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Profession

Research Biogeochemist. Expertise in Ecosystem Ecology, Biogeochemical Cycling, Microbial Ecology and Global Change.

Employment

2010-present Deputy Director, Smithsonian Environmental Research Center, MD
2000-present Senior Scientist, Smithsonian Environmental Research Center, MD
1996-2000 Assistant Professor of Biology, George Mason University, Fairfax, VA
1985-1990 Research Associate, Savannah River Ecology Laboratory, Aiken, SC

Appointments

2000-present George Mason University, Biology Department
2001-2007 Old Dominion University, Biology Department
2004-present University of Maryland, MEES Graduate Program

Professional Preparation†

Old Dominion University	Biology	B.S.	1982
Old Dominion University	Ecosystem Ecology (Chair: Frank Day, Jr.)	M.S.	1986
Duke University	Biogeochemistry (Chair: Bill Schlesinger)	Ph.D.	1996

†No Postdoctoral Institution

Awards & Fellowships

1993 NSF Dissertation Improvement Grant
1993 NASA Climate Change Graduate Fellowship
1996 Smithsonian Institution Post-Doctoral Fellowship (declined)
2008 Presidential Citation of the Soil Science Society of America
2009 Smithsonian Institution Secretary's Research Prize
2009 Outstanding Achievement Award, Renewable Natural Resources Foundation
2009 Merit Award, Soil and Water Conservation Society
2010 W.H. Patrick Memorial Lectureship, Soil Science Society of America
2012 Fellow of the Soil Science Society of America
2015 Fellow of the Ecological Society of America

Publications

(JPM as corresponding author or lead co-author in bold; undergraduates underlined)

I. Journals and Books

98. Caplan, JS, RN Hager, JP Megonigal and TJ Mozdzer. 2015. Global change accelerates carbon assimilation by a wetland ecosystem engineer. *Environmental Research Letters*. 10 (2015) 115006. doi:10.1088/1748-9326/10/11/115006.
97. Pastore, M.A., J.P. Megonigal, and J.A. Langley. in press. Elevated CO₂ promotes long-term nitrogen accumulation only in combination with nitrogen addition. *Global Change Biology*.
96. Mueller, P., K. Jensen, and P. **Megonigal** (2015) Plants mediate soil organic matter decomposition in response to sea level rise. *Global Change Biology* 10.1111/gcb.13082
95. Neubauer, SC and JP **Megonigal** (2015). Moving beyond global warming potentials to quantify the climatic role of ecosystems. *Ecosystems* 18:1000-1013. doi: 10.1007/s10021-015-9879-4
94. **Megonigal**, JP and M Rabenhorst (2013). Reduction-oxidation potential and oxygen. Pages 71-86 in RD DeLaune, KR Reddy, CJ Richardson and JP Megonigal (editors) *Methods in Biogeochemistry of Wetlands*. 1004 pages. Soil Science Society of America Book Series number 10. Soil Science Society of America, Madison, WI. doi: 10.2136/sssabookser10.c1.
93. Kirwan, ML and JP **Megonigal** (2013). Tidal wetland stability in the face of human impacts and sea-level rise. *Nature*. 504: 53-60. doi:10.1038/nature12856
91. Hungate, BA, FP Day, P Dijkstra, BD Duval, CR Hinkle, JA Langley, JP Megonigal, P Stiling, DW Johnson and BG Drake (2013). Fire, hurricane and carbon dioxide: effects on net primary production of a subtropical woodland. *New Phytologist*. doi: 10.1111/nph.12409
90. Hungate, BA, P Dijkstra, Z Wu, BD Duval, FP Day, DW Johnson, JP Megonigal, ALP Brown, JL Garland (2013). Cumulative response of ecosystem carbon and nitrogen stocks to chronic CO₂ exposure in a subtropical oak woodland. *New Phytologist*, doi: 10.1111/nph.12333
89. Geatz, GW, BA Needelman, RR Weil and JP Megonigal (2013). Nutrient availability and soil organic matter decomposition response to prescribed burns in mid-Atlantic brackish marshes. *Soil Science Society of America Journal*. 77: 1852–1864. doi: 10.1007/s13157-013-0417-x
88. Mozdzer, TJ and JP **Megonigal** (2013). Increased methane emissions by an introduced *Phragmites australis* lineage under global change. *Wetlands*. doi: 10.1007/s13157-013-0417-x
87. Langley, JA, TJ Mozdzer, KA Shepard, SB Hagerty and JP **Megonigal** (2013). Tidal marsh responses to elevated CO₂, nitrogen fertilization and sea level rise. *Global Change Biology*. doi: 10.1111/gcb.12147
86. Kirwan, ML, JA Langley, GR Guntenspergen, and JP Megonigal (2013). The impact of sea-level rise on organic matter decay rates in Chesapeake Bay brackish tidal marshes. *Biogeosciences*. 10: 1869-1876 doi: 10.5194/bg-10-1869-2013

85. Baldwin, AH, PJ Kangas, JP Megonigal, MC Perry and DF Whigham (2012). Coastal wetlands of the Chesapeake Bay. Pages 29-43 in DP Batzer and AH Baldwin (editors) *Wetland habitats of North America*. University of California Press, Berkeley, CA. 389 pages.

84. Mozdzer, TJ and JP **Megonigal** (2012). Jack-and-master trait responses to elevated CO₂ and N: A comparison of native and introduced *Phragmites australis*. PLoS One. 7(10): e42794. doi:10.1371/journal.pone.0042794

83. Bullock, A, A Sutton-Grier, J **Megonigal**. 2013. Anaerobic Metabolism in Tidal Freshwater Wetlands: III. Temperature Regulation of Iron Cycling. *Estuaries and Coasts*, 36 (3): 482-490. doi: 10.1007/s12237-012-9536-5

82. Keller, J, A Sutton-Grier, A Bullock and JP **Megonigal** (2013). Anaerobic metabolism in tidal freshwater wetlands: I. Plant removal effects on iron reduction and methanogenesis. *Estuaries and Coasts*. 36 (3):457-470. doi: 10.1007/s12237-012-9527-6

81. Emerson, D, W Bellows, JL Keller, CL Moyer, A Sutton-Grier, and JP **Megonigal** (2013). Anaerobic Metabolism in Tidal Freshwater Wetlands: II. Effects of Plant Removal on Archaeal Microbial Communities. *Estuaries and Coasts*. 36 (3): 471-481. doi 10.1007/s12237-012-9496-9

80. Langley, JA and JP **Megonigal** (2012). Field-based radiometry to estimate tidal marsh plant growth in response to elevated CO₂ and nitrogen addition. *Wetlands*. doi 10.1007/s13157-012-0292-x

79. Pendleton, L, DC Donato, BC Murray, S Crooks, WA Jenkins, S Sifleet, C Craft, JW Fourqurean, JB Kauffman, N Marbà, P Megonigal, E Pidgeon, D Herr, D Gordon, A Baldera (2012). Estimating global "blue carbon" emissions from conversion and degradation of vegetated coastal ecosystems. PLoS ONE 7(9): e43542. doi:10.1371/journal.pone.0043542

78. Dunbar, J, SA Eichorst, L Gallegos-Graves, S Silva, G Xie, NW Hengartner, RD Evans, BA Hungate, RB Jackson, JP Megonigal, CW Schadt, R Vilgalys, DR Zak, and CR Kuske (2012). Common bacterial responses in six ecosystems exposed to ten years of elevated atmospheric carbon dioxide. *Environmental Microbiology*. doi 10.1111/j.1462-2920.2011.02695.x

77. Richter, D, AR Bacon, ML Mobley, CJ Richardson, SS Andrews, L West, S Wills, S Billings, CA Cambardella, N Cavallaro, JE DeMeester, AJ Franzluebbbers, S Grandy, S Grunwald, J Gruver, AS Hartshorn, H Janzen, M Kramer, JK Ladha, K Lajtha, GC Liles, D Markewitz, JP Megonigal, AR Mermut, C Rasmussen, DA Robinson, P Smith, C Stiles, RL Tate, III, A Thompson, AJ Tugel, H van Es, D Yaalon, T Zobeck (2011). Human-soil relations are changing rapidly: Proposals from SSSA's Cross-Divisional Soil Change Working Group. *Soil Science Society of America Journal*. 75(6):2079-2084.

