Fish response to a replicated large wood addition in northern Michigan streams. Annual Meeting of the North American Benthological Society, Columbia, SC.
- Pfeifer, K*, E.J., Rosi-Marshall, J.L. Tank, **T.J. Hoellein**, S.A. Entrekin, and G.A. Lamberti. 2007. Effects of experimental large wood addition on stream geomorphology in three
C.V., T. Hoellein

Northern Michigan streams. Annual Meeting of the North American Benthological Society, Columbia, SC.

Hoellein, T.J., J.L. Tank, E.J. Rosi-Marshall, S.A. Entrekin, and G.A. Lamberti. 2006. The effects of a replicated large woody debris addition on whole-stream N uptake and metabolism via changes in substrata abundance. Annual Meeting of the North American Benthological Society, Anchorage, AK.

Lamberti, G.A. S.A. Entrekin, A.J. Fowler, **T.J. Hoellein**, E.J. Rosi-Marshall, and J.L. Tank. 2006. Large wood addition to three northern Michigan streams: Log dynamics and geomorphic responses. Annual National Meeting of the North American Benthological Society, Anchorage, AK.

Entrekin, S.A., **T.J. Hoellein**, G.A. Lamberti, E.J. Rosi-Marshall, and J.L. Tank. 2006. Leaf decomposition and colonization by macroinvertebrates before and after large wood addition to three forested streams in Michigan. Annual Meeting of the North American Benthological Society, Anchorage, AK.

Hoellein, T.J., J.L. Tank, E.J. Rosi-Marshall, S.A. Entrekin, and G.A. Lamberti. 2005. Controls on temporal variation of nutrient uptake in three headwater streams of the Upper Peninsula of Michigan. Annual Meeting of the North American Benthological Society, New Orleans, LA.

Rosi-Marshall, E.J. J. L. Tank, **T.J. Hoellein**, S.A. Entrekin, and G. A. Lamberti. 2005. Log-induced benthic sorting influences nutrient and particle retention in headwater streams. American Society for Limnology and Oceanography, Salt Lake City UT, Feb. 2005.

Hoellein, T.J., J.L. Tank, and E.J. Rosi-Marshall. 2004. Nutrient limitation of autotrophic and heterotrophic biofilms in 3 Northern Michigan Streams. Science of the North Woods Conference, Trout Lake, WI.

Rosi-Marshall, E. J., J.L. Tank, S.A. Entrekin, **T.J. Hoellein**, and G.A. Lamberti. 2004. Challenges for experimental design: Is replication possible for whole-stream manipulations? Annual Meeting of the North American Benthological Society, Vancouver, BC.

Hoellein, T.J., J.L. Tank, and E.J. Rosi-Marshall. 2004. Nutrient limitation of heterotrophic and autotrophic biofilms in three northern Michigan streams. Annual Meeting of the North American Benthological Society, Vancouver, BC.

TEACHING

Aquatic Ecology (BIO 395). Loyola University Chicago

Ecology (BIO 265). Loyola University Chicago. Fall 2010-Spring 2017

Introduction to Research (BIO 296, 396) Loyola University Chicago. Fall 2010-Spring 2017

BIO 422 Directed readings: Fall 2011, Spring 2012, Fall 2012, 2013, Spr 2017

BIO 511 Graduate student teaching assistants: Spr 2011, Spr 2012, Fall 2012, Spr 2013, Spr 2015, Fall 2015, Spr 2017

Capstone: Environmental Science (ENV 4900). Baruch College. Spring 2010

Human Conservation lecture and laboratory (ENV 3003). Baruch College. Spring 2010.
Independent Study (ENV 5000 and 5001). Fall 2009-Spring 2010.
Principles of Ecology lecture and laboratory (ENV 1020). Baruch College. Fall 2009.
Survey of the Living World, lecture and laboratory (BIO 1003). Baruch College. Fall 2008,
Spring 2009.

SYNERGYISTIC ACTIVITIES, REVEIWS, AND MENTEES

Committee member: LUC: Undergraduate Research Committee 2014-17, Undergraduate Curriculum Committee 2010-2015, New Hire committees 2010, 2012. Baruch College: Task Force on Sustainability, Biomedical Recommendations Committee, Global Studies Committee

Judge: Chicago Area Undergraduate Research Symposium, 2013-2015
Annual meeting of the Society for Freshwater Science, 2009-2015
Chicago Regional Junior Science and Humanities Symposium, LUC. 2010-2012
New York City Science Fair: March 2009. City University of New York.
Northern Indiana Science Fair: 2004, 2005, 2007. University of Notre Dame.

Co-organizer:

Special session “Understanding catchment and landscape scale patterns in ecosystem metabolism.” Annual meeting of the Society for Freshwater Science. May 2013.
Special session Influence of macroinvertebrates on N cycling in multiple biomes and ecosystems.” Annual meeting of the North American Benthological Society. May 2011.
Midwest Environment and Evolution Conference at Notre Dame, April 2004

Witness: Testimony to the Indiana House of Representatives on Bill 1185 to ban plastic microbeads from personal care products. February 3, 2015.

Reviewer: African Journal of Ecology, Aquatic Sciences, Biogeochemistry, Bulletin of Marine Science, Ecology, Ecological Applications, Ecological Engineering, Ecosystems, Environmental Chemistry, Environmental Management, Environmental Monitoring and Assessment, Environmental Science and Technology, Freshwater Biology, Freshwater Science (formerly Journal of the North American Benthological Society), Hydrobiologia, Journal of Environmental Management, Journal of Environmental Quality, Journal of Great Lakes Research, Journal of Intercultural Studies (book review), Limnology and Oceanography, Marine and Freshwater Science, National Environmental Research Council (UK), National Science Foundation, Northeastern Naturalist (Guest Editor), PLoS One, Restoration Ecology, River Research and Applications, Science of the Total Environment, Water Resources, Wetlands

Research mentor:

Undergraduate student research advisor: Steven Polaskey, Angeline David, Adam Pink, Simon Morgan, Owen McKenna, Joseph Gasior, Spyridon Hasiakos, Ricardo Magallon, Melaney Dunne, Matthew Girard, Patrick Canniff, Meagan Westhoven, Craig Stevens, Michelle Crisp, Joshua Hittie, Erin O’Connell, Claudia Urban, Lisa Kim, Anna Vincent, Anthony Overhiser,

Loren Hou, Genesis Bustamente, Randall Cybulski, Paul Risteca, Veronica Lourich, Aye Aye Myint

Graduate students: Kayla Turek, Michael Hassett, Ashley Cook, Samantha Lindemann (co-advised), Amanda McCormick, Lisa Kim, Anna Vincent, Loren Hou

Post-doctoral advisees: Rachel McNeish, Samuel Dunn

PROFESSIONAL AFFILIATIONS

Society for Freshwater Science

American Society of Limnology and Oceanography

Ecological Society of America