Cary Institute of Ecosystem Studies

Curriculum Vitae

Emma J. Rosi, Ph.D.
Senior Scientist
Cary Institute of Ecosystem Studies

Education

PhD. 2002. University of Georgia, Institute of Ecology, Athens, Georgia. Advisor Judy L. Meyer.

M.S. 1997. University of Georgia, Department of Entomology, Athens, Georgia. Advisor J. Bruce Wallace.

B.S. 1994. University of Michigan, Anthropology/Zoology.

Research Focus

Stream ecosystem processes and biogeochemistry, aquatic food webs, urban ecology, agricultural effects on streams, aquatic macroinvertebrates, large river ecology, and contaminants.

Academic Positions

Senior Scientist, July 2015-Present, *Cary Institute of Ecosystem Studies, Millbrook NY.*

Associate Scientist, July 2009-2015, *Cary Institute of Ecosystem Studies, Millbrook NY.*

Associate Professor, May 2009-June 2009, *Departments of Biology and Natural Science, Loyola University of Chicago.*

Assistant Professor, September 2004-2009, *Departments of Biology and Natural Science, Loyola University of Chicago.*

Post-Doctoral Research Associate, September 2002-2004, *Department of Biological Sciences, University of Notre Dame.* Advisors: Jennifer L. Tank and Gary A. Lamberti.

Synergistic Activities

Director (Lead PI), Baltimore Ecosystem Study, Long-term Ecological Research Site, Jan 2016-present

Science Advisory Roles: Ecological Processes and Effects Committee, US EPA Science Advisory Board, 2013-present. Connectivity of Waters of the US, US EPA Science Advisory Board, July 2013-2014. LTER Executive Board, 2013-2016.

Society for Freshwater Science, Special Assistant to the President (Vice President), May 2014-2017. Awards Committee Member May 2013-present.

Associate Editor, *Ecosystems*, March 2010-present. Editorial Board Member, *Freshwater Biology,* June 2016-present.

Awards: _Kaeser Scholar, Center for Limnology, University of Wisconsin, Oct 2015 (Kaeser scholars are selected by the graduate students). Fine Fellow, Fine Outreach for Science: Gigapan, Carnegie Mellon University, October 2009. Sujack Award for Excellence in Teaching, College of Arts and Sciences, Loyola University Chicago, Spring 2007.

Legislative Briefings: Pennsylvania State Assembly Briefing "Environmental consequences of pharmaceuticals in surface waters", Feb. 2017. Cheseapeake Bay Commission Briefing

"Environmental consequences of pharmaceuticals in surface waters", Jan 2017. US Congress briefing for the Long Term Ecological Research: regional data for large scale environmental issues congressional briefing organized by AIBS. Talk title: "The sanitary to the sustainable city: Long-term ecological research of the Baltimore urban ecosystem," June 2014. US Congress briefing focused on science related to the Water Resources Development Act organized by the Consortium of Aquatic Science Societies (CASS) Talk title: "Rivers: Dynamic, connected ecosystems", May 2013.

Publications

LaDeau, S.L., B.A. Han, E.J. Rosi-Marshall, and K.C. Weathers. 2017. The next decade of big data in ecosystem science. Ecosystems 20: 1-10. 10.1007/s10021-016-0075-y.

Griffiths1a Natalie A. , Jennifer L. Tank, Todd V. Royer, Emma J. Rosi, Arial J. Shogren, Therese C, and Matt R. Whiles. 2017. Occurrence, leaching, and degradation of Cry1Ab protein from transgenic maize detritus in agricultural streams. Science of the Total Environment 592: 97–105. 10.1016/j.scitotenv.2017.03.065

Reisinger, A. J., E. J. Rosi, H. A. Bechtold, T. R. Doody, S. S. Kaushal, and P. M. Groffman. 2017. Recovery and resilience of urban stream metabolism following Superstorm Sandy and other floods. Ecosphere 8(4):e01776. 10.1002/ecs2.1776

Bernhardt, E.S., E.J. Rosi, and M.O. Gessner. 2017. Synthetic chemicals: a neglected driver of global change. Submitted to Frontiers in Ecology and the Environment.

Bechtold, H. A., E. J. Rosi, D. R. Warren, and W. S. Keeton. 2017. Forest Age Influences In-stream Ecosystem Processes in Northeastern US. Ecosystems DOI: 10.1007/s10021-016-0093-9.