76. White, KP, Langley, JA, Cahoon, DR, Megonigal, JP (2012). C₃ and C₄ biomass allocation responses to elevated CO₂ and nitrogen: Contrasting resource capture strategies. *Estuaries & Coasts* 35: 1028-1035, 10.1007/s12237-012-9500-4.

75. Weber, CF, DR Zak, BA Hungate, RB Jackson, R Vilgalys, RD Evans, SW Schadt, JP Megonigal and CR Kuske (2011). Responses of soil cellulolytic fungal communities to elevated atmospheric CO₂ are

- complex and variable across five ecosystems. *Environmental Microbiology* 13(10): 2778-2793. doi 10.1111/j.1462-2920.2011.02548.x
74. Duval, BD, P Dijkstra, SM Natali, JP Megonigal, MT Ketterer, BG Drake, MT Lerdau, G Gordon, AD Anbar, BA Hungate (2011). Plant-soil distribution of potentially toxic elements in response to elevated CO₂. *Environmental Science & Technology*. 45: 2570-2574, doi 10.1021/es102250u
73. Tzortziou, M, PJ Neale, JP Megonigal, CL Pow, M Butterworth (2011). Spatial gradients in dissolved carbon due to tidal marsh outwelling into a Chesapeake Bay estuary. *Marine Ecology Progress Series* 426: 41-56. doi 10.3354/meps09017
72. Brantley, SL, JP Megonigal, FN Scatena, Z Balogh-Brunstad, RT Barnes, MA Bruns, P van Cappellen, K Dontsova, H Hartnett, T Hartshorn, A Heimsath, E Herndon, L Jin, CK Keller, JR Leake, WH McDowell, FC Meinzer, TJ Mozdzer, S Petsch, J Pett-Ridge, KS Pregitzer, P Raymond, CS Riebe, K Shumaker, A Sutton-Grier, R Walter, K Yoo (2011). Twelve testable hypotheses on the geobiology of weathering. *Geobiology*. doi 10.1111/j.1472-4669.2010.00264.x
71. Sutton-Grier, AE, JK Keller, R Koch, C Gilmour and JP **Megonigal** (2011). Electron donors and acceptors influence anaerobic soil organic matter mineralization in tidal marshes. *Soil Biology and Biochemistry*. 43(7): 1576-1583. doi:10.1016/j.soilbio.2011.04.008
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69. Poffenbarger, HJ, BA Needelman, JP **Megonigal** (2011). Salinity influence on methane emissions from tidal marshes. *Wetlands*. 31: 831-842. doi 10.1007/s13157-011-0197-0
68. **Megonigal**, JP and EJ Megonigal (2010). News from Online—Smithsonian’s *Dig It!* web site shows that soil is not a dirty, four-letter word. *Chemical Education Today*. 87 (2): 133-134. doi 10.1021/ed8000667
67. Langley, JA and JP **Megonigal** (2010). Ecosystem response to elevated CO₂ levels limited by nitrogen-induced plant species shift. *Nature* 466(7302): 96-99. doi 10.1038/nature09176
66. **Megonigal**, JP, B Stauffer, S Starrs, P Pakarik, P Drohan, J Havlin (2010). “Dig It!”: How an Exhibit Breathed Life into Soils Education. *Soil Science Society of America Journal* 74(3): 706-716, doi 10.2136/sssaj2009.0409
65. Drohan, PJ, JL Havlin, JP Megonigal, HH Cheng (2010). The “Dig It!” Smithsonian Soils Exhibition: Lessons Learned and Goals for the Future. *Soil Science Society of America Journal* 74 (3): 697-705, doi 10.2136/sssaj2009.0017.
64. Rabenhorst, MC, JP **Megonigal** and JK Keller (2010). Synthetic iron oxides for documenting sulfide in marsh pore water. *Soil Science Society of America Journal*. 74(4): 1383-1388. doi10.2136/sssaj2009.0435

63. Keller, JK, AA Wolf, PB Weisenhorn, BG Drake and JP **Megonigal** (2009). Elevated CO₂ affects porewater chemistry in a brackish marsh. *Biogeochemistry* 96(1-3): 101-117. doi 10.1007/s10533-009-9347-3
62. Whigham, DF, JTA Verhoeven, V Samarkin, JP Megonigal (2009). Responses of *Avicennia germinans* (black mangrove) and the soil microbial community to nitrogen addition in a hypersaline wetland. *Estuaries and Coasts*. 32(5): 926-936.
61. Fierer, N., KM Carney, MC Horner-Devine and JP Megonigal (2009). The biogeography of ammonia-oxidizing bacterial communities in soil. *Microbial Ecology*. 58(2):435-445. doi 10.1007/s00248-009-9517-9
60. Keller, JK, PB Weisenhorn and JP **Megonigal** (2009). Humic acids as electron acceptors in wetland decomposition. *Soil Biology and Biochemistry*. 41(7): 1518-1522. doi 10.1016/j.soilbio.2009.04.008
59. McKinley, DC, JC Romero, BA Hungate, BG Drake and JP **Megonigal** (2009). Does soil N availability sustain long-term ecosystem response to elevated CO₂? *Global Change Biology* 15(8): 2035-2048. doi 10.1111/j.1365-2486.2008.01836.x
58. **Megonigal**, JP and SC Neubauer (2009). Biogeochemistry of tidal freshwater wetlands. Pages 535-562 in GME Perillo, E Wolanski, DR Cahoon, M Brinson (editors) *Coastal Wetlands: An Integrated Ecosystem Approach*. Elsevier Science, The Netherlands.
57. Langley, JA, KL McKee, DR Cahoon, JA Cherry, JP **Megonigal** (2009). Elevated CO₂ stimulates marsh elevation gain, counterbalancing sea-level rise. *Proceedings of the National Academy of Sciences*. 106(15): 6182-6186. doi 10.1073.pnas.0807695106
56. Langley, JA, MV Sigrist, J Duls, DL Cahoon, JC Lynch, JP **Megonigal** (2009). Global change and marsh elevation dynamics: Experimenting where land meets sea and biology meets geology. In: Lang, MA, IG Macintyre and K Rützler (eds.). Pages 391-400 in *Proceedings of the Smithsonian Marine Sciences Symposium. Contributions to the Marine Sciences, No. 38*. Smithsonian Institution Scholarly Press, Washington, DC.
55. Langley, JA, DC McKinley, AA Wolf, BA Hungate, BG Drake, JP **Megonigal** (2009). Priming depletes soil carbon and releases nitrogen in a scrub-oak ecosystem exposed to elevated CO₂. *Soil Biology and Biochemistry*. 41(1): 54-60, doi 10.1016/j.soilbio.2008.09.016
54. Neubauer, SC, D Emerson and JP Megonigal (2008). Microbial oxidation and reduction of iron in the root zone and influences on metal mobility. Pages 339-371 in A Violante, PM Huang, and GM Gadd (editors). *Biophysico-Chemical Processes of Heavy Metals and Metalloids in Soil Environments*. John Wiley & Sons, New Jersey, USA.
53. **Megonigal**, JP (2008). *Frontiers in Wetland Biogeochemistry*. *Archives of Agronomy and Soil Science* 54(3): 237-238.

