

J. PATRICK MEGONIGAL

Smithsonian Environmental Research Center
647 Contees Wharf Road
Edgewater, MD 21037

voice: (443) 482-2346
megonigalp@si.edu

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

2019-present Joint Appointment to Pacific Northwest National Lab
2000-present George Mason University, Environmental Science & Policy, Affiliate Faculty
2001-2007 Old Dominion University, Biology Department, Affiliate Faculty
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

2023 Fellow of the American Geophysical Union
2020 Mercator Fellow of the German Research Foundation
2019 Fellow of the Society of Wetland Scientists
2018 SERC Directors Appreciation for Excellence in Science
2015 SERC Directors Appreciation for Excellence in Science
2015 Fellow of the Ecological Society of America
2012 Fellow of the Soil Science Society of America
2010 W.H. Patrick Memorial Lectureship, Soil Science Society of America
2009 Merit Award, Soil and Water Conservation Society
2009 Outstanding Achievement Award, Renewable Natural Resources Foundation
2008 Presidential Citation of the Soil Science Society of America
2009 Smithsonian Institution Secretary's Research Prize
1996 Smithsonian Institution Post-Doctoral Fellowship (declined)
1993 NASA Climate Change Graduate Fellowship
1993 NSF Dissertation Improvement Grant

Publications

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

I. Journals and Books

191. Carruthers TJB, Jones SB, Terrell MK, Scheibly JF, Player BJ, Black VA, Ehrenwerth JR, Biber PD, Connolly RM, Crooks S, Curole JP, Darnell KM, Dausman AM, DeJong AL, Doyle SM, Esposito CR, Friess DA, Fourqurean JW, Georgiou IY, Grimsditch GD, He S, Hillmann ER, Holm GO Jr, Howard J, Jung H, Jupiter SD, Kiskaddon E, Krauss KW, Lavery PS, Liu B, Lovelock CE, Mack SK, Macreadie PI, McGlathery KJ, Megonigal JP, Roberts BJ, Settelmyer S, Staver LW, Stevens HJ, Sutton-Grier AE, Villa JA, White JR and Waycott M (2024) Identifying and filling critical knowledge gaps can optimize financial viability of blue carbon projects in tidal wetlands. *Front. Environ. Sci.* 12:1421850.

<https://doi.org/10.3389/fenvs.2024.1421850>

190. Oikawa, P.Y., D. Sihi, I. Forbrich, E. Fluet-Chouinard, M. Najarro, O. Thomas, J. Shahan, A. Arias-Ortiz, S. Russell, S. H. Knox, G. McNicol, J. Wolfe, L. Windham-Myers, E. Stuart-Haentjens, S. D. Bridgham, B. Needelman, R. Vargas, K. Schäfer, E. J. Ward, P. Megonigal, J. Holmquist. 2024. A new coupled biogeochemical modeling approach provides accurate predictions of methane and carbon dioxide fluxes across diverse tidal wetlands. *Journal of Geophysical Research: Biogeosciences*, 129, e2023JG007943. <https://doi.org/10.1029/2023JG007943>

189. Bruns, N.E., G.L. Noyce, J.P. Megonigal, M.L. Kirwan. In press. A test of functional balance theory for wetland biomass allocation in a global change experiment. *Geophysical Research Letters*.

188. Fuchs, A., I.C. Davidson, J.P. Megonigal, J.L. Devaney, C. Simkanin, G.L. Noyce, M. Lu, and G.M. Cott. 2024. Stronger increase of methane emissions from coastal wetlands by non-native *Spartina alterniflora* than non-native *Phragmites australis*. *Plants, People, Planet*, 1–18. <https://doi.org/10.1002/ppp3.10578>

187. Morrissette, H., P.J. Neale, J.P. Megonigal, M. Tzortziou, E. Canuel, A.J. Pinsonneault, R.R. Hood. 2024 *Wetland soil characteristics influence the kinetics of dissolved organic carbon sorption*. *Wetlands* 44:81. <https://doi.org/10.1007/s13157-024-01835-2>

186. Li, B., Li, Z. Zheng, J. Jiang, P. Holmquist, J., Regier, P., Hammond, G., Ward, N., Myers-Pigg, A., Rich, R., Huang, W., O'Meara, T.A., Pennington, S., Megonigal, P., Bailey, V., and Chen, Xingyuan. 2024. Integrated Effects of Site Hydrology and Vegetation on Exchange Fluxes and Nutrient Cycling at a Coastal Terrestrial-Aquatic Interface. *Water Resources Research*. 60(6), e2023WR035580