Reisinger, A.J., P.M. Groffman, and E.J. Rosi-Marshall. 2016. Nitrogen-cycling process rates across urban ecosystems. 2016. FEMS Microbiology Ecology 92. doi:10.1093/femsec/fiw198

Groffman, P.M, M. L Cadenasso, J. Cavender-Bares, D. L Childers, N. B Grimm, J M. Grove, S. E Hobbie, L. R Hutyra, G D. Jenerette, T. McPhearson, D. E Pataki, S.TA Pickett, R. V Pouyat, E. Rosi-Marshall, B. L Ruddell. 2016. Moving Towards a New Urban Systems Science. Ecosystems. 10.1007/s10021-016-0053-4.

Lee, S.S., A. Paspalof, D. Snow, E. Richmond, E.J. Rosi-Marshall, and J.J. Kelly. 2016. Occurrence and potential biological effects of amphetamine in stream ecosystems. Environmental Science and Technology 50:9727-35. doi:10.1021/acs.est.6b03717

Richmond, E.K., E.J. Rosi-Marshall, S.S. Lee, R.M. Thompson, and M.R. Grace. 2016. Antidepressants affect stream ecosystems: selective serotonin reuptake inhibitors (SSRIs) decrease algal production, but increase insect emergence. Freshwater Science *35 (3), 845-855.*

Pickett, S.T.A , M.L. Cadenasso, E.J. Rosi-Marshall, K.T. Belt, P.M. Groffman, J.M. Grove, E.G. Irwin, S.S. Kaushal, S.L. LaDeau, C.H. Nilon, C.M. Swan, and P.S. Warren. 2016. Dynamic heterogeneity: a framework to promote ecological integration and hypothesis generation in urban systems. Urban Ecosystems. doi:10.1007/s11252-016-0574-9

Rosi-Marshall, E., E.S. Bernhardt, G.E. Likens, C.T. Driscoll, and D.C Buso. 2016. Acid rain mitigation experiment shifts a forested watershed from a net sink to a net source of nitrogen. PNAS 113:7580-7583.

Rosi-Marshall, E., K.L. Vallis, C.V. Baxter, and J.M. Davis. 2016. Retesting a prediction of the River Continuum Concept: autochthonous versus allochthonous resources in the diets of invertebrates. Freshwater Science 35:534-543. doi:10.1086/686302

Costello, D.M., E.J. Rosi-Marshall, L.E. Shaw, M.R. Grace, and J.J. Kelly. 2015. A novel method to assess effects of chemical stressors on biofilm structure and function. Freshwater Biology. doi:10.1111/fwb.12641

Reisinger, A.J., J.L. Tank, E.J. Rosi-Marshall, R.O. Hall, Jr., and M.A. Baker. 2015. The varying role of water column nutrient removal along a river continua in contrasting landscapes. Biogeochemistry 125:115-131. doi:10.1007/s10533-015-0118-z

Wagner, A., J. DalSoglio, J. Harris, P. Labus, D. Larson, E. Rosi-Marshall, and K. Skrabis. 2015. A guide for establishing restoration goals for contaminated ecosystems. Integrated Environmental Assessment and Management 12:264-272. doi:10.1002/ieam.1709

Hall, R.O., J.L. Tank, M.A. Baker, E.J. Rosi-Marshall, and E.R. Hotchkiss. 2015. Metabolism, gas exchange, and carbon spiraling in rivers. Ecosystems 19:73. doi:10.1007/s10021-015-9918-1

Rosi-Marshall, E.J., H.A. Wellard Kelly, R.O. Hall, Jr., and K.A. Vallis. 2015. Methods for quantifying aquatic macroinvertebrate diets. Freshwater Science. doi:10.1086/684648

Walters, D.M., E.J. Rosi-Marshall, T.A. Kennedy, W.F. Cross, and C.V. Baxter. 2015. Mercury and selenium accumulation in the Colorado River food web, Grand Canyon, USA. Environmental Toxicology and Chemistry 10:2385-2394.