52. Ma, S, GW Luther, III, J Keller, AS Madison, E Metzger, D Emerson and JP Megonigal (2008). Solid-State Au/Hg microelectrode for the investigation of Fe and Mn cycling in a freshwater wetland: Implications for methane production. *Electroanalysis* 20(3): 233-239.
51. **Megonigal**, JP and AKT Guenther (2008). Methane emissions from upland forest soils and vegetation. *Tree Physiology* 28:491-498.
50. Tzortziou, M, PJ Neale, CL Osburn, JP Megonigal, N Maie, and R Jaffé (2008). Tidal marshes as a source of optically and chemically distinctive colored dissolved organic matter in the Chesapeake Bay. *Limnology and Oceanography*. 53(1):148–159.
49. Cheng, W, K Yagi, H Akiyama, S Nishimura, S Sudo, T Fumoto, T Hasegawa, AE Hartley, JP Megonigal (2007). An empirical model of soil chemical properties that regulate methane production in Japanese rice paddy soils. *Journal of Environmental Quality*, 36: 1920-1925. doi 10.2134/jeq2007.0201
48. Weiss, JV, JA Rentz, T Plaia, SC Neubauer, M Merrill-Floyd, T Lilburn, C Bradburne, JP Megonigal, and D Emerson (2007). Characterization of neutrophilic Fe(II)-oxidizing bacteria isolated from the rhizosphere of wetland plants and description of *Ferritrophicum radicolica* gen. nov. sp. nov., and *Sideroxydans paludicola* sp. nov. *Geomicrobiology Journal*, 24:559–570. doi 10.1080/01490450701670152
47. Wolf, AA, BG Drake, JE Erickson, and JP **Megonigal** (2007). An oxygen-mediated positive feedback between elevated CO₂ and soil organic matter decomposition in a simulated anaerobic wetland. *Global Change Biology* 13(9): 2036-2044. doi 10.1111/j.1365-2486.2007.01407.x
46. Carney, KM, BA Hungate, BG Drake, and JP **Megonigal** (2007). Altered soil microbial community at elevated CO₂ leads to loss of soil carbon. *Proceedings of the National Academy of Sciences* 104:4990-4995. doi 10.1073/pnas.0610045104
45. Cornell, JA, CC Craft and JP **Megonigal** (2007). Ecosystem gas exchange across a created salt marsh chronosequence. *Wetlands*. 27(2):240-250.
44. Neubauer, SC, GE Toledo-Durán, D Emerson and JP **Megonigal** (2007). Returning to their roots: Iron-oxidizing bacteria enhance short-term plaque formation in the wetland-plant rhizosphere. *Geomicrobiology* 24:65-73. doi 10.1080/01490450601134309
43. Erickson, JE, JP Megonigal, G Peresta, BG Drake (2007). Salinity and sea level mediate elevated CO₂ effects on C₃-C₄ plant interactions and tissue nitrogen in a Chesapeake Bay tidal wetland. *Global Change Biology* 13:202-215. doi 10.1111/j.1365-2486.2006.01285.x
42. Bodelier, PLE, P Frenzel, HL Drake, T Hurek, K Küsel, C Lovell, P **Megonigal**, B Reinhold-Hurek and B Sorrell (2006). Ecological Aspects of Microbes and Microbial Communities Inhabiting the Rhizosphere of Wetland Plants. Pages 205-238 in Verhoeven, JTA, B Beltman, R Bobbink, and DF Whigham (Eds). *Wetlands and Natural Resource Management*. Springer Berlin Heidelberg.
41. Bridgham, SD, JP **Megonigal**, JK Keller, NB Bliss, and C Trettin (2006). The carbon storage of North American wetlands. *Wetlands* 26:889-916.

40. Hines, J, JP Megonigal and RF Denno (2006). Nutrient subsidies to belowground microbes impact aboveground food web interactions. *Ecology* 87(6):1542-1555.
39. Burdt, AC, JM Galbraith and JP Megonigal (2006). Using CO₂ efflux rates to indicate below-ground growing seasons by land-use treatment. *Wetlands Ecology and Management* 14:133-145.
38. Hungate, BA, DW Johnson, P Dijkstra, G Hymus, P Stiling, JP Megonigal, AL Pagel, JL Moan, F Day, H Li, CR Hinkle, and BG Drake (2006). Nitrogen cycling during seven years of atmospheric CO₂ enrichment in a scrub oak woodland. *Ecology* 87: 26-40.
37. Saunders, CJ, JP Megonigal and JF Reynolds (2006). Comparison of belowground biomass in C3- and C4-dominated mixed communities in a Chesapeake Bay brackish marsh. *Plant and Soil* 280:305-322.
36. Neubauer, SC, K Givler, S Valentine, and JP **Megonigal** (2005). Seasonal patterns and plant-mediated controls of subsurface wetland biogeochemistry. *Ecology* 86:3334-3344.
35. Marsh, AS, DP Rasse, BG Drake, and JP **Megonigal** (2005). Effect of elevated CO₂ on carbon pools and fluxes in a brackish marsh. *Estuaries* 28:694-704.
34. Weiss, JV, D. Emerson, and JP **Megonigal** (2005). Rhizosphere iron(III) deposition and reduction in a *Juncus effusus* L.-dominated wetland. *Soil Science Society of America Journal* 69:1861-1870.
33. **Megonigal**, JP, CD Vann and AA Wolf (2005). Flooding constraints on tree (*Taxodium distichum*) and herb growth responses to elevated CO₂. *Wetlands* 25(2): 430-438.
32. Garnet, KN, JP **Megonigal**, C Litchfield, and GE Taylor (2005). Physiological control of leaf methane emission from wetland plants. *Aquatic Botany* 81:141-155.
31. Lim C, M Kafatos M, and JP Megonigal (2004). Correlation between atmospheric CO₂ concentration and vegetation greenness in North America: CO₂ fertilization effect. *Climate Research* 28 (1): 1616-1572.
30. Morse, JL, JP Megonigal, and MR Walbridge (2004). Sediment nutrient accumulation and nutrient availability in two tidal freshwater marshes along the Mattaponi River, Virginia, USA. *Biogeochemistry* 69(2): 175-206.
29. **Megonigal**, JP, ME Hines, and PT Visscher (2004). Anaerobic Metabolism: Linkages to Trace Gases and Aerobic Processes. Pages 317-424 in Schlesinger, W.H. (Editor). *Biogeochemistry*. Elsevier-Pergamon, Oxford, UK.
28. Pendall, E, S Bridgham, PJ Hanson, B Hungate, DW Kicklighter, DW Johnson, BE Law, Y Luo, JP Megonigal, M Olsrud, MG Ryan, S Wan (2004). Below-ground process responses to elevated CO₂ and temperature: A discussion of observations, measurement methods, and models. *New Phytologist* 162: 311-322.

