

David C. Richardson

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Positions held

2010 – present	Assistant Professor, Biology Department, SUNY New Paltz, New Paltz, NY
2010 – present	Visiting Scientist, Cary Institute of Ecosystem Studies, Millbrook, NY
2009 – 2010	Visiting Scholar, Dept. of Biological Sciences, Dartmouth College, Hanover, NH
2008 – 2009	Postdoctoral scientist, Cary Institute of Ecosystem Studies, Millbrook, NY
2008 May – September	Postdoctoral scientist, Stroud Water Research Center, Avondale, PA

Education

2002 – 2008	Ph.D. in Stream Ecology. Marine, Estuarine, and Environmental Sciences (MEES), University of Maryland, College Park, MD. <i>Research advisors:</i> Dr. Margaret Palmer, Dr. Louis Kaplan <i>Dissertation title:</i> Transport, sources, and quality of seston in a Piedmont headwater stream.
1998 – 2002	B.S. in Operations Research and Industrial Engineering. Cornell University, College of Engineering, Ithaca, NY.

Training

2009 – 2010	Faculty Institutes for Reforming Science Teaching (FIRST IV). FIRST (funded by the National Science Foundation) is a national dissemination project designed to reform undergraduate science education through professional development of postdocs and to focus on learner-centered classrooms. https://www.msu.edu/~first4/
2009	CUAHSI (Consortium of Universities for the Advancement of Hydrologic Sciences) Optical Sensor Workshop. University of Vermont, Burlington, VT.
2004	Fundamentals of Ecosystem Ecology short course, Cary Institute of Ecosystem Studies, Millbrook, NY.
2002 – 2005	Ecological Circuitry Collaboratory (ECC) – National Science Foundation sponsored program to "close the circuit" between empiricists and modelers by training a group of young scientists to recognize themselves as both. http://www.ecostudies.org/cc/index.html

Publications

<i>In prep.</i>	Solomon, CT, Bruesewitz, DA, <i>Richardson, DC</i> , et al. Pelagic community respiration: drivers of daily variation in lakes around the globe. Aimed Submission: Limnology and Oceanography.
<i>In prep.</i>	Bruesewitz, DA, Hoellein, TH, <i>Richardson, DC</i> . Revisiting Odum (1956): A synthesis of ecosystem metabolism reveals drivers of primary production and respiration across streams, lakes, wetlands, and estuaries. Aimed submission: Ecology
<i>In prep.</i>	Klug, JL, <i>Richardson, DC</i> , et al. Ecosystem effects of a tropical cyclone on a network of lakes in NE North America. Aimed Submission: Nature Geosciences

- In review* *Richardson DC*, Newbold, JD, Aufdenkampe, AK, Taylor, PG and Kaplan, LA. A method for measuring bacterial mineralization rates of suspended particulate organic carbon in stream ecosystems. *Limnology and Oceanography Methods*.
- 2010 Pace, ML, Hampton, SE, Limburg, KE, Bennett, EM, Cook, EM, Davis, AE, Grove, JM, Kaneshiro, KY, LaDeau, SL, Likens, GE, McKnight, DM, *Richardson, DC*, and Strayer, DL. Communicating with the public: opportunities and rewards for individual ecologists. *Frontiers in Ecology and the Environment* 8(6):292-298.
- 2009 Palmer, MA and *Richardson, DC*. Provisioning services: a focus on freshwater. In *The Princeton Guide to Ecology*, Levin, SA, Ed. Princeton University Press: Princeton, NJ.
- 2009 *Richardson, DC*, Kaplan, LA, Newbold, JD and Aufdenkampe, AK. Temporal dynamics of seston: A recurring nighttime peak and seasonal shifts in composition in a stream ecosystem. *Limnology and Oceanography* 54(1):344-354.
- 2008 Menninger, HL, Palmer, MA, Craig, LS, and *Richardson, DC*. Periodical cicada detritus impacts stream ecosystem function. *Ecosystems* 11(8):1306-1317.
- 2008 Craig, LS, Palmer, MA, *Richardson, DC*, et al. Stream restoration strategies for reducing river nitrogen loads. *Frontiers in Ecology and the Environment* 6(10):529-538.
- 2008 Swan, CM, Healey, B and *Richardson, DC*. The role of native riparian tree species in decomposition of invasive Tree of Heaven (*Ailanthus altissima*) leaf litter in an urban stream. *Ecoscience* 15(1):27-35.

