GABOURY BENOIT

<u>Address</u>	<i>Office</i> : Yale School of the Environment Kroon Hall 195 Prospect Street New Hayen, CT, 06511	<i>Home</i> : 206 Livin New Haven, CT ① (203) 401-155	gston Street 06511 6
	 ☎ (203) 432-5139 □: http://environment.yale.edu/ 	: gabouryb@gr benoit-lab	nail.com
Education			
1988	Ph.D. , Chemical Oceanography Massachusetts Institute of Technology, Woods Hole Oceanographic Institution,		Cambridge, MA/ Woods Hole, MA
1983- 1984	Predoctoral fellowship Université de Paris VI, Laboratoire de Géoch	imie et Métallogénie	e, Paris
1985	M.S., Civil Engineering - Water Resources Massachusetts Institute of Technology,		Cambridge, MA
1978	B.S. , Geochemistry Yale University, Graduated <i>cum laude</i> , with distinction in geo	logy.	New Haven, CT
<u>Experience</u> Nov 06- June 09	Associate Dean for Research School of Forestry and Environmental Studies,	Yale University	
Aug 1991- present	Professor School of Forestry and Environmental Studies, Professor, Chemical Engineering (2000 - presen	Yale University t)	New Haven, CT
Sep 1999- Jun 2021	Director, Hixon Center for Urban Ecology		
1993 - 2009	Founder and Director, Center for Coastal and W	atershed Systems	
Feb 96 - Jan 98	National Academy of Sciences/ National Resear Committee on Watershed Management	ch Council,	
May 1990- July 1991	Assistant Professor Department of Marine Sciences, Texas A & M Department of Oceanography, Texas A&M Un	University iversity	Galveston, TX College Station, TX
Feb 1989- April 1990	Visiting Assistant Professor Department of Marine Sciences, Texas A & M	University	Galveston, TX
Nov 1987- Jan 1989	Visiting Assistant Professor Dept. of Environmental Engineering, Michigan	State University	E. Lansing, MI
May 1978- Sep 1981	Laboratory Manager. EcoScience Laboratory (independent consulting	g lab)	Norwich, CT

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<u>Teaching</u> Experience	Aquatic Chemistry, Environmental Chemistry, Watershed Science, Sustainable Development, Brownfield Redevelopment, Graduate Research Methods, Water Resources capstone courses at Yale's Environment School.
	Taught Instrumental Analysis, Physical Geology, Marine Chemistry, Aquatic Chemistry courses at Texas A & M University, Dept. of Marine, Sciences and Michigan State University, Dept. of Civil and Environmental Engineering.
<u>Professional</u> <u>Societies</u>	American Geophysical Union, American Society of Limnology and Oceanography, Estuarine Research Federation, American Society of Civil Engineers, Amer. Chemical Society, Geochemical Society, American Water Resources Association.
<u>Research</u> Interests	Estuarine chemistry, trace metal chemistry, nonpoint source pollution, microplastics, anthropogenic litter, deicing salts, green infrastructure, metal speciation, sustainable land development, watershed management, environmental radiochemistry, paleolimnology
	Much of my recent research focuses on how land development in urbanizing coastal areas affects water quality and hydrology. I am especially interested in (1) using continuous measurements to couple hydrology and chemistry to understand the special role of processes occurring at the land- sea interface, and (2) evaluating the effectiveness of green infrastructure.
<u>Peer</u> <u>Review</u> Service	Limnol. Oceanogr., Geochim. Cosmochim. Acta, Environ. Sci. Technol., Estuaries, Aquatic Geochem., J. Great L. Res., Sci. Total Environ., Mar. Environ. Res., J. Industrial Ecology, J. Environ. Sci. & Health, Toxic Hazard. Subst. Contr., MIT Press, NSF, EPA, DOE, Hudson R. Foundation, NOAA Sea Grant, Nat. Undersea Res. Center., US Dept. Agriculture, Connecticut DEEP, USGS.
<u>Recent</u> <u>Invited</u> <u>Lectures</u>	Tongji Univ., Stony Brook University, Gordon Research Conference, Amer. Chem. Soc., Geological Society of, Canada Institute for Ecosystem Studies, Argentum Conference, Univ. of Massachusetts, M.I.T., NOAA Sea Grant, Univ. of Connecticut, Wesleyan Univ., Univ. of Rhode Island.

PEER-REVIEWED PUBLICATIONS

To give a better sense of my research interests, my peer-reviewed publications, including 2 books, cover the following topics.