Rosi-Marshall, E.J., and J. J. Kelly. 2015. Antibiotic stewardship should consider environmental fate of antibiotics. Environmental Science and Technology 49. doi:10.1021/acs.est.5b01519

Hall Jr., R.O., C.B. Yackulic, T.A. Kennedy, M.D. Yard, E.J. Rosi-Marshall, N. Voichick, and K.E. Behn. 2015. Turbidity, light, and hydropeaking control daily variation in primary production in the regulated Colorado River in Grand Canyon, Arizona. Limnology and Oceanography 60:512-526. doi:10.1002/lno.10031

Zahn Seegert, S.E., E.J. Rosi-Marshall, C.V. Baxter, T.A. Kennedy, R.O. Hall, Jr., and W.F. Cross. 2015. Diet overlap suggests competition between native small-bodied fishes and non-native fathead minnow in the Colorado River, Grand Canyon, Arizona. Transactions of the American Fisheries Society 143:1072-1083.

Subalusky, A., C. Dutton, E.J. Rosi-Marshall, and D.M. Post. 2015. The hippopotamus conveyor belt: vectors of carbon and nutrients from terrestrial grasslands to aquatic systems in sub-Saharan Africa. Freshwater Biology 60:512-525. doi:10.1111/fwb.12474

Rosi-Marshall, E.J., D. Snow, S.L. Bartelt-Hunt, *A. Paspalof, and J.L. Tank. 2015. A review of ecological effects and environmental fate of illicit drugs in aquatic ecosystems. Journal of Hazardous Materials 282:18-25. http://dx.doi.org/10.1016/j.jhazmat.2014.06.062

Dodds, W.K., S.M. Collins, S.K. Hamilton, J.L. Tank, S. Johnson, J.R. Webster, K.S. Simon, M.R. Whiles, H.M. Rantala, W.H. McDowell, S.D. Peterson, T. Riis, C.L. Crenshaw, S.A. Thomas, P.B. Kristensen, B.M. Cheever, A.S. Flecker, N.A. Griffiths, T. Crowl, E.J. Rosi-Marshall, R. El Sabaawi, and E. Martí. 2014. You are not always what we think you eat: selective assimilation across multiple whole-stream isotopic tracer studies. Ecology 95:2757-2767.

Hotchkiss, E.R., R.O. Hall Jr., M.A. Baker, E.J. Rosi-Marshall, and J.L. Tank. 2014. Modeling priming effects on microbial consumption of dissolved organic carbon in rivers. Journal of Geophysical Research: Biogeosciences 119:982-995. doi:10.1002/2013JG002599

Strayer, D.L., J.J. Cole, S.E.G. Findlay, D.T. Fischer, J.A. Gephart, H.M. Malcom, M.L. Pace, and E.J. Rosi-Marshall. 2014. Decadal-scale change in a large-river ecosystem. Bioscience 64:496-510.

Roales, J., J.H. Durán, *H.A. Bechtold, P.M. Groffman, and E.J. Rosi-Marshall. 2013. High resolution measurement of light in terrestrial ecosystems using photodegrading dyes. PLoSOne 8:e75715. doi:10.1371/journal.pone.0075715

Hall Jr., R.O., M.A. Baker, E.J. Rosi-Marshall, J.L. Tank, and J.D. Newbold. 2013. Solute specific scaling of inorganic nitrogen and phosphorus uptake in streams. Biogeosciences 10:6671-6693.

Drury, B., J. Scott, E.J. Rosi-Marshall, and J.J. Kelly. 2013. Triclosan exposure increases triclosan resistance and alters taxonomic composition of benthic bacterial communities. Environmental Science and Technology 47:8923-8930. dx.doi.org/10.1021/es401919k

Warren, D.R., W.S. Keeton, H.A. Bechtold, and E.J. Rosi-Marshall. 2013. Comparing streambed light availability and canopy cover in streams with old-growth versus early-mature riparian forests in western Oregon. Aquatic Sciences 75:547. doi:10.1007/s00027-013-0299-2

Griffiths, N.A., J.L. Tank, T.V. Royer, S.S. Roley, E.J. Rosi-Marshall, M.R. Whiles, J.J. Beaulieu, and L.T. Johnson. 2013. Agricultural land use alters the seasonality and magnitude of stream metabolism. Limnology and Oceanography 58:1513-1529.