Other Media Publications

- 2010 Root, SM* and *Richardson, DC*. Rock snot growing in New York rivers. Poughkeepsie Journal. 12 Sep. 2010: 3F. Print.
- 2010 *Richardson, DC* and Dorsi, JJ*. Ice-out records track climate change. Poughkeepsie Journal. 11 Apr. 2010: 3F-4F. Print.

* indicates undergraduate student

Awards and Funding

- 2011 – 2012 Ashokan Watershed Stream Management Program mini grant program. Didymo in Esopus Creek: Identification of bloom locations and dissemination of decontamination methods to citizens and scientists. Collaborators: T. Hoellein, Baruch College; D. Arscott, Stroud Water Research Center; Catherine Gibson, Skidmore College.
- 2011 Summer Undergraduate Research Experience (SURE) Award. Rock Snot (Didymo), a nuisance algae in Catskills streams: where, why, and how much? Summer stipend and research funding for New Paltz undergraduate student, Nathaniel Rigolino.
- 2010 – 2011 Supplemental funding to develop smart-phone applications for citizen scientists to collect and view environmental data. National Science Foundation award #OCI-0753310, "Collaborative Research: CI-Team Demonstration: Developing a Model for Engagement of Citizen Scientists: Lake Associations." Collaborators: K. Weathers, Cary Institute of Ecosystem Studies; June Fichter, Lake Sunapee Protective Association; Barbara Benson, University of Wisconsin; Ken Chiu, SUNY Binghamton; Ann

Zimmerman, University of Michigan.

- 2010 Summer Undergraduate Research Experience (SURE) Award. Water quality of two anthropogenically affected water bodies: Lake Sunapee and the Wallkill River. Summer stipend and research funding for New Paltz undergraduate student, Steven DiFalco.
- 2010 – 2011 Ashokan Watershed Stream Management Program mini grant program. Rock Snot in Sick Rivers. Collaborators: T. Hoellein, Baruch College; D. Arscott, Stroud Water Research Center; Catherine Gibson, Skidmore College.
- 2010 – 2011 Water Resources Research Grant, NYS Water Resources Institute. Rock snot in sick rivers: What are the environmental drivers controlling blooms of the invasive diatom *Didymosphenia geminata* in the Northeastern and Mid-Atlantic United States? Collaborators: T. Hoellein, Baruch College; D. Arscott, Stroud Water Research Center; Catherine Gibson, Skidmore College.
- 2008 – 2011 National Science Foundation Cyberinfrastructure grant. Developing a model for engagement of citizen scientists: lake associations. Collaborators: K. Weathers, Cary Institute of Ecosystem Studies; June Fichter, Lake Sunapee Protective Association; Barbara Benson, University of Wisconsin; Ken Chiu, SUNY Binghamton; Ann Zimmerman, University of Michigan.
- 2008 Spring Jacob Goldhaber travel grant (University of Maryland Graduate School)
- 2008 Washington Biologists' Field Club research grant: "Putting stream salamanders in context: linking stream salamander behavior, bioturbation, and the loss of small streams." Collaborator: EHC Grant, University of Maryland
- 2007 Summer North American Benthological Society award for best oral presentation emphasizing methodology, Columbia, South Carolina
- 2007 Summer Entomology Student Organization travel grant (University of Maryland)
- 2006 Fall University of Maryland College of Chemical and Life Science Bioscience Research & Technology Review Day- Best poster in biodiversity and environmental sciences
- 2006 Summer College of Life Sciences graduate travel grant (University of Maryland)
- 2005 – 2008 Research assistant for National Science Foundation grant: "Collaborative research: Seston contributions to metabolism across longitudinal ecosystems (SCALE) - Dynamics of organic particles in river networks." Stroud Water Research Center, Avondale, Pennsylvania.
- 2005 Spring North American Benthological Society President's award

Teaching Experience

- 2011 Spring General Biology II (BIO202); Freshwater Biology (BIO493/593). SUNY New Paltz, NY.
- 2010 Fall Biological Statistics (BIO493); Biology Seminar (BIO490). SUNY New Paltz, NY.
- 2010 Spring Field Biology (BIO302); Biology Seminar (BIO490). SUNY New Paltz, NY.