<https://doi.org/10.1029/2023WR035580>

185. Martinez, A., P. Dijkstra, P. Megonigal and B. Hungate. 2024. Microbial Central Carbon Metabolism in a Tidal Freshwater Marsh and an Upland Mixed Conifer Soil Under Oxidic and Anoxic Conditions. *Applied and Environmental Microbiology*. 90 (6): 1-11, <https://doi.org/10.1128/aem.00724-24>

184. Neale, P.J., J.P. Megonigal, M. Tzortziou, E.A. Canuel, C.R. Pondell, H.K. Morrissette. 2024. Sorption of colored vs noncolored organic matter by tidal marsh soils. *Biogeosciences* 21, 2599–2620, <https://doi.org/10.5194/bg-21-2599-2024>

183. Arias-Ortiz, A., J. Wolfe, S. Bridgham, S. Knox, G. McNicol, B. Needelman, J. Shahan, E. Stuart-Haentjens, Ellen, L.-M. Windham-Myers, P. Oikawa, D. Baldocchi, J. Caplan, M. Capooci, K. Czapla, R. Derby, H. Diefenderfer, I. Forbrich, J. Keller, C. Kelley, A. Keshta, H. Kleiner, K. Krauss, R. Lane, S. Mack, S.

Moseman-Valtierra, T. Mozdzer, P. Mueller, G. Noyce, K. Schäfer, R. Sanders-DeMott, C. Schutte, R. Varga, N. Weston, B. Wilson, J. Megonigal, J. Holmquist. 2024. Methane Fluxes in Tidal Marshes of the Contiguous United States: A Synthesis of Fluxes and Analysis of Predictor Variables. *Global Change Biology*. <https://doi.org/10.1111/gcb.17462>

182. Ward, N.D. and J.P. Megonigal 2024. Researchers barking up (the right) tree find new mechanisms controlling methane transport by woody vegetation. *New Phytologist*. <https://nph.onlinelibrary.wiley.com/doi/10.1111/nph.19565>

181. Sendall, K.M., C.M. Meléndez Muñoz, A.D. Ritter, R.L. Rich, G.L. Noyce, and J.P. Megonigal. 2024. Effects of warming and elevated CO₂ on stomatal conductance and chlorophyll fluorescence of C₃ and C₄ coastal wetland species. *Wetlands*. (44) 43. <https://doi.org/10.1007/s13157-024-01780-0>

180. Morris, K.A., M. Smith, V.L. Bailey, R. Bittencourt-Peixoto, D.J. Day, N. Hamovit, A.M. Hopple, J. Lee, K.F. Patel, S. Wilson, S.A. Yarwood, P. Megonigal, B. Bond-Lamberty. 2024. Methane flux from transplanted soil monoliths depends on moisture, but not origin. *Soil Biology and Biochemistry*. 193: 109296. <https://doi.org/10.1016/j.soilbio.2023.109296>

179. O'Meara, T.A., Yuan, F., Sulman, B.N., Noyce, G.L., Rich, R., Thornton, P.E., and Megonigal, J.P. (2024). Developing a redox network for coastal saltmarsh systems in the PFLOTRAN reaction model. *Journal of Geophysical Research: Biogeosciences*, 129, e2023JG007633. <https://doi.org/10.1029/2023JG007633>

178. Patel, K.F., K.A. Rod, J. Zheng, P. Regier, F. Machado-Silva, B. Bond-Lamberty, X. Chen, D.J. Day, K.O. Doro, M.H. Kaufman, M. Kovach, N. McDowell, S.A. McKeever, J.P. Megonigal, C.G. Norris, T. O'Meara, R. Rich, P. Thornton, K.M. Kemner, N.D. Ward, M.N. Weintraub, V.L. Bailey. 2024. Time to anoxia: Observations and predictions of oxygen drawdown following coastal flood events. *Geoderma*. 444: 116854. <https://www.sciencedirect.com/science/article/pii/S0016706124000831>