27. Weiss, JV, D Emerson and JP **Megonigal** (2004). Geochemical control of microbial Fe(III) reduction potential in wetlands: comparison of the rhizosphere to non-rhizosphere soil. *FEMS Microbiology Ecology*. 48(1): 89-100.
26. Craft, C, P **Megonigal**, S Broome, J Stevenson, R Freese, J Cornell, L Zheng and J Sacco (2003). The pace of ecosystem development of constructed *Spartina alterniflora* marshes. *Ecological Applications* 13(5): 1417-1432
- *25. Weiss, JV, D Emerson, SM Backer and JP **Megonigal** (2003). Enumeration of Fe(II)-oxidizing and Fe(III)-reducing bacteria in the root zone of wetland plants: Implications for a rhizosphere iron cycle. *Biogeochemistry*. 64: 77-96.
24. Darke, AK and JP **Megonigal** (2003). Control of sediment deposition rates in two mid-Atlantic coast tidal freshwater wetlands. *Estuarine and Coastal Shelf Science* 57(1): 255-268
23. Vann, CD and JP **Megonigal** (2003). Elevated CO₂ and water depth regulation of methane emissions: Comparison of woody and non-woody wetland plant species. *Biogeochemistry* 63: 117-134
22. Vann CD and JP **Megonigal** (2002). Productivity responses of *Acer rubrum* and *Taxodium distichum* seedlings to elevated CO₂ and flooding. *Environmental Pollution* 116: S31-S36
21. Neubauer, SC, D Emerson, and JP Megonigal (2002). Life at the energetic edge: Kinetics of circumneutral iron oxidation by lithotrophic iron-oxidizing bacteria isolated from the wetland-plant rhizosphere. *Applied and Environmental Microbiology* 68: 3988-3995.
20. **Megonigal**, JP and WH Schlesinger (2002). Methane-limited methanotrophy in tidal freshwater swamps. *Global Biogeochemical Cycles*. 16(4), 1088, doi10.1029/2001GB001594
19. Oren, R, JS Sperry, BE Ewers, DE Pataki, N Phillips and JP Megonigal (2001). Sensitivity of mean canopy stomatal conductance to vapor pressure deficit in a flooded *Taxodium distichum* forest: hydraulic and non-hydraulic effects. *Oecologia* 126: 21-29.
18. Gitay, H and 47 coauthors including JP Megonigal (2001). Ecosystems and their goods and services. Pages 235-342 In McCarthy, J.J, OF Canziani, NA Leary, DJ Dokken, and KS White (Editors). *Climate Change 2001: Impacts, Adaptation, and Vulnerability. Contribution of Working Group II to the Third Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge University Press, Cambridge.
17. Day, FP and JP **Megonigal** (2000). Plant organic matter dynamics in the Dismal Swamp. Pages 51-57 in Rose, RK (ed.) *The Natural History of the Great Dismal Swamp*. Old Dominion University Press, Norfolk, VA.
16. Schlesinger, WH, JP Winkler and JP Megonigal (2000). Soils and the global carbon cycle. Pages 93-101 in Wigley, TML and DS Schimel (eds.) *The Carbon Cycle*. Cambridge University Press, Cambridge, UK.
15. Najjar, RG, HA Walker, PJ Anderson, EJ Barron, RJ Bord, JR Gibson, VS Kennedy, CG Knight, JP Megonigal, RE O'Conner, CD Polsky, MP Psuty, BA Richards, LG Sorenson, EM Steele, and RS Swanson

(2000). The potential impacts of climate change on the mid-Atlantic coastal region. *Climate Research*. 14: 219-233.

14. **Megonigal**, JP, SC Whalen, DT Tissue, BD Bovard, DB Albert and AS Allen (1999). A plant – soil – atmosphere microcosm for tracing radiocarbon from photosynthesis through methanogenesis. *Soil Science Society of America Journal* 63: 665-671.

13. Emerson, D, JV Weiss and JP Megonigal. 1999. Iron-oxidizing bacteria are associated with ferric hydroxide precipitates (Fe-Plaques) on the roots of wetland plants. *Applied and Environmental Microbiology* 65: 2758-2761.

12. Oren, R, N Phillips, BE Ewers, DE Pataki and JP Megonigal (1999). Sap flux-scaled transpiration responses to light, vapor pressure deficit, and leaf area reduction in a flooded *Taxodium distichum* forest. *Tree Physiology* 19: 337-347.

11. **Megonigal**, JP and WH Schlesinger (1997). Enhanced CH₄ emissions from a wetland soil exposed to elevated CO₂. *Biogeochemistry* 37: 77-88.

10. Tissue, DT, JP Megonigal, RB Thomas (1997). Nitrogenase activity and N₂ fixation are stimulated by elevated CO₂ in a tropical N₂-fixing tree. *Oecologia* 109: 28-33.

9. **Megonigal**, JP, WH Conner, S Kroeger, RR Sharitz (1997). Aboveground production in southeastern floodplain forests: A test of the subsidy-stress hypothesis. *Ecology* 78: 370-384.

8. **Megonigal**, JP, SP Faulkner, and WH Patrick (1996). The microbial activity season in southeastern hydric soils. *Soil Science Society of America Journal* 60: 1263-1266.

7. **Megonigal**, JP, WH Patrick, and SP Faulkner (1993). Wetland identification in seasonally flooded forest soils: Soil morphology and redox dynamics. *Soil Science Society of America Journal* 57: 140-149.

6. Young, PJ, JP Megonigal, RR Sharitz, and FP Day (1993). False ring formation in bald cypress (*Taxodium distichum*) saplings under two flooding regimes. *Wetlands* 13: 293-298.

5. Day, FP and JP Megonigal (1993). The relationship between variable hydroperiod, production allocation, and belowground organic turnover in forested wetlands. *Wetlands* 13(2): 115-121.

4. **Megonigal**, JP and FP Day (1992). Effects of flooding on root and shoot production in large experimental enclosures. *Ecology* 73: 1182-1193.

3. Day, FP, JP Megonigal and LC Lee (1989). Cypress root decomposition in experimental wetland mesocosms. *Wetlands* 9(2): 263-282.

2. **Megonigal**, JP and FP Day (1988). Organic matter dynamics in four seasonally flooded forests of the Great Dismal Swamp. *American Journal of Botany* 75: 1334-1343.

1. **Megonigal**, JP (1985). Field Notes: *Agkistrodon contortrix mokasen* (Northern Copperhead) and *Lampropeltis getulus getulus* (Eastern Kingsnake). *Catesbeiana* 5(1): 16.

II. Other Publications

Edited Book: DeLaune, R.D., K.R. Reddy, C.J. Richardson, and J.P. (eds). Megonigal (2013). *Methods in Biogeochemistry of Wetlands*. Soil Science Society of America, Madison, WI.

Report: Schlesinger, WH, VP Aneja, FS Chapin, N Comerford, JP Gibbs, T Hrabik, JP Megonigal, MG Turner, J Whitaker (2009). *Strategic Plan for Scientific Research in Isle Royale National Park*. Report to Isle Royale National Park.

Newsletter: Megonigal, JP (2008). *President's Address: Wetland Science Leadership*. Society of Wetland Scientists Bulletin 25 (1): 4-5.

Report: Bridgham, SD, JP **Megonigal**, JK Keller, NB Bliss, and C Trettin (2007). Wetlands. In: *The First State of the Carbon Cycle Report (SOCCR): The North American Carbon Budget and Implications for the Global Carbon Cycle*. A Report by the U.S. Climate Change Science Program and the Subcommittee on Global Change Research [King, A.W., L. Dilling, G.P. Zimmerman, D.M. Fairman, R.A. Houghton, G. Marland, A.Z. Rose, and T.J. Wilbanks (eds.)]. National Oceanic and Atmospheric Administration, National Climatic Data Center, Asheville, NC, USA, pp. 139-148.

Letter to Editor: *Wetlands play role in reducing CO₂*. Baltimore Sun (19 October 2007).
<http://www.baltimoresun.com/news/opinion/letters/bal-ed.le.19oct19,0,3502396.story>

Science Curriculum: Content editor for *Nourishing the Planet in the 21st Century* (2007). A Curriculum Module for Middle School Life Science. The Nutrients for Life Foundation.