2010 January	“Restoration ecology” discussion. Fundamentals of ecosystem ecology short course, Cary Institute of Ecosystem Studies, Millbrook, NY.
2009 November	“Aquatic effects from air and water non-point source pollution: Lake Sunapee, NH” lecture. Geology 370: Environmental Geochemical Science, SUNY New Paltz, New Paltz, NY
2009 January	“Heterogeneity and ecosystem function” lecture. Fundamentals of ecosystem ecology short course, Cary Institute of Ecosystem Studies, Millbrook, NY.
2008 November	Bard College, Science of the Natural and Built Environment - guest lecturer during visit to Cary Institute of Ecosystem Studies
2008 November	SUNY New Paltz, Biology 340 - Ecology (guest lecturer/lab coordinator for aquatic ecology lab)
2005 – 2008 Summers	Stroud Water Research Center, Mentor for Research Experience for Undergraduate (REU) interns: research advising and organization of journal club
2006 Spring	University of Maryland, Biological Sciences 103 - The World of Biology (teaching assistant)
2005 August	University of Maryland, Marine, Estuarine and Environmental Sciences 698S - Ecological and geomorphic principles of stream restoration (guest lecturer)
2002 Spring	Cornell University, Operations Research and Industrial Engineering 310 - Industrial systems analysis (teaching assistant)

Presentations

2011	<i>Richardson, DC</i> , Hoellein TJ, Gibson C, Arscott DB, Root S. <i>Didymosphenia geminata</i> (didymo) in West of Hudson watersheds – with a focus on Esopus Creek. Invited talk, Stroud Water Research Center, Avondale, PA.
2011	Weathers, KC, Ewing, HA, Baer, NA, Chen, CY, Roebuck, HJ, Maki, CE, <i>Richardson, DC</i> , Lindsey, AM, Wilson, A, Chikering, J, Fiorillo, AU, Cottingham, KL. From Air to Water: Hg deposition and biogeochemistry, Sunapee, NH watersheds. National Atmospheric Deposition Program annual meeting oral presentation, Providence, Rhode Island.
2011	Weathers, KC, <i>Richardson, DC</i> , Benson, BJ, Chiu, K, Zimmerman, A, and Fichter, J. Enhancing human passion and curiosity about lake ecosystem function: A case study of sensors, citizens, and cyberinfrastructure from Lake Sunapee, NH. Ecological Society of America conference oral presentation, Austin, Texas.
2011	Bruesewitz, DB, <i>Richardson, DC</i> , Rose, KC, Solomon, CT, and Van de Bogert, MC. Drivers of pelagic metabolism: evidence from high frequency free-water measurements in lakes around the globe. Ecological Society of America conference oral presentation, Austin, Texas.
2011	DiFalco, S; <i>Richardson, DC</i> . Spatial and temporal variability of water quality in an anthropogenically affected river, Wallkill River and its tributary, New Paltz, NY. North American Benthological Society conference poster presentation, Providence, RI.

- 2011 *Richardson, DC*; Achterberg, LA; Redfield, MR; Root, S; Arscott, DB; Gibson, C; Hoellein, TJ. Rock snot in a sick river: *Didymosphenia geminata* (Didymo) blooms and water chemistry in Esopus Creek, Catskill Mountains, NY. What causes didymo blooms in Esopus Creek? North American Benthological Society conference poster presentation, Providence, RI.
- 2011 Achterberg, LA; Redfield, MR; *Richardson, DC*; Hoellein, TJ; Root, S; Arscott, DB; Gibson, C. Macro and micronutrient influences on *Didymosphenia geminata* (didymo) growth in the newly invaded stream, Esopus Creek, NY. North American Benthological Society conference poster presentation, Providence, RI.
- 2010 *Richardson, DC*; Achterberg, LA; Redfield, M; Root, S, Arscott, DA; Gibson, C; Hollein, TJ. Rock snot in a sick river: What causes didymo blooms in Esopus Creek? Catskill Environmental Monitoring and Research Conference poster, Highmount, New York.
- 2010 Root, S; *Richardson, DC*; and O'Reilly, C. An Assessment of Three Common Decontamination Products on the Invasive Algae *Didymosphenia geminata*. Catskill Environmental Monitoring and Research Conference invited poster, Highmount, New York.
- 2010 Root, S, *Richardson, DC* and O'Reilly, C. Didymo Update: Rock Snot is Growing in New York Rivers. Cornell Cooperative Extension (Invasive Species) Invited Talk, Cornell University, Ithaca, New York.
- 2010 *Richardson, DC*, Ewing, HA, Weathers, KC, and Baer, NA. Fluxes of dissolved and particulate phosphorus into a New England oligotrophic lake, Lake Sunapee, with increasing cyanobacterial blooms. North American Benthological Society and American Society of Limnology and Oceanography joint conference oral presentation, Santa Fe, New Mexico.
- 2010 Baer, NA, *Richardson, DC*, Weathers, KC, Ewing, HA, and Roebuck, HJ. Seasonal trends, watershed drivers, and bioavailability of dissolved organic carbon (DOC) in tributaries of Lake Sunapee, NH. North American Benthological Society and American Society of Limnology and Oceanography joint conference poster presentation, Santa Fe, New Mexico
- 2010 Solomon, CT, Bruesewitz, DB, *Richardson, DC*, Rose, KC, and Van de Bogert, MC. Drivers of pelagic community respiration: evidence from high frequency free-water measurements in lakes around the globe. North American Benthological Society and American Society of Limnology and Oceanography joint conference oral presentation, Santa Fe, New Mexico.
- 2010 *Richardson, DC*. How lakes breathe. Lake Sunapee Protective Association Board Meeting, Sunapee, NH.
- 2009 *Richardson, DC* and Hoellein, TH. Rock snot and river congestion: What are the causes and consequences of blooms of *Didymosphenia geminata*? Cornell Cooperative Extension (Invasive Species) Invited Talk, Cornell University, Ithaca, New York.
- 2009 *Richardson, DC*, Benson, BJ, Chiu, K, Fichter, J, Weathers, KC, and Zimmerman, A. Engaging citizen-scientists with real-time lake data: The CI-Team web portal and you. Cyberinfrastructure Team workshop, Trout Lake Station, Boulder Junction, Wisconsin.