- *Estuarine chemistry*: 1, 6, 9, 10, 11, 12, 13, 21, 24, 25, 29, 34, 35, 36, 37, 51, 53, 62, 63
- *Metals, including their behavior, sources, and speciation*: 10, 11, 12, 13, 14, 15, 16, 18, 19, 22, 25, 26, 27, 28, 29, 30, 31, 34, 35, 36, 37, 41, 42, 44, 46, 48, 49, 50, 51, 52, 66, 67, 70, 76, 77, 78

- Land use, watershed management, Green Infrastructure, and its impact on aquatic chemistry: 23, 33, 47, 49, 53, 54, 55, 56, 57, 58, 59, 60, 62, 63, 64, 65, 66, 67, 68, 69, 71, 72, 73, 75, 71
- *Radionuclides, including their behavior and dating methods*: 2, 3, 4, 5, 7, 8, 9, 24, 25, 32, 61, 63, 67, 68, 70, 77
- Analytical methods: 5, 14, 17, 20, 22, 28, 32, 31, 38, 39, 40, 43, 45

Published Books and Reports

- 79. Benoit G, (2022) Plastics and Microplastics: Threats to the Environment and Health 162 pp. EHHI.
- 49. Balmori D. and G. Benoit (2007) Land and Natural Development (LAND) Code: Guidelines for Sustainable Land Development. John Wiley and Sons. 256 pp.

Book was translated into Mandarin and published in P.R. China, 2021.

33. Graf W., C. Aichinger, B. Anderson, G. Benoit, P. Bisson, M. Garcia, J. Heaney, C. Johnston, L. Lane, C. Olsen, M. Pfeffer, L. Shabman, J. Stanford and S. Trimble (1998) New Strategies for America's Watersheds: Integrating Ecological, Economic, and Social Factors, National Academy Press, Washington D.C., 311 pp.

Research Articles (nearing submission)

- 83. Morrison A. and G. Benoit (for submission to *Environ. Sci. Technol.*) Microplastics from urban storm drains.
- 82. Benoit G. (for submission to *Crit.Reviews Environ. Sci. Technol.*) Comprehensive review of microplastics in the environment.
- 80. Benoit G., J. Peterman, R. Rioux and S. Brady (for submission to *Water Air Soil Pollut.*) Deicing salt transport through watersheds of 5 nested spatial scales during Hurricane Ida.
- 77. Xuan Z. and G. Benoit (for submission to *Limnol. Oceanogr.*) Beryllium-7 investigation of sediment and cobalt dynamics in a Connecticut estuary with self-regulating tide gates.
- 65. Wang. P and G. Benoit (for submission to *Ecological Modeling*) Modeling the comprehensive phosphorus cycle in a managed eutrophic lake.
- 58. Wang. P and G. Benoit (for submission to *Environmental Management*) Total mass balance of phosphorus cycling in a eutrophic lake: Management options and limitations.

Research Articles (Submitted)

- 81. Zhang S., J. Yan, Y. Zou, F. Zhang, X. and G. Benoit (submitted to *Chemosphere*) Growth, ROS accumulation sites and photosynthesis inhibition mechanism of *Chlorella vulgaris* by triclosan.
- 76. Xuan Z. and G. Benoit (submitted to *Limnol. Oceanogr.*) Cobalt speciation and cycling in Linsley Pond, Connecticut, USA.

- 66. Semrod K. and G. Benoit (2021) Stormwater amelioration by bioretention: Quantification with a before-after-control-impact experiment. Submitted to *J. Environ. Management*
- 75. Dahms K. and G. Benoit (2021) Quantifying bioswale performance through field scale research: A case study from New Haven, CT. Submitted to *J. Environ. Mgmt*.

Research Articles (Published, In Press, or Accepted)