Newsletter: Megonigal, P. (2007). Of mud and microbes. *Jug Bay Wetlands Sanctuary News*. 20(4): 4.

Popular Book: Content editor for *Ecosystems* (2004). Published by The National Academy of Science and the Smithsonian Institution.

Encyclopedia: Megonigal, JP (2004). [*Global natural cycles in Earth's system*](#) EOLSS Publishers.

Popular Book: Special Editor for one-third of *Earth*. JF Luhr (editor-in-chief) (2003). Published by Dorling Kindersley, Ltd., UK

Report: Botkin, DB, JP **Megonigal** and N Sampson (1997). *Management-Scale Ecosystem Research: Findings and Recommendations*. Report to the Strategic Environmental Research and Development Program and the U.S. Department of Defense.

Dissertation: Megonigal, J. Patrick (1996). Methane production and oxidation in a future climate. Duke University, Durham, NC. 151 pp.

Popular Magazine: WH Schlesinger and JP Megonigal (1996). *Biogeochemistry*. *Geotimes* 41: 40.

Popular Magazine: Megonigal, JP and WH Schlesinger (1995). *Biogeochemistry*. *Geotimes* 40: 39-40.

Popular Magazine: Megonigal, JP and WH Schlesinger (1994). *Biogeochemistry*. *Geotimes* 39: 19-20.

Thesis: Megonigal, JP (1986). *Organic matter budgets and models for four plant communities in the Great Dismal Swamp*. Old Dominion University, Norfolk, VA. 155 pp.

Grants Awarded

(both total award and funds to JPM shown)

- 2015-2018 \$1,500,000. Department of Energy. *Coastal Wetland Carbon Sequestration in a Warmer Climate* (PI: \$867,666).
- 2015-2018 \$1,496,498. National Aeronautic and Space Administration. *Upscaling Coastal Carbon Monitoring from Points of Polygons: Using Satellite Data to Improve "Blue Carbon"* (Co-PI: \$225,854).
- 2014-2017 \$730,795. National Aeronautic and Space Administration. *Tidal wetlands as sources and sinks of carbon in a changing world: Remote Sensing, Measurements*. (Co-PI: \$143,421).
- 2015 \$89,000. National Science Foundation. *LTREB: Twenty-three years of tidal marsh response to environmental change*. (PI: total award \$89,711).
- 2013-2014 \$105,995. GRID-Arendal. Abu Dhabi Global Environmental Data Initiative: Blue Carbon Demonstration Project. (PI; part of a larger award).
- 2012-2014 \$257,000. Maryland Sea Grant College. *Phragmites australis invasion in the Chesapeake Bay: Implications of nitrogen pollution, elevated CO₂, and genotypic variation for tidal marsh management*. (Grant SA7528114-WW; PI; same as total award).
- 2012-2014 \$206,000. Department of Energy. *Archiving data to support data synthesis of DOE sponsored elevated CO₂ experiments*. (Grant DE-SC0008339; PI; same as total award).
- 2012-2014 \$150,000. Department of Energy. *Sources, Sinks and Processes Regulating Cryptic Methane Emissions from Upland Ecosystems*. (Grant DE-SC0008165; PI; same as total award).
- 2010-2012 \$1,690,423. National Science Foundation. *Smithsonian's Global Change Research Facilities for Large-Scale Ecological Forecasting*. (Grant DEB 0963388; Co-PI; same as total award).
- 2010-2011 \$30,000. Smithsonian Marine Science Network. *Genetic Constraints on Phragmites australis Invasion in a Changing Environment*. (PI; total award \$30,000).
- 2010-2015 \$413,711. National Science Foundation. *LTREB: Twenty-three years of tidal marsh response to environmental change*. (PI: total award \$413,711).
- 2010-2011 National Center for Ecological Analysis and Synthesis. *Tidal Wetland Carbon Sequestration and Greenhouse Gas Emissions Model*. (Grant DEB-0950080; Co-PI; funds were not distributed to PI institutions; total award \$83,150).
- 2010-2011 \$14,000. Maryland Sea Grant College Program. *Phragmites Australis Invasion at Elevated Atmospheric CO₂: Implications for Tidal Marsh Vulnerability*. (Awards SA7528082-CC & SA7528082-TT; PI; total award \$14,000).
- 2009-2013 \$112,204. US Geological Survey. *Tidal Marsh Elevation Change in Response to Elevated Carbon Dioxide and Nitrogen Pollution* (Coop Agreement G10AC00675; PI). 2009-2011. \$8,640. National Oceanographic and Atmospheric Administration. *Prescribed burns in the sustainable conservation and restoration of tidal marshes*. (Co-PI; total award \$136,436).

- 2008-2011 \$92,368. National Science Foundation. *Why does the efficiency of methane production vary dramatically among wetlands?* (Grant DEB-0816575; Co-PI; total award \$1,078,281) 8/1/2008-7/31/2008.
- 2008-2012 \$374,952. Tulane University (on behalf of the Department of Energy-National Institute for Climate Change Research; award TUL-561-07/08). *Elevated CO₂, Sea Level Rise and The Biotic Controls On Marsh Soil Elevation Change* (Co-PI) 4/1/2008-3/31/2010.
- 2007-2010 \$332,409. National Science Foundation. *Freshwater and Salt Tidal Marshes as a Source of Dissolved Organic Matter in the Chesapeake Bay Estuary* (Grant DEB-0742195; Co-PI) 9/1/07-8/31/10
- 2005-2008 \$390,000. National Science Foundation. *Plant Regulation of Competition Between Methanogens and Iron Reducing Bacteria in Freshwater Wetlands* (Grant DEB-0516400; **PI**; total award \$813,926) 8/1/05-7/31/08.
- 2005-2008 \$208,763. National Science Foundation. *Progressive nitrogen limitation in terrestrial ecosystems: empirical test of a biogeochemical paradigm* (Grant DEB-0445324; Co-PI; total award \$836,322). 4/1/05 - 3/31/08.
- 2004-2007 \$319,302 Department of Energy. *Rising CO₂ and Long-term Carbon Storage in Terrestrial Ecosystems: An Empirical Carbon Budget Validation* (Grant DE-FG02-97ER62458; **PI**; total award \$621,924).
- 2003-2008 \$473,077. US Geological Survey. *Predicting the persistence of coastal wetlands to global change effects* (Award 41A23020248; Coop Agreements 06-2302-0047, 06ERAG0011; Co-PI; total award 3,500,000).
- 2001-2004 \$444,200 Department of Energy. *Rising CO₂ and Long-term Carbon Storage in Terrestrial Ecosystems: An Empirical Carbon Budget Validation* (Grant DE-FG02-97ER62458; **PI**; total award \$444,200).
- 2000-2003 \$313,000 National Science Foundation. *Iron-Oxidizing Bacteria in the Wetland Plant Rhizosphere: Characterization of a Novel Microbial Niche* (Grant DEB-9986981; **PI**; total award \$382,000).
- 1998-2000 \$95,000 The Nature Conservancy's Ecosystem Research Program/Mellon Foundation. *Critical Components of Hydrologic Variability In Tidal Freshwater Wetlands: Vegetation and Hydrogeomorphology of the Mattaponi River, Virginia.* (Grant HO-STEW-041598-VA; **PI**; total award \$195K).
- 1998-1999 \$19,900 Thomas F. Jeffress and Kate Miller Jeffress Memorial Trust. *Role of Rhizosphere and Associated Iron-Oxidizing Bacteria in Iron Oxidation.* (Grant J-467; **PI**).
- 1997-2000 \$234,465 Department of Energy. *Rising CO₂ and Long-term Carbon Storage in Terrestrial Ecosystems: An Empirical Carbon Budget Validation.* (Grant DOE-98-59-MP-4; Smithsonian Institution subcontract; Co-PI with Bert Drake; total award \$418K).
- 1997-2000 \$106,000 Environmental Protection Agency. *Wetland Restoration in Urbanizing Coastal Watershed: Applying Successional Theory to the Development of Wetland Structure/Function Over Time.* (Grant EPA-R-826111-01-0; Indiana University subcontract; co-PI with Chris Craft; total award \$535K).
- 1995-1996 \$10,000 Carolina Federation of Environmental Programs. *Plant-microbe interactions in wetland methane production and emission.* (co-PI with S. Whalen).
- 1993-1996 \$66,000 NASA Global Change Fellowship Program. *Feedbacks of temperature and elevated CO₂ on methane emissions from temperate swamps.* (Grant NASA-4159-GC93-0238; **PI**).
- 1993-1996 \$14,000. National Science Foundation, Dissertation Improvement Program. *Effects of elevated CO₂ and temperature on methane cycling.* (Grant DEB-9311143; **PI**).