Cross, W.F., C.V. Baxter, E.J. Rosi-Marshall, R.O. Hall, Jr., T.A. Kennedy, K.C. Donner, H.A. Wellard Kelly, and S. Zahn Seegert. 2013. Food web dynamics in a river discontinuum. Ecological Monographs 83:311-337.

Davis, J.M., C.V. Baxter, E.J. Rosi-Marshall, J.L. Pierce, and B.T. Crosby. 2013. Anticipating stream ecosystem responses to climate change: toward predictions that incorporate effects via land–water linkages. Ecosystems 16:909-922. http://dx.doi.org/10.1007/s10021-013-9653-4

Rosi-Marshall, E.J., D. Kincaid, H.A. Bechtold, T.V. Royer, M. Rojas, and J.J. Kelly. 2013. Pharmaceuticals suppress algal growth and microbial respiration and alter bacterial communities of stream biofilms. Ecological Applications 23:583-593.

Wellard Kelly, H.A., E.J. Rosi-Marshall, T.A. Kennedy, R.O. Hall, Jr., W.F. Cross, and C.V. Baxter. 2013. Turbidity in a large regulated river drives patterns of resource use by macroinvertebrates. Freshwater Science 32:397-410.

Drury, B., E.J. Rosi-Marshall, and J.J. Kelly. 2013. Wastewater treatment effluent reduces the abundance and diversity of benthic bacterial communities in urban and suburban rivers. Applied and Environmental Molecular Biology 79:1897. doi:10.1128/AEM.03527-12

Bechtold, H.A., E.J. Rosi-Marshall, D.R. Warren, and J.J. Cole. 2012. A practical method for measuring integrated solar radiation reaching streambeds. Freshwater Science 31:379-388.

Rosi-Marshall, E.J. and T.V. Royer. 2012. Pharmaceutical compounds and ecosystem function: an emerging research challenge for aquatic ecologists. Ecosystems 15:867-880. doi:10.1007/s10021-012-9553-z

Hall, R.O. Jr., T.A. Kennedy, and E.J. Rosi-Marshall. 2012. Air-water oxygen exchange in a large, whitewater river. Limnology and Oceanography: Fluids and Environments 2:1-11. doi:10.1215/21573689-1572535

Hoppe, P.D., E.J. Rosi-Marshall, and H.A. Bechtold. 2012. The antihistamine cimetidine alters invertebrate growth and population dynamics in artificial streams. Freshwater Science 31:379-388.

Griffiths, N.A., J.L. Tank, T.V. Royer, T.J. Warrner, T.C. Frauendorf, E.J. Rosi-Marshall, and M.R. Whiles. 2011. Temporal variation in organic carbon spiraling in Midwestern agricultural streams. Biogeochemistry 108:149-169. doi:10.1007/s10533-011-9585-z

Cross, W.F., C.V. Baxter, K.C. Donner, E.J. Rosi-Marshall, T.A. Kennedy, R.O. Hall, Jr., *H.A. Wellard Kelly, and R.S. Roger. 2011. Ecosystem ecology meets adaptive management: food web response to a controlled flood on the Colorado River, Glen Canyon. Ecological Applications 21:2016-2055.

Hoellein, T.J., J.L. Tank, S.A. Entrekin, E.J. Rosi-Marshall, M.L. Stephen, and G.A. Lamberti. 2013. Effects of benthic habitat restoration on nutrient uptake and ecosystem metabolism in three headwater streams. River Research and Applications 28:1451-1461. doi:10.1002/rra.1547

Pouyat, R.V., K.C. Weathers, R. Hauber, G.M. Lovett, A. Bartuska, L. Christenson, J.L.D. Davis, S.E.G. Findlay, H. Menninger, E. Rosi-Marshall, P. Stine, and N. Lymn. 2010. The role of federal agencies in the application of scientific knowledge. Frontiers in Ecology and the Environment 8:322-328.

Tank, J.L., E.J. Rosi-Marshall, T.V. Royer, M.R. Whiles, N.A. Griffiths, T.C. Frauendorf, and D.J. Treering. 2010. Occurrence of maize detritus and a transgenic insecticidal protein (Cry1Ab) within the stream network of an agricultural landscape. Proceedings of the National Academies of Sciences 107:17645-17650.

Hoellein, T., 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.