- 71. Ganz, T. R., J. McMurray, K. Covey, C. Bettigole, and G. Benoit (2021) Chemical effects of snowmelt on an Alpine lake in the Wind River Range, WY. *Water Air and Soil Pollution* 232.
- 78. Li, J., J. X. Li, H. Wei, X. D. Yang, G. Benoit, and X. K. Jiao (2021) Alkaline-thermal activated electrolytic manganese residue-based geopolymers for efficient immobilization of heavy metals. *Constr. Build. Mater.* 298
- 74. Zhang, K.X., M.D. Yu, P.Y. Xu, S.H. Zhang, and G. Benoit (2020) Physiological and morphological response of *Aphanizomenon flos-aquae* to watermelon (*Citrullus lanatus*) peel aqueous extract. Aquatic Toxicol. **225**.
- 63. Benoit G., S. Bisson, and M. Hirschbeck (2020) Beryllium-7 elucidates sediment dynamics of the Branford River estuary, Connecticut, USA. *Coasts and Estuaries*. DOI: 10.1007/s12237-020-00712-5
- 72. Chen, H., J.F. Ye, Y.F. Zhou, Z.N. Wang, Q.L. Jia, Y.H. Nie, L. Li, H. Liu and G. Benoit (2020) Variations in CH₄ and CO₂ productions and emissions driven by pollution sources in municipal sewers: An assessment of the role of DOM components and microbiota. Environ. Pollut. 263A.
- 73. Zhang S.H. and Benoit G. (2019) Comparative physiological tolerance of unicellular and colonial *Microcystis aeruginosa* to extract from *Acorus calamus* rhizome. *Aquatic Toxicology* **215**.
- 59. Demars S. and G. Benoit (2019) Leaching of ANC and chromium from concrete: Effect of aging simulated by sample carbonation. *Water Air Soil Pollut.* **230** (7), 159.
- 67. Benoit G. (2018) Mercury in dated sediment cores from coastal ponds of St Thomas, USVI. *Mar. Pollut. Bull.* **126**, 535-539.
- 64. Ye J., Z. Xu, H. Chen, L. Wang and G. Benoit (2018) Reduction of clog matter in constructed wetlands by metabolism of *Eisenia foetida*: process and modeling. *Environmental Pollut.* 238, 803-811.
- 62. Benoit G. and P. Wang (2017) Laboratory investigation of mineralization of refractory nitrogen from sewage treatment plants: Implications for Long Island Sound hypoxia. *Environmental Management* **60**(6), 1171-1176.
- 61. Feingold B.J. and G. Benoit (2018) A novel method to infer historical DDT use on Cape Cod, Massachusetts (USA), based on ΣDDT degradation and ²¹⁰Pb dating in lake sediment cores. *J* of Paleolimnology **60** (4), 461-472.

- 60. Benoit G. and S. Demars (2018) Evaluation of organic and inorganic compounds extractable by multiple methods from commercially available crumb rubber mulch. *Water, Air, and Soil Pollution* **229** (3).
- 57. Adera S., G. Benoit, E. Twohig, K. Jagannathan, and A. Drizo (2018) Improving performance of treatment wetlands: Evaluation of supplemental aeration, varying flow direction, and phosphorus removing filters. *Water, Air, Soil Pollut.* **229** (3).
- 56. Wang. P and G. Benoit (2017) Modeling the biogeochemical role of photosynthetic sulfur bacteria in phosphorus cycling in a managed eutrophic lake. *Ecological Modeling*. **361**, 66-73.
- 55. Liu H., G. Benoit, T. Liu, Y. Liu and H Guo (2015) An integrated system dynamics model developed for managing lake water quality at the watershed scale. J. Environ. Management 155, 11 – 23.
- 54. Schiff R., G. Benoit and J. MacBroom (2010) Evaluating stream restoration: a case study from two partially developed 4th order Connecticut, U.S.A streams and evaluation monitoring strategies. *River Research and Applications* **27**(4), 431-460.
- 53. Xu X.G., H.F. Peng, Q.Z. Xu, H.Y. Xiao and G. Benoit (2009) Land changes and conflicts coordination in coastal urbanization: A case study of the Shandong Peninsula in China. *Coastal Management* **37**, 54-69.
- 52. Clark H.F. and G. Benoit (2009) Legacy sources of mercury in an urbanized watershed. *Environ. Chem.* **6**, 235-244.
- 51. Clark H.F. and G. Benoit (2009) Current and historic mercury deposition to New Haven Harbor (CT, USA): Implications for industrial coastal environments. *Sci. Total Environ.* **407**, 4472–4479.
- 50. Twining B.S., S.E. Mylon, and G. Benoit (2007) Potential role of copper availability in nitrous oxide accumulation in a temperate lake. *Limnol. Oceanogr.* **52**, 1354-1366.
- 48. Hu H., Mylon S., and G. Benoit (2007) Volatile organic sulfur compounds in a stratified lake. *Chemosphere* **67**, 911-919.
- 47. Schiff R.K. and G. Benoit (2007) Effects of impervious cover at multiple spatial scales on coastal watershed streams. *J. Amer. Water Resour. Assoc.* **43**, 712-730.
- 46. Hu H., Mylon S., and G. Benoit (2006) Distribution of the thiols glutathione and 3-mercaptopropionic acid in Connecticut lakes. *Limnol. Oceanogr.* **51**, 2763-2774.
- 45. K. J. O'Keefe, N. M. Morales, H. Ernstberger, G. Benoit, and P. E. Turner (2006) Laboratory-dependent bacterial ecology: A cautionary tale. *Appl. Environ. Microbiol.* **72**, 3032-3035.
- 44. Morrison M. and G. Benoit (2005) Temporal variability in physical speciation of metals during a winter rain-on-snow event. *J. Environ. Qual.* **34**, 1610-1619.
- 43. Morrison, M. A. and G. Benoit (2004) Investigation of conventional membrane and tangential flow ultrafiltration artifacts and their application to the characterization of freshwater colloids. *Environ. Sci. Technol.* **38**: 6817-6823