Invited Seminars, Symposia, and Workshop Presentations

- 2015 **Seminar:** Rosenberg Institute. Title: *Global Change Impacts on Wetland Vulnerability to Sea Level Rise* (Sep 2nd).
- 2014 **Seminar:** Chesapeake Biological Laboratory. Title: *Global Change Impacts on Wetland Vulnerability to Sea Level Rise* (Oct 1st).
- 2014 **Invited Lecture:** Smithsonian Institution *Anthropocene: Life in the Age of Humans* series. Title: *Coastal Legacies*.
- 2014 **Seminar:** University of Delaware. Title: *Global Change Impacts on Wetland Vulnerability to Sea Level Rise* (Apr 14th).
- 2013 **Keynote Speaker:** Estuarine and Wetland Research Graduate School of Hamburg Final Conference. University of Hamburg (Oct 25th).
- 2013 **Invited Speaker:** Shell Gabon Community Seminar. Title: The Smithsonian's Marine Global Earth Observatory network (Apr 3rd).
- 2013 **Seminar:** Virginia Commonwealth University. Title: *Global Change Impacts on Wetland Vulnerability to Sea Level Rise* (Sep 9th).
- 2013 **Invited Speaker:** Smithsonian Castle Lecture Series. Title: *The Coastal Anthropocene* (May 15th).
- 2012 **Speaker:** Russell E. Palmer Leadership Development Program Commencement Ceremony. National Museum of the American Indian (Dec 12th).
- 2012 **Seminar:** Old Dominion University. Title: *Global Change Impacts on Wetland Vulnerability to Sea Level Rise* (Sep 28th).
- 2012 **Symposium:** INTECOL Wetlands Conference symposium on *Measurement of Greenhouse Gas Emissions from Wetlands*. Title: *Approaches and Limitations to Quantifying Plant Regulation of Methane Emissions*. Orlando, FL (Jun 3rd).
- 2012 **Workshop Organizer:** *The Science of Blue Carbon*. INTECOL Wetlands Conference, Orlando, FL (June 4-6).
- 2011 **Seminar:** University of Indiana-Bloomington. Title: *Global Change Impacts on Wetland Vulnerability to Sea Level Rise* (Nov 3rd).
- 2011 **Seminar:** University of Florida. Title: *Global Change Impacts on Wetland Vulnerability to Sea Level Rise* (Oct 3rd).
- 2011 **Seminar:** Cary Institute of Ecosystem Studies. Title: *Global Change Impacts on Wetland Vulnerability to Sea Level Rise*. (Apr 21).
- 2011 **Keynote Speaker:** 2011 Environmental Chemistry Student Symposium at Penn State. Title: *Global Change Impacts on Wetland Vulnerability to Sea Level Rise* (Apr 8).
- 2011 **Seminar:** Duke University School of the Environment. Title: *Global Change Impacts on Wetland Vulnerability to Sea Level Rise* (Apr 6).
- 2011 **Seminar:** Louisiana State University. Title: *Will Wetland Responses to Elevated CO₂ Amplify or Attenuate Climate Change?* (Mar 25).
- 2010 **Seminar:** University of Maryland-Baltimore County. Title: *Will Wetland Responses to Elevated CO₂ Amplify or Attenuate Climate Change?* (Dec 1).
- 2010 **William H. Patrick Memorial Lecturer:** Title: *Will Wetlands Responses to Elevated CO₂ Amplify or Attenuate Climate Change?* Annual Meeting of the Soil Science Society of America, Long Beach, CA (Nov 1).
- 2010 **Lecture:** Durham Museum of Omaha Teachers Night. Title: *Dig It!: How an Exhibit Breathed Life into Soils*. Omaha, NE (Oct 8)
- 2010 **Workshop Organizer:** *Tidal Wetland Carbon Sequestration and Greenhouse Gas Emissions Model*. National Center for Ecological Analysis and Synthesis, Santa Barbara, CA (Mar 23-26).

- 2010 **Seminar:** Georgia Southern University Biology Seminar Series. Title: *Estuaries in a World of Elevated CO₂*. Statesboro, GA (Apr 26).
- 2010 **Seminar:** Swiss Federal Institute of Aquatic Science and Technology Seminar Series. Title: *Coastal Wetlands of the Future: Responses to Rising CO₂, Rising Nitrogen and Rising Sea Level*. University of Maryland Baltimore County (Feb 4th). Zurich, Switzerland (Feb 25th).
- 2010 **Seminar:** Maryland Association of Professional Soil Scientists Annual Meeting. Title: *Elevated CO₂, Elevated Nitrogen and Rising (or Sinking?) Tidal Marshes*. Annapolis, MD (Feb 10).
- 2010 **Seminar:** Duke University Wetlands Student Association. Title: *Coastal Wetlands of the Future: Responses to Rising CO₂, Rising Nitrogen and Rising Sea Level*. Durham, NC (Feb 4th).
- 2009 **Public Seminar:** Smithsonian Environmental Research Center Evening Lecture Series. Title: *Dig It!: How an Exhibit Breathed Life into Soils*. Edgewater, MD (May 20)
- 2009 **Plenary Speaker:** 3rd Wetland Pollutant Dynamics and Control meeting. Title: *Wetland Ecosystem Responses to Carbon Dioxide Pollution*. Barcelona, Spain (Sep 24).
- 2009 **Public Seminar:** Smithsonian Congress of Scholars Lecture Series. Title: *Dig It!: How an Exhibit Breathed Life into Soils*. Smithsonian Institution (Sep 17)
- 2009 **Meeting Co-Chair.** Annual meeting of the Society of Wetland Scientists. Madison, WI. (Jun 22-26)
- 2009 **Workshop Organizer & Speaker:** *Smithsonian Science: Dig It! The Secrets of Soil*. National Science Teachers Association Annual Meeting, New Orleans (Mar 21).
- 2009 **Workshop Organizer & Speaker:** *Frontiers in Exploration of the Critical Zone II: The Geobiology of Weathering and Erosion*. NSF-sponsored, Wash., DC (Oct 5-7)
- 2009 **Keynote Speaker:** Alberta Soil Science Workshop: An Earth Sciences Perspective on Soils. Title: *Soil Planet: Designing the Smithsonian Exhibition Dig It! The Secrets of Soil*. University of Alberta, Canada (Feb 18)
- 2008 **Lecturer:** 2nd Annual Merck Lecturer in Chemistry and Biology. Title: *Rhizosphere Ferrous Wheels: The Influence of Wetland Plants on Microbial Iron Cycling and Climate*. Augustana College, IL (Nov 20)
- 2008 **Lecturer:** 2nd Annual Merck Lecturer in Chemistry and Biology. Title: *Soil Planet: Designing the Smithsonian Exhibition Dig It! The Secrets of Soil*. Augustana College, IL (Nov 20)
- 2008 **Speaker:** Association of Ecosystem Research Centers Annual Meeting. Title: *Carbon In, Methane Out: The Greenhouse Gas Balance of North American Wetlands*. (Sep 25).
- 2008 **Keynote Speaker:** Illinois Conference on Soil and Water Science: Our Science and Society. Title: *Soil Planet: Designing the Smithsonian Exhibition Dig It! The Secrets of Soil* (Sep 16)
- 2008 **Prichard Lecturer:** 2008 International Annual Conferences of the Soil and Water Conservation Society. Title: *Dig It! The Secrets of Soil*. Tucson, AZ (Jul 28)
- 2008 **Plenary Speaker:** 2008 National Association of Conservation Districts Legislative Conference. Title: *Dig It! The Secrets of Soil*. Washington, D.C. (July 21)
- 2008 **Press Conference Speaker:** Opening of *Dig It! The Secrets of Soil*. National Museum of Natural History, Washington, DC (Jul 17)
- 2008 **Keynote Speaker.** *Effects of Climate Change on Mid-Atlantic Coastal Wetlands: Science and Conservation*. Title: *Estuaries in a World of Elevated CO₂*. Atlantic Estuarine Research Society Meeting (Mar 14)
- 2007 **Seminar:** Johns Hopkins University Biology Department Seminar Series. Title: *Priming the microbial pump: Enhanced soil organic matter decomposition at elevated CO₂*. Johns Hopkins University, Baltimore, MD (Nov 26)
- 2007 **Seminar:** Duke University Program in Ecology Seminar Series. Title: *Priming the microbial pump: Enhanced soil organic matter decomposition at elevated CO₂*. Duke University, Durham, NC (Oct 12)