177. Maxwell, T. A. Rovai, 79 alphabetical authors including J.P. Megonigal, E. Landis, L. Smart, M. Spalding, and T. Worthington. 2023. Global dataset of soil organic carbon in tidal marshes. *Scientific Data*. 10:79, <https://doi.org/10.1038/s41597-023-02633-x>

176. Adebayoa, M.B., V.L. Bailey, X. Chen, A.M. Hopple, P. Jiang, B. Li, Z. Li, J.M. Martin-Haydena, P.J. Megonigal, P.J. Regier, R. Rich, J.C. Stegen, R.W. Smith, N.D. Ward, S.C. Woodard, K.O. Doro. 2023. A hydrogeophysical framework to assess infiltration during a simulated ecosystem-scale flooding experiment. *Journal of Hydrology*. 26, 130243, <https://doi.org/10.1016/j.jhydrol.2023.130243>

175. Holmquist, J.R., D.H. Klings, M. Lonneman, J. Wolfe, B. Boyd, L.N. Brown, M. Eagle, J. Sanderman, K. Todd-Brown, E.F. Belshe, S. Chapman, R. Corstanje, C. Janousek, J.T. Morris, G. Noe, A. Rovai, A. Spivak, M. Vahsen, L. Windham-Myers, K. Kroeger, J.P. Megonigal. 2024. The Coastal Carbon Library and Atlas: open source soil data and tools supporting blue carbon research and policy. *Global Change Biology*. 30:e17098, <https://doi.org/10.1111/gcb.17098>

174. Spivak, A.C., A.J. Pinsonneault, C. Hintz, J. Brandes, J.P. Megonigal. 2023. Ephemeral microbial responses to pulses of bioavailable carbon in oxic and anoxic salt marsh soils. *Soil Biology and Biochemistry*. 185: 109157, <https://doi.org/10.1016/j.soilbio.2023.109157>

173. Kudoh, A. J.P. Megonigal, J.A. Langley, G.L. Noyce, T. Sakai, D.F. Whigham. In press. Reproductive responses to increased density and global change drivers in a widespread clonal wetland species, *Schoenoplectus americanus*. 2024. *Estuaries*, 47: 176–188. <https://doi.org/10.1007/s12237-023-01249-z>
172. Hopple, A.M., S.C. Pennington, J.P. Megonigal, V.L. Bailey, B. Bond-Lamberty. 2023. Root and microbial soil CO₂ and CH₄ fluxes respond differently to seasonal and episodic environmental changes in a temperate forest. *Journal of Geophysical Research: Biogeosciences* <https://doi.org/10.1029/2022JG007233>
171. Junyan, D., N. McDowell, Y. Fang, N. Ward, M.L. Kirwan, P. Regier, P. Megonigal, P. Zhang, H. Zhang, W. Wang, W. Li, S.C. Pennington, S.J. Wilson, A. Stearns, V. Bailey. 2023. Modeling the mechanisms of conifer mortality under seawater exposure. *New Phytologist*. <https://doi.org/10.1111/nph.19076>
170. Vahsen, M.L., Kleiner, H.S., Kodak, H., Summers, J.L., Vahsen, W.L., Blum, M.J., Megonigal, J.P., McLachlan, J.S. 2023. Complex eco-evolutionary responses of a foundational coastal marsh plant to global change. *New Phytologist*. 240: 2121-2136. <https://doi.org/10.1111/nph.19117>
169. Kirwan, J.L., J.P. Megonigal, G.L. Noyce, A.J. Smith. 2023. Geomorphic and ecological constraints on the coastal carbon sink. *Nature Reviews Earth & Environment*. <https://doi.org/10.1038/s43017-023-00429-6>
168. Hopple, A. M., K.O. Doro, V.L. Bailey, B. Bond-Lamberty, N. McDowell, K.A. Morris, A. Myers-Pigg, S.C. Pennington, P. Regier, R. Rich, A. Sengupta, R. Smith. J. Stegen, N.D. Ward, S.C. Woodard, J.P. Megonigal. 2023. Attaining freshwater and estuarine-water soil saturation in an ecosystem-scale coastal flooding experiment. *Environmental Monitoring and Assessment*. 195:425 <https://doi.org/10.1007/s10661-022-10807-0>
167. Mozdzer, T.J., J. Meschter, A.H. Baldwin, J.S. Caplan, and J.P. Megonigal. 2023. Deep nitrogen access facilitates plant invasion. *Estuaries