- 42. Mylon, S.E., B.S. Twining, N.S. Fisher and G. Benoit (2003) Relating the speciation of Cd, Cu, and Pb in two Connecticut rivers with their uptake in algae. *Environ. Sci. Technol.* **37**, 1261-1267
- 41. Kramer J.R., G. Benoit et al. (2002) Environmental chemistry of silver. *In*: <u>Silver in the</u> <u>Environment: Transport, Fate, and Effects</u>. (A.W. Andren & T.W. Bober, *eds.*) SETAC Press.
- 40. Mylon S., H. Hu and G. Benoit (2001) Unsuitability of Cr(II) reduction for the measurement of sulfides in oxic water samples. *Anal. Chem.* **74**, 661-663.
- 39. Mylon S. and G. Benoit (2001) Subnanomolar detection of acid labile sulfides by the classical methylene blue method coupled to HPLC. *Environ. Sci. Technol.* **35**, 4544-4548.
- 38. Morrison M. and G. Benoit (2001) Filtration artifacts caused by overloading membrane filters. *Environ. Sci. Technol.* **35**, 3774-3779.
- 37. Rozan T.F. and G. Benoit (2001) Mass balance of heavy metal in New Haven Harbor, Connecticut: The predominance of nonpoint sources. *Limnol. Oceanogr.* **46**, 2032-2049.
- 36. Zelewski L.M., G. Benoit and D.E. Armstrong (2001) Mercury dynamics in Tivoli South Bay, a freshwater tidal mudflat wetland in the Hudson River. *Biogeochemistry* **52**, 93-112.
- 35. Rozan T.F. and K.S. Hunter (2001) Effects of discharge on silver loading and transport in the Quinnipiac River, Connecticut. *Sci. Total Environ.* **279**, 195-205.
- 34. Lee X., G. Benoit and X. Hu (2000) Total gaseous mercury concentration and flux over a coastal salt marsh in Connecticut. *Atmos. Environ.* **34**, 4205-4213.
- 32. Benoit G. and T.F. Rozan (2001) ²¹⁰Pb and ¹³⁷Cs dating methods in lakes: A retrospective study. *Journal of Paleolimnology* **25**, 455-465.
- 31. Rozan T.F., G. Benoit, H. Nash, and Y.-P. Chin (1999) Intercomparison of DPASV and ISE for evaluation of Cu complexation by natural DOM. *Environ. Sci. Technol.* **33**, 1766-1770.
- 30. Rozan T.F. and G. Benoit (1999) Geochemical factors controlling free Cu ion concentrations in rivers. *Geochim. Cosmochim. Acta* **63**, 3311-3319.
- 29. Rozan T.F. and G. Benoit (1999) Heavy metal removal efficiencies in a river-marsh system estimated from patterns of accumulation in sediments. *Mar. Environ. Res.* **48**, 335-351.
- 28. Rozan T.F., G. Benoit and G. Luther, III (1999) Measuring metal sulfides complexes in oxic river waters with square wave voltammetry. *Environ. Sci. Technol.* **33**, 3021-3026.
- 27. Benoit G. and T.F. Rozan (1999) The influence of size distribution on the particle concentration effect and trace metal partitioning in rivers. *Geochim. Cosmochim. Acta* 63, 113-127.
- 26. Benoit G., E.X. Wang, W.C. Nieder, M. Levandowsky, and V. Breslin (1999) Sources and history of heavy metal contamination and sediment deposition in Tivoli South Bay, Hudson River, NY. *Estuaries* **22**, 167-178.
- 25. Benoit G., T.F. Rozan, P. Patton and C. Arnold (1999) Trace metals and radionuclides reveal sediment sources and accumulation rate in Jordan Cove, Connecticut. *Estuaries* **22**, 65-80.