Cross, W. F., E. J. Rosi-Marshall, K. Behn, T. A. Kennedy, R. O. Hall, A. E. Fuller, and C. V. Baxter. 2010. Invasion and production of New Zealand mud snails in the Colorado River, Glen Canyon. *Biological Invasions* doi:10.1007/s10530-010-9694-y

Chambers, C. P., M. R. Whiles, E. J. Rosi-Marshall, J. L. Tank, T. V. Royer, N. A. Griffiths, M. A. Evans-White, and A. Stojak. 2010. Responses of stream macroinvertebrates to Bt maize leaf detritus. *Ecological Applications* 20:1949-1960.

Tank, J. L., E. J. Rosi-Marshall, N. A. Griffiths, S. A. Entrekin, and M. L. Stephen. 2010. A review of allochthonous organic matter dynamics and metabolism in streams. *Journal of the North American Benthological Society, Special 25th Anniversary Issue* 29:118-146e.

Warrner, T. J., T. V. Royer, J. L. Tank, N. A. Griffiths, E. J. Rosi-Marshall, and M. R. Whiles. 2010. Origin and bioavailability of dissolved organic carbon in agricultural headwater streams in Indiana, USA. *Biogeochemistry* 95:295–307.

Entrekin, S. A., J. L. Tank, E. J. Rosi-Marshall, T. J. Hoellein, and G. A. Lamberti. 2009. Response of secondary production by macroinvertebrates to large wood addition in three Michigan streams. *Freshwater Biology* 54(8):1741-1758.

Hoellein T. J., J. L. Tank, E. J. Rosi-Marshall, and S.A. Entrekin. 2009. Temporal variation of substratum-specific rates of N uptake and metabolism and their relative contribution at the stream-reach scale. *Journal of the North American Benthological Society* 28:305–318.

Griffiths, N. A., J. L. Tank, T. V. Royer, C. P. Chambers, M. A. Evans-White, T. C. Frauendorf, E. J. Rosi-Marshall, and M. R. Whiles. 2009. Microbial respiration and decomposition of conventional and genetically-engineered corn detritus in Midwestern US agricultural streams. *Ecological Applications* 19:133–142.

Schofield, K. A., C. M. Pringle, J. L. Meyer, and E. J. Rosi-Marshall. 2008. Functional redundancy of macroconsumers across human-impacted landscape. *Freshwater Biology* 53:2587–2599.

Tank, J. L., E. J. Rosi-Marshall, M. A. Baker, and R. O. Hall. 2008. Are rivers just big streams? Using a novel method to quantify nitrogen demand in a large river. *Ecology* 89:2935–2945.

Cordova, J. M., E. J. Rosi-Marshall, J. L. Tank, and G. Lamberti. 2008. Coarse particulate organic matter transport in low-gradient streams of the Upper Peninsula of Michigan. *Journal of the North American Benthological Society* 27:760–771.

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.

Marvier, M., Y. Carriere, N. Ellstrand, P. Gepts, P. Kareiva, E. J. Rosi-Marshall, B. Tabashnik, L. L.Wolfenbarger. 2008. Harvesting data from USA's grand experiment with genetically engineered crops. *Science* 320:452-453.

Rosi-Marshall, E. J., J. L. Tank, T.V. Royer, M. R. Whiles, M. Evans-White, C. Chambers, N. A. Griffiths, J. Pokelsek, and M. L. Stephen. 2007. Toxins in transgenic crop byproducts may affect headwater stream ecosystems. *Proceedings of the National Academy of Sciences* 104:16204-16208.

Entrekin, 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* 26:472–490.

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

Cordova, J., E. J. Rosi-Marshall, A. Yamamuro, and G. A. Lamberti. 2007. Quantity, controls, and functions of large woody debris in Midwestern U.S.A. streams. *River Research and Applications* 23:21–

Rosi-Marshall, E. J., A. H. Moerke, and G. A. Lamberti. 2006. Ecological responses to rehabilitation of a Northern Michigan trout stream. *Environmental Management* 38:99-107.

Rosi-Marshall, E. J. and J. L. Meyer. 2004. Quality of suspended fine particulate matter in the Little Tennessee River. *Hydrobiologia* 519:29-37.

Rosi-Marshall, E. J. 2004. Quality of suspended fine particulate matter along an urban river. *Freshwater Biology* 49:515-625.