- 2007 **Seminar:** *Penn State Program in Ecology Seminar Series*. Title: *Priming the microbial pump: Enhanced soil organic matter decomposition at elevated CO₂*. Penn State University, University Park, PA (Feb 26)
- 2006 Workshop: *Mid-Atlantic Region Ecological Observatory Planning Meeting*, Front Royal, VA. (Feb 28)
- 2006 **Symposium:** Where temperate meets tropical: habitat stability and functional response of coastal wetlands to nutrient enrichment. *Rising CO₂, rising sea level and rising (or sinking?) coastal wetlands*. International Society of Wetland Scientists, Cairns, Australia. (Jul 11)
- 2006 **Seminar:** *Smithsonian Congress of Scholars Seminar Series*, Washington, DC (Jan 11).
- 2006 **Seminar:** *Lamont-Doherty Seminar Series in Biology*. Title: *Rhizosphere Ferrous Wheels: The Influence of Wetland Plants on Microbial Iron Cycling and Climate*. Lamont-Doherty Earth Observatory of Columbia University, NY (Dec 1)
- 2006 **Seminar:** *Colloquium in Geologic Sciences*. Title: *Rhizosphere Ferrous Wheels: The Influence of Wetland Plants on Microbial Iron Cycling and Climate*. Wright State University (May 11)
- 2006 **Keynote Speaker:** *Regional Forest Responses to Environmental Change*. Title: *Methane cycling in upland forests: New findings and implications for forest-climate interactions*. Black Rock Forest, New York. International Union of Forest Research Organizations Meeting. (Oct 12)
- 2005 **Workshop Participant:** *Coastal Ecosystems of Indian River Lagoon/Cape Canaveral Region: Collaborative Research Priorities* (April 21-22).
- 2005 **Symposium:** Soil Science Society of American, Salt Lake City (Nov 9). *Denitrification in the Riparian-Stream Continuum*
- 2005 **Symposium:** Estuarine Research Federation Conference Special session on *Integrated Observing Systems and their Applications* (Oct 16)
- 2005 **Speaker:** *Mobile Oil Scientists in the Classroom Series*. A series of eight lectures and related activities (2 hours each) on energy and climate to middle school students in Harlingen, TX (May 4-6).
- 2005 **Speaker:** Maryland Association of Professional Soil Scientists (Smithsonian Soils Exhibit).
- 2005 **Seminar:** University of Maryland, Appalachian Research Lab, Frostburg, MD
- 2005 **Seminar:** Smithsonian Congress of Scholars
- 2005 **Plenary Speaker:** International Union of Microbiological Societies, San Francisco (Jul 25).
- 2005 **Symposium:** 9th Symposium on Wetland Biogeochemistry, Baton Rouge LA (Mar 23)
- 2004 **Symposium:** Soil Science Society of America Meeting, Seattle, WA (Wetlands and Climate Change)
- 2004 **Symposium:** 7th Intecol Wetlands Conference, Utrecht, The Netherlands. Title: *Microbially-mediated iron cycling in the wetland plant rhizosphere*.
- 2004 **Seminar:** Smithsonian Environmental Research Center, MD
- 2004 **Seminar:** Old Dominion University, VA (Biology Department Seminar Series)
- 2004 **Seminar:** First Congress on Geosciences, National Astronomy and Ionosphere Center, Arecibo Observatory, Puerto Rico
- 2003 **Symposium:** Estuarine Research Federation Meeting, Seattle, WA
- 2003 **Seminar:** West Virginia University, WV (Biology Department Seminar Series)
- 2003 **Seminar:** University of Maryland, Biology Department Seminar Series
- 2003 **Seminar:** National Wetland Research Center, Lafayette, LA
- 2002 **Workshop:** Joint US/Canadian Workshop on Wetlands, Carbon Sequestration and CH₄ (NY)
- 2002 **Seminar:** Savannah River Ecology Laboratory, University of Georgia, Aiken, SC
- 2001 **Seminar:** Virginia Technological University, Blacksburg, VA. (Botany Seminar Series)
- 2001 **Seminar:** Cornell University, Ithaca, NY. (Biogeochemistry Seminar Series)
- 2000 **Workshop:** USGS Workshop on Wetlands, Carbon Cycling and Future Climate Change (MD)
- 2000 **Symposium:** INTECOL Meetings (Quebec)

- 2000 **Seminar:** Smithsonian Environmental Research Center, MD
- 2000 **Seminar:** College of William & Mary, VA (Biology Department/VIMS Seminar Series)
- 1999 **Seminar:** University of Indiana, Bloomington, IN. (SPEA Seminar Series)
- 1999 **Seminar:** University of Georgia, Athens, GA. (Institute of Ecology Seminar Series)
- 1999 **Seminar:** National Invitational Workshop on Wetlands and Climate Change. (MD)
- 1999 **Seminar:** Horn Point Environmental Lab, MD
- 1999 **Seminar:** American Type Culture Collection, VA. (ATCC Seminar Series)
- 1998 **Workshop:** EPA/MARA workshop on the Mid-Atlantic climate change assessment (PA)
- 1998 **Seminar:** University of Illinois at Chicago. IL
- 1998 **Seminar:** Smithsonian Environmental Research Center, MD
- 1997 **Seminar:** University of Illinois at Urbana-Champaign, IL
- 1996 **Seminar:** University of North Carolina at Chapel Hill, NC
- 1996 **Seminar:** State University of New York at Brockport, NY
- 1996 **Seminar:** Northern Arizona University, AZ
- 1996 **Seminar:** George Mason University, VA