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- 24. Anisfeld S.C., M.J. Tobin and G. Benoit (1999) Sedimentation rates in flow-restricted and restored salt marshes in Long Island Sound. *Estuaries* **22**, 231-244.
- 23. Bormann B.T., D.S. Wang, F.H. Bormann, G. Benoit, R. April, and M.C. Snyder (1998) Rapid, plant-induced weathering in an aggrading experimental ecosystem. *Biogeochemistry* **43**, 129-155.
- 22. Benoit G., K.S. Hunter and T.F. Rozan (1997) Sources of trace metal contamination artifacts during collection, handling, and analysis of freshwaters. *Anal. Chem.* **69**, 1006-1011.
- 21. Anisfeld S.C. and G. Benoit (1997) Impacts of flow restrictions on salt marshes: An incidence of acidification. *Environ. Sci. Technol.* **31**, 1650-1657.
- 20. Rozan T.F., G. Benoit and R.H. April (1997) A selective dissolution analysis optimized for measurement of weathering products in a soil. *Soil Sci. Soc. Am. J.* **61**, 941-958.
- 19. Wang E.X. and G. Benoit (1997) Fate and transport of contaminant lead in spodosols: A simple box model analysis. *Water Air Soil Pollut.* **95**, 381-397.
- 18. Wang E.X. and G. Benoit (1996) Mechanisms controlling the mobility of contaminant lead in *spodosols*: Speciation studies of soil solutions. *Environ. Sci. Technol.* **30**, 2211-2219.
- 17. Benoit G. and H.F. Hemond (1996) Vertical eddy diffusion calculated by the flux gradient method: Significance of sediment-water heat exchange. *Limnol. Oceanogr.* **41**, 157-168.
- 16. Benoit G. (1995) Evidence of the particle concentration effect for lead and other metals in fresh waters based on ultraclean technique analyses. *Geochim. Cosmochim. Acta.* **59**, 2677-2687.
- Wang E.X., F.H. Bormann and G. Benoit (1995) Evidence of complete retention of atmospheric lead in the soils of northern hardwood forest ecosystems. *Environ. Sci. Technol.* 29, 735-739.
- 14. Benoit G. (1994) Clean technique measurement of Pb, Ag, and Cd in fresh water: A redefinition of metal pollution. *Environ. Sci. Technol.* **28**, 1987-1991.
- 13. Rozan T.F., K. Hunter and G. Benoit (1994) Industrialization as recorded in floodplain deposits of the Quinnipiac River, Connecticut. *Mar. Pollut. Bull.* 28, 564-569.
- 12. Benoit G., J. Schwantes, G.S. Jacinto and M.R. Goud-Collins (1994) Preliminary study of the redistribution and transformation of HgS from cinnabar mine tailings deposited in Honda Bay, Palawan, the Philippines. *Mar. Pollut. Bull.* **28**, 754-759.
- 11. Benoit G., S.D. Oktay-Marshall, A. Cantu, Ii, E.M. Hood, C.H. Coleman, M.O. Corapcioglu and P.H. Santschi (1994) Partitioning of Cu, Pb, Ag, Zn, Fe, Al, and Mn between filter-retained particles, colloids, and solution in six Texas estuaries. *Mar. Chem.* **45**, 307-336.
- 10. Morse J.W., B.J. Presley, R.J. Taylor, G. Benoit and P.H. Santschi (1993) Trace metals in Galveston Bay: Water, sediments, and biota. *Mar. Environ. Res.* **36**, 1-37.
- Baskaran M., P.H. Santschi, G. Benoit and B. Honeyman (1992) Scavenging of thorium isotopes by colloids in seawater of the Gulf of Mexico. *Geochim. Cosmochim. Acta* 56, 3375-3388.