Rosi-Marshall, E. J. and J. B. Wallace. 2002. Invertebrate food webs along a stream resource gradient. *Freshwater Biology* 47:129-141.

Rosi-Marshall, E. J., J. L. Meyer, K. Neumann, and W. B. Lyons. 2001. Defining away metal contamination in Georgia streams. Hatcher, K. J. (Ed.). *Proceedings of the Georgia Water Resources Conference*. Published by the Institute of Ecology, University of Georgia.

Rosi, E. J. 1999. A critique of new water quality criteria in Georgia: Policy and ecological implications. Hatcher, K. J. (Ed.). *Proceedings of the Georgia Water Resources Conference*. Published by the Institute of Ecology, University of Georgia.

Book Chapters

Tank, J. L., M. J. Bernot, and E. J. Rosi-Marshall. 2006. Nitrogen limitation and uptake. Pp. 213-238. In: F. R. Hauer and G. A. Lamberti (Eds.). Methods in Stream Ecology. Academic Press.

Groffman, P.M. and E.J. Rosi-Marshall. 2013. The nitrogen cycle. pp. 137-157. In: K.C. Weathers, D.L. Strayer and G.E. Likens. Fundementals of Ecosystem Science. Academic Press.

Published Reports

Rosi-Marshall, E. J., T. A. Kennedy, D. W. Kincaid, W. F. Cross, H. A. W. Kelly, K. A. Behn, T. White, R. O. Hall, Jr., and C. V. Baxter. 2010. Short-term effects of the 2008 high-flow experiment on macroinvertebrates in the Colorado River below Glen Canyon Dam, Arizona: U.S. Geological Survey Open-File Report 2010-1031, 28 p.

Melis, T. S., D. J. Topping, P. E. Grams, D. M. Rubin, S. A. Wright, A. E. Draut, J. E. Hazel, Jr., B. E. Ralston, T. A. Kennedy, E. Rosi-Marshall, J. Korman, K. D. Hilwig, and L. M. Schmit. 2010. 2008 High-flow experiment at Glen Canyon Dam benefits Colorado River resources in Grand Canyon National Park: U.S. Geological Survey Fact Sheet 2010-3009, 4 p.

Kelly, J., E. Rosi-Marshall, and J. Scott. 2015. Ecotoxicology of antimicrobial pharmaceutical and personal care products in Illinois rivers and streams. Illinois Sustainable Technology Center – Research Report Series, 57 p.

Outreach publications

Rosi-Marshall, E.J. 2011. "Deadly frog disease illustrates dangers of wildlife trade" Poughkeepsie Journal, 4 Dec.

Rosi-Marshall, E.J. 2011. "Colorado River can be revived" Poughkeepsie Journal, 11 Sept.

Rosi-Marshall, E. J. 2010. "Our river on drugs" Poughkeepsie Journal, 14 Feb.

Grants

Rosi, E.J. and others. "LTER: Dynamic heterogeneity: Investigating causes and consequences of ecological change in the Baltimore urban ecosystem" National Science Foundation. Total award $2,254,000. March 1 2017- Feb 2018, 2010.

Egan, S. P., J. L. Feder, D. M. Lodge, J. L. Tank, C. E. Tanner, S. T. Ruggiero, A. Aubeneua, and E. J. Rosi, "Monitoring the Dispersal of Genetically Engineered Organisms and Their Byproducts Using Light Transmission Spectroscopy II, USDA Biotechnology Risk Assessment Research Grants Program ($43,956 via sub-award from Rice University), October 1,2016 – September 30, 2018.

C. Redmond and N. Grimm, Arizona State University. "Urban River Sustainability Research Network". National Science Foundation. Total award $12,000,00. Award amount to Co-PI Rosi-Marshall and Groffman at Cary Institute $799,656. Sept 15, 2015- Sept 2018.

Groffman, P. M., E. J. Rosi-Marshall, and S. LaDeau. "Collaborative Coastal SEES: Restoration, redevelopment, revitalization and nitrogen in a coastal watershed." National Science Foundation DEB, $702,875. October 2014-September 2017.

Rosi-Marshall, E. J. "Collaborative Research: Wildlife subsidies interact with discharge to influence ecosystem function of a large African river." (In Collaboration with D. Post, Yale University) National Science Foundation DEB, $437,620. April 2014-May 2017.