Professional Service

I. Scientific Community Service

- 1989 Chair: Society of Wetland Scientists, Poster and Exhibitor Committee
- 1990 Chair: Society of Wetland Scientists, Poster and Exhibitor Committee
- 1991 Chair: Society of Wetland Scientists, Poster and Exhibitor Committee
- 1997 Testimony: VA Dept. Nat. Res. on Water Permit 95-0153 for Auburn, VA dam
- 1998 Panelist: Professional Evaluation of Dr. Don Weller, SERC
- 1999 Chair: Southeast Chapter of the Society of Wetland Scientists
- 2000 Chair: Southeast Chapter of the Society of Wetland Scientists
- 2001 Chair: Southeast Chapter of the Society of Wetland Scientists
Member: National Science Foundation Ecosystems Panel (Spring and Fall)
Reviewer: National Climate Change Technology Initiative Report on Terrestrial Offsets
Advisor: Ukrainian government on greenhouse gas inventories
- 2002 Member: National Science Foundation Ecosystems Panel (Spring)
Panelist: MD Impacts and Vulnerability Study of the Joint Global Change Research Institute
Chair: Program Committee for *Wetland Restoration: Addressing Asian Issues Through International Collaboration*, Nanjing, China
Advisor: Ukrainian government on greenhouse gas inventories
Chair: Student Grants Committee and Board Member of SWS
- 2003 Advisor: Consortium for Atlantic Regional Assessment.
Member: National Science Foundation Ecosystems Panel (Spring, Fall)

- Advisor: Ukranian government on greenhouse gas inventories
Chair: Student Grants Committee and Board Member of SWS
- 2004 Curator: *Dig It! The Secrets of Soil*
Advisor: Consortium for Atlantic Regional Assessment
Advisor: Ukranian government on greenhouse gas inventories
Member: National Science Foundation Ecosystems Panel (Spring, Fall)
Chair: Student Grants Committee and Board Member of SWS
Coordinator: SWS student oral and poster presentation competition
Chair: Student Grants Committee and Board Member of SWS
- 2005 Curator: *Dig It! The Secrets of Soil*
Member: Soil Science Society of America Member of the Smithsonian Exhibit Design Committee
Chair: Student Grants Committee and Board Member of SWS
Panelist: "How to Succeed in Ecology" session at the ESA annual meeting
- 2006 Curator: *Dig It! The Secrets of Soil*
Member: Soil Science Society of America Member of the Smithsonian Exhibit Design Committee
President-Elect: Society of Wetland Scientist
Chair-Elect: Wetland Soils Section of the Soil Science Society of America
- 2007 Curator: *Dig It! The Secrets of Soil*
Member: Soil Science Society of America Member of the Smithsonian Exhibit Design Committee
President: Society of Wetland Scientist (SWS)
Chair: Information Technology and Communications Committee of SWS
Chair: Wetland Soils Section of the Soil Science Society of America
Chair: 10th Symposium on Wetland Biogeochemistry, Annapolis, MD
- 2008 Curator: *Dig It! The Secrets of Soil*
Past-President: Society of Wetland Scientist
Chair: Information Technology and Communications Committee of SWS
Past-Chair: Wetland Soils Section of the Soil Science Society of America
Panelist: Blue Ribbon review committee for Isle Royale National Park Research programs
- 2009 Curator: *Dig It! The Secrets of Soil*
Chair: Information Technology and Communications Committee of SWS
Panelist: National Blue Ribbon Panel on Wetland Carbon Offsets
Committee: Scientific Advisory Board of Jug Bay Wetland Sanctuary
Chair: 11th Symposium on Wetland Biogeochemistry, Annapolis, MD
- 2010 Committee: Conservation International Expert Working Group on Blue Carbon
Curator: *Dig It! The Secrets of Soil*
Chair: Information Technology and Communications Committee of SWS
Committee: US National Committee for Soil Science of the US National Academies
Chair: Editor Search Committee for Global Biogeochemical Cycles
Committee: Scientific Advisory Board of Jug Bay Wetland Sanctuary
- 2011 Curator: *Dig It! The Secrets of Soil*

Chair: Information Technology and Communications Committee of SWS
Committee: Conservation International Expert Working Group on Blue Carbon
Committee: US National Committee for Soil Science of the US National Academies
Chair: Editor Search Committee for Global Biogeochemical Cycles
Committee: Scientific Advisory Board of Jug Bay Wetland Sanctuary
Panelist: Advisory Panel for the Louisiana Carbon Offset Market Initiative

- 2012 Curator: *Dig It! The Secrets of Soil*
Chair: Information Technology and Communications Committee of SWS
Committee: Conservation International Expert Working Group on Blue Carbon
Committee: US National Committee for Soil Science of the US National Academies
Chair: Editor Search Committee for Global Biogeochemical Cycles
Committee: Scientific Advisory Board of Jug Bay Wetland Sanctuary
Panelist: Advisory Panel for the Louisiana Carbon Offset Market Initiative
- 2013 Curator: *Dig It! The Secrets of Soil*
Committee: Conservation International Expert Working Group on Blue Carbon
Committee: US National Committee for Soil Science of the US National Academies
- 2014 Curator: *Dig It! The Secrets of Soil*
Committee: Conservation International Expert Working Group on Blue Carbon
Committee: US National Committee for Soil Science of the US National Academies
- 2015 Curator: *Dig It! The Secrets of Soil*
Committee: Conservation International Expert Working Group on Blue Carbon
Committee: US National Committee for Soil Science of the US National Academies

II. George Mason University Service

- 1997 Environmental Science and Public Policy Ph.D. Executive Committee
1998 Ad Hoc Grade Appeal Committee, member
1998 University Committee on Hazardous Materials Management, member
1998 Biology Department Seminar Organizer
1999 Search Committee for Conservation Ecologist
1999 Environmental Science and Public Policy Ph.D. Executive Committee
1999 Biology Department Seminar Organizer
2000 Biology Department Seminar Organizer

III. Smithsonian Institution Service

- 2001 Lecturer: Scientific writing for interns
Chair: SERC Seminar Series
- 2002 Committee: Prepared proposal for a stable isotope laboratory to be located at SERC
Committee: Ecosystem Interactions Working Group of the US Global Change Research Program
Chair: SERC Seminar Series
- 2003 Committee: Smithsonian Institution strategic planning retreat
Chair: SERC Seminar Series
- 2004 Committee: Ecosystem Interactions Working Group of the US Global Change Research Program
Chair: NEON working group

Panelist: Molecular Evolution Fellowship Panel
Committee: SI representative on the CCTP Sequestration Working Group
Chair: SERC Seminar Series

- 2005 Committee: Ecosystem Interactions Working Group of the US Global Change Research Program
Chair: NEON working group
Chair: SERC Seminar Series
- 2006 Committee: Ecosystem Interactions Working Group of the US Global Change Research Program
Chair: NEON working group
Chair: SERC Seminar Series
- 2007 Committee: Ecosystem Interactions Working Group of the US Global Change Research Program
Chair: NEON working group
Chair: SERC Seminar Series
- 2008 Committee: Ecosystem Interactions Working Group of the US Global Change Research Program
Chair: SERC Seminar Series
- 2009 Committee: Ecosystem Interactions Working Group of the US Global Change Research Program
Chair: SERC Seminar Series
- 2010 Committee: Ecosystem Interactions Working Group of the US Global Change Research Program
- 2011 Committee: Ecosystem Interactions Working Group of the US Global Change Research Program
OUSS Committee: Awards Committee
- 2012 Committee: Ecosystem Interactions Working Group of the US Global Change Research Program
Administration: Rotational Supervisor for Amy Van Allen, Palmer Leadership Program
OUSS Committee: Awards Committee