- 8. Benoit G. and H.F. Hemond (1991) Evidence for diffusive redistribution of ²¹⁰Pb in lake sediments. *Geochim. Cosmochim. Acta.* **55**, 1963-1975.
- 7. Benoit G. and H.F. Hemond (1990) ²¹⁰Po and ²¹⁰Pb remobilization from lake sediments in relation to iron and manganese cycling. *Environ. Sci. Technol.* **24**, 1224-1234.
- 6. Santschi P.H., G. Benoit, P. Hoehener, and M. Buchholtz-Ten Brink (1990) Chemical processes at the sediment-water interface. *Mar. Chem.* **30**, 269-316.
- 5. Benoit G. and H.F. Hemond (1988) Improved methods for the measurement of ²¹⁰Po, ²¹⁰Pb, and ²²⁶Ra, *Limnol. Oceanogr.* **33**, 1618-1622.
- Benoit G. and H.F. Hemond (1988) On Dilution of ²¹⁰Pb by organic sedimentation in lakes of different trophic states, and application to studies of sediment-water interactions, *Limnol. Oceanogr.* 33, 299-304.
- 3. Benoit G. and H.F. Hemond (1987) Biogeochemical mass balance of ²¹⁰Po and ²¹⁰Pb in a New England Lake, *Geochim. Cosmochim. Acta.* **51**, 1445-1456.
- 2. Buesseler K.O., G. Benoit, and E.R. Sholkovitz (1985) A pore water study of plutonium in a seasonally anoxic lake, *J. Environ. Radioactivity*, **2**, 283-292.
- 1. Benoit G., K.K. Turekian, and L.K. Benninger (1979) Radiocarbon dating of a core from Long Island Sound, *Estuarine, Coastal, and Shelf Sci.* **9**, 171 183.

Manuscripts in preparation

- Benoit G. (202#) Mercury in fish from St Thomas, USVI. Target journal: *Marine Pollution Bulletin*.
- Benoit G. and D. Nemeth (202#) Export of sediment caused by land development in a Virgin Island watershed: Assessment via continuous stream monitoring. Target journal: *Earth Surface Processes and Landforms*
- Benoit G. (202#) Land development induced watershed erosion as revealed by ¹³⁷Cs inventories in soils and sediment capture in coastal ponds of St Thomas, USVI. Target journal: *Earth Surface Processes and Landforms*

CURRENT RESEARCH

Urban watersheds

- Assessment of hydrologic and water quality benefits of bioswales constructed to treat runoff from a downtown area served by combined sewers. [National Fish and Wildlife Federation Long Island Sound Futures Fund]
- Design and evaluation of interdisciplinary restoration of an abandoned urban open space site: Yale Experimental Watershed.
- Deicing salt behavior and biological impacts [CT IWR-USGS, Quinnipiac R Fund]
- Litter capture and characterization [LIS Futures Fund NFWF]
- Microplastics in storm runoff [Quinnipiac River Fund]

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PROPOSALS SUBMITTED OR IN PREPARATION

- NSF: Deicing salt mass balances in SWaRDs (Small Watersheds with Residential Development).
- Green infrastructure effectiveness in a suburban setting [EPA 319 program]

ADMINISTRATIVE EXPERIENCE

- Founder in 1993 of Yale's Center for Coastal and Watershed Systems, and Director through 2009
- Faculty Director of Yale's Hixon Center for Urban Ecology 1999 2021
- Associate Dean for Research for Yale's School of Forestry and Environmental Studies from 2006 2009
- Director of Graduate Studies from 2006 2009 for Yale's School of Forestry and Environmental Studies, overseeing a doctoral program with approximately 70 students

GRANTSMANSHIP

Approximately 6 million dollars in successful grants obtained from NSF, EPA, USGS, Sea Grant, IWR, NERRS, Dreyfus Foundation, USFS, and many private foundations.

Synergistic Activities

March 2007	Published book detailing guidelines for developing land with minimal environmental damage and providing a quantitative evaluation/rating system:
	The Land and Natural Development (LAND) Code, 243 pp. John Wiley and
	Sons.
Feb 96 - Jan 98	National Academy of Sciences/National Research Council,
	Committee on Watershed Management
2000 - present	Advisory committee to New Haven's Sound School (marine science high school)
2010 - 2018	Sponsored and hosted recent public conferences on (a) nonpoint source, and (b) point source pollution of Connecticut's Quinnipiac River, and (c) instream flow in Connecticut rivers, (d) urban green infrastructure, (e) 21 st century parks, (f) urban ecosystem services, (g) urban nature and human health, (h) urban resilience and sustainability, and (i) urban green infrastructure.
1999 - present	Helped form citizen watershed group for New Haven's Mill River. Current Vice President and Webmaster.