Egan, S. P., J. L. Feder, D. M. Lodge, J. L. Tank, S. Howard, C. E. Tanner, S. T. Ruggiero, and E. J. Rosi-Marshall. "Monitoring the dispersal of genetically engineered organisms and their byproducts using light transmission spectroscopy." US Department of Agriculture, $500,000 (Rosi-Marshall subcontract: $56,958.) 2013-2015.

Grace, M. (Monash University), P. Marriott (Monash University), E. J. Rosi-Marshall, R. Coleman (Melbourne Water Corporation), and V. Pettigrove (Melbourne Water Corporation and the University of Melbourne). "Impacts of pharmaceuticals and personal care products on

Australian aquatic ecosystems." Australian Research Council Linkage Grant, ID# LP130100040, $428,000 (A$). July 2013-June 2016.

Rosi-Marshall, E. J. Cary Institute of Ecosystem Studies Artificial Stream Facility for

Pharmaceutical Research. Wallace-Genetic Foundation and Cornell-Douglas Foundation, $170,000. 2012-2014.

Berkowitz, A., E. J. Rosi-Marshall, S. Findlay, and F. Keesing. REU Site: Translation Ecology for Undergraduates. National Science Foundation, $595,927. 2010-2015.

Pickett, S. et al. (Rosi-Marshall is a Co-PI). Baltimore Ecosystem Study, Long-Term Ecological Research: Phase III – Adaptive Processes in the Baltimore Socio-Ecological System: From the Sanitary to the Sustainable City. National Science Foundation, $5,640,000. 2011-2016.

LaDeau, S., E. J. Rosi-Marshall, J. J Cole, and J. Wallace. Collaborative Research: Trophic regulation and support of mosquitoes: An ecosystem approach to pest emergence along an urban gradient. National Science Foundation, $150,000. 2010-2012.

Strayer, D., S. Findlay, J. J. Cole, M. Pace, and E. J. Rosi-Marshall. LTREB: Long-term effects of a species invasion on an aquatic ecosystem. National Science Foundation, $450,000. 2010-2015.

Rosi-Marshall, E. J., D. Warren, W. Keeton, and J. J. Cole. Evaluating the influence of riparian forest structure on stream ecosystems across the northern forest. Northeastern States Research Cooperative, $149,568. 2010-2013.

Rosi-Marshall, E. J. Research Experience for Undergraduates Supplement, 2010. National Science Foundation, $6,000 (2009).

Kelly, J. J, E. J. Rosi-Marshall, and T. Chow. Ecotoxicology of antimicrobial pharmaceutical and personal care products in Illinois rivers and streams. Illinois Waste Management and Research Center, $129,800. 2008-2010.

Rosi-Marshall, E. J. (Collaborative proposal with J. L. Tank, M. A. Baker, R. O. Hall, and M. R. Sivapalan). Using empirical and modeling approaches to extend nutrient spiraling from rivulets to rivers. National Science Foundation, $782,000. 2009-2012.

Hall, R. O. and E. J. Rosi-Marshall. Linking whole-system carbon cycling to quantitative food webs in the Colorado River. US Geological Survey, $1,217,000. 2006-2011.

Soranno, P., K. S.Cheruvelil, E. J. Rosi-Marshall, and J. L. Tank. Water resources assessment of the Indiana Dunes National Lakeshore. National Park Service, $75,000. 2005-2006.

Rosi-Marshall, E. J. Occurrence and ecological effects of pharmaceutical chemicals in Chicago metropolitan area streams. Illinois Water Resources Association, $40,000. 2005-2007.

Tank, J. L., E. J. Rosi-Marshall, M. R. Whiles, and T. V. Royer. Cycling of novel allochthonous carbon in Midwestern agricultural streams. National Science Foundation, $591,000. 2005-2008.

Public education

Teale Lecture, *Our Rivers on Drugs*, University of Connecticut Storrs, November 2016.

Public Lecture at the Cary Institute, *Our Rivers on Drugs*. February 2015.

Presenter at Baltimore Science for a Sustainable City, *Clean waters – what pollutants are we dealing with on the Gwynns Falls, Gwynns Run and Watershed 263*. Baltimore, MD. October 2014.