- 2009 *Richardson, DC*, Benson, BJ, Chiu, K, Fichter, J, Weathers, KC, and Zimmerman, A. Developing a web interface to engage citizen scientists with lake sensor data. Global Lake Ecological Observatory Network (GLEON) meeting, Boulder Junction, Wisconsin.
- 2009 *Richardson, DC*. Lake Sunapee in real time. Lake Sunapee Protective Association summer series, Invited Talk, Sunapee, NH.
- 2009 *Richardson, DC* and Grant, EHC. Contributions of crayfish and salamander activity to increases in nighttime seston concentrations in a stream ecosystem. North American Benthological Society Conference Oral Presentation, Grand Rapids, MI.
- 2009 *Richardson, DC*, Weathers, KC, and Fichter, J. Communicating science with citizens and managers: a case example from Lake Sunapee, NH. Cary Conference XIII: Effective Communication of Science in Environmental Controversies. Poster presentation, Millbrook, NY.
- 2008 Kaplan, LA, *Richardson DC*, Newbold, JD, and Aufdenkampe, AK. Diel Patterns of Dissolved and Particulate Organic Matter Transport in a Pennsylvania Piedmont Stream. Diurnal Cycling of Chemical Constituents in Surface Water and Related Scientific Regulatory Consideration, NJDEP, USGS, and Rutgers WRPI, Trenton, NJ.
- 2008 *Richardson, DC*. Stream seston: Transport, sources, and Darwin. University of Maryland, Department of Entomology, Invited Oral Seminar, College Park, MD.
- 2008 *Richardson, DC*. Biological regulation of stream particle transport. Cary Institute of Ecosystem Studies, Invited Oral Presentation, Millbrook, NY.
- 2008 *Richardson, DC*, Aufdenkampe, AK, Newbold, JD, and Kaplan, LA. Modeling sources of seston, particulate organic carbon and particulate nitrogen within a stream ecosystem. North American Benthological Society Conference Oral Presentation, Salt Lake City, UT.
- 2007 Grant, EHC and *Richardson, DC*. Stream drying and the salamander larvae: where do they go? Marine Estuarine and Environmental Sciences Colloquium Poster Presentation, University of Maryland, College Park, MD.
- 2007 *Richardson, DC*, Newbold, JD, Aufdenkampe, AK, Taylor, PG and Kaplan, LA. A method for measuring bacterial mineralization rates of suspended particulate organic carbon in stream ecosystems. North American Benthological Society Conference Oral Presentation, Columbia, SC.
- 2006 *Richardson, DC*, Kaplan, LA and Newbold, JD. Baseflow dynamics and sources of seston in a stream ecosystem: recurring nighttime peaks. Ecological Society of America Conference Poster, Memphis, TN.
- 2005 Menninger, HL, Palmer, MA, Craig, LS, Hassett, BA, *Richardson, DC*, Smith, RF. Terrestrial-aquatic linkage: The effects of periodical cicadas on stream ecosystem function. Ecological Society of America Conference Oral Presentation, Montreal, Canada.
- 2004 *Richardson, DC*; Kaplan, LA and Palmer, MA. Point source contributions of suspended organic matter to an agricultural watershed with intact riparian forests. Marine Estuarine and Environmental Sciences Colloquium Poster Presentation, Horn Point Laboratory, Cambridge, MD.
- 2004 Ewing, H; Suarez, E; St. John, M; *Richardson, DC*; Peierls, B; Frost, C; Euskirchen, E;

Brookshire, J; Lindberg, S; Weathers, K. Mercury deposition and emission to and from heterogeneous landscapes: Exploring simple models. Ecological Society of America Conference Poster, Portland, OR.

- 2004 Ewing, H; Weathers, K; Brookshire, J; Euskirchen, E; Frost, C; Peierls, B; *Richardson, DC*; St. John, M; Suarez, E; Groffman, P. Learning to model and learning to collaborate: An experiment in graduate education. Ecological Society of America Conference Poster, Portland, OR.
- 2004 Swan, CM; *Richardson, DC*; Palmer, MA. A simulation study of detritivore foraging on speciose leaf litter: implications for the diversity-function relationship in stream ecosystems. Ecological Society of America Conference Oral Presentation, Portland, OR.

Committees and Service

- 2010 Session moderator, Catskill Environmental Monitoring and Research Conference invited poster, Highmount, New York.
- 2010 Special session organizer and moderator, North American Benthological Society and American Society of Limnology and Oceanography joint conference, Santa Fe, New Mexico
- 2010 – 2011 SUNY New Paltz Biology Department Personnel Committee
- 2010 Science commentator, “*GREEN: art with the earth in mind*” exhibit, Annmarie Garden Sculpture Park & Arts Center, Solomons, Maryland
- 2010 Ulster Counselors Career Conference “Science” panelist, March 11
- 2009 – 2010 Young Environmental Scientists (YES) conference evaluator
- 2009 – present Lake Sunapee Protective Association Science Advisory Committee
- 2007 – 2008 Green Science at Stroud (GSAS) committee member, Stroud Water Research Center, Avondale, PA.
- 2007 – 2008 Marine, Estuarine and Environmental Sciences Graduate Student Organization representative to the University of Maryland Graduate Student Government
- 2005 – 2006 Department of Entomology website committee, University of Maryland, College Park, Maryland
- 2005 – 2008 Palmer lab website webmaster

Professional Affiliations

- 2002 – present North American Benthological Society; Ecological Society of America
- 2008 – present Global Lake Ecological Observatory Network (GLEON)

Reviewing Activity

- Biogeochemistry (2010)
- National Science Foundation, Ecosystem Science Cluster (2009, 2010)
- Methods in Stream Ecology, 2nd edition, 2006, Hauer, R. and Lamberti, G.A.
- Journal of Geophysical Research (with Newbold, J.D.)
- Limnology and Oceanography (with Palmer, M.A.)

Research mentoring

2011 Summer	<i>Nathaniel Rigolino</i> (SUNY New Paltz) – Student Undergraduate Research Experience (SURE) at SUNY New Paltz <i>Amalia Handler</i> (Franklin and Marshall College) – Research Experience for Undergraduates at SUNY New Paltz <i>Isabella Oleksy</i> (University of New Hampshire) – Research Experience for Undergraduates at SUNY New Paltz
2010 Summer	<i>Laura Achterberg</i> (University of Nebraska, Lincoln) - Research Experience for Undergraduates at SUNY New Paltz <i>Molly Redfield</i> (Mount Holyoke College) - Research Experience for Undergraduates at SUNY New Paltz <i>Samantha Root</i> (Bard College) – Didymo project summer intern at SUNY New Paltz <i>Stephen DiFalco</i> (SUNY New Paltz) – Student Undergraduate Research Experience (SURE) at SUNY New Paltz
2009 Summer	<i>Teriko MacConnell</i> (Newport Elementary School, New Hampshire) – Research Experience for Teachers at Cary Institute of Ecosystem Studies <i>Nathan Camp</i> (Kearsarge Regional Middle School, New Hampshire) – Research Experience for Teachers at Cary Institute of Ecosystem Studies
2008 Summer	<i>Laura Fox</i> (Indiana University-Purdue University Indianapolis) - Research assistant at Stroud Water Research Center <i>Hanh Nguyen</i> (Dartmouth College) - Research Experience for Undergraduates at Stroud Water Research Center <i>Laura Regester</i> (Trinity University, DC) - Research Experience for Undergraduates at Stroud Water Research Center
2007 Summer	<i>Jaclyn McIlwain</i> (University of Delaware) - Research Experience for Undergraduates at Stroud Water Research Center <i>Maddie Winters</i> (Guilford College) - Research assistant at Stroud Water Research Center