Presenter at the Beacon Sloop Club, March 2015. *Our Rivers on Drugs*.

Keynote Speaker at the Hudson River Watershed Alliance meeting, *Ecological effects of contaminants of emerging concern*. Hyde Park, NY. 7 October 2014.

Keynote Speaker at the Southern Connecticut Science Fair, *Your River on Drugs: inputs, fate and ecology effects of pharmaceuticals on aquatic ecosystems*. Connecticut. April 2013.

Lecture for Skeneateles High School. Invited to be the annual Environmental Studies Speaker. Supported by the Skeneateles Lake Association, *Your River on Drugs: inputs, fate and ecology effects of pharmaceuticals on aquatic ecosystems*. Skeneateles, NY. April 2013.

Lecture to the College Board AP Biology Readers Program. *Your River on Drugs: inputs, fate and ecology effects of pharmaceuticals on aquatic ecosystems*. There were 450 AP Biology teachers and college professors in attendance. Kansas City, MO. June 2012.

Celebrating 40 Years of the Clean Water Act, A Conference of the Hudson River Environmental Society. *Outside the scope of the Clean Water Act: The ecological consequences contaminants of emerging concern on freshwater ecosystems*. March 2012.

Cary Institute Hydrofracking Forum, Moderator, April 2012.

North Country Garden Club, *Your River on Drugs*. Long Island, NY. March 2012.

University of Maryland Baltimore County, Center for Urban Environmental Research and Education, *Novel contaminants in aquatic ecosystems: inputs, fates and potential ecological effects*. February 2012.

Public Lecture at the Cary Institute, *Genetically Modified Crops and the Environment: An Evolving story*. October 2011.

Freshwater Forum at the Cary Institute, *Human Impacts to Freshwater*. May 2011.

Nine Partners Garden Club, *Adventures in Aquatic Ecology*. June 2011.

Clarkston Environmental Summer Invited speaker, *Human Impacts to Freshwater*. March 2011.

Short lecture/hike with Dave Strayer on Freshwater Ecology, Autumn Celebration, Cary Institute, October 2010.

Adventures in Aquatic Ecology, *The challenges of studying food webs of the Colorado River, Grand Canyon*. Ecodiscovery Day. Cary Institute of Ecosystem Studies. May 2010.

Fates and Sources of pharmaceuticals and personal care products in aquatic ecosystems. Hudson River Environmental Society - What's in our Water Conference. Poughkeepsie, NY. April 2010.

Graduate Students Supervised

P. Hoppe, MS, Loyola University of Chicago, Advisor 2006-2010.

H. Wellard Kelly, MS, Loyola University Chicago, Advisor 2006-2010.

S. Zahn, MS, Loyola University Chicago, Advisor 2007-2010.

K. Vallis, MS, Loyola University Chicago, Advisor 2008-2011.

K. Donner, MS, Idaho State University, Committee Member 2008-2010.

R. VanDuzor, MS, Loyola University Chicago, Committee Member 2007-2010.

L. Dandridge, MS, Loyola University Chicago, Committee Member 2006-2010.

A. J. Reisinger, PhD, University of Notre Dame, Committee Member 2010-Present.

A. Subalusky, PhD. Yale University, Committee Member 2011-Present.

A. Paspalof, M.S. University of Nebraska Lincoln, Co-Advisor 2013-Present.

E. Richmond, PhD, Monash University, Co-Advisor, 2014-Present.

K. MacNeil, PhD. Cornell University, Committee Member, 2013-Present.

A. Shogren, PhD. University of Notre Dame, Committee Member 2014-Present.
R. Marinos, PhD, Duke University, Committee Member, 2014-Present.
A. Sparkman, PhD., University of Maryland College Park, Committee Member, 2015-Present.
J. Blaszczak, PhD. Duke University, Committee Member, 2015-Present.

Post-Docs Supervised

W. Cross, University of Wyoming, Co-Mentored, 2006-2009.
J. Davis, Idaho State University, Co-Mentored, 2009-2011.
H. Bechtold, Cary Institute, Mentor, 2010-2013.
S. Lee, Cary Institute, Mentor, 2013-Present.
A.J. Reisinger, Cary Institute, Mentor, 2015-Present.
A. Subalusky, Cary Institute, Mentor, 2016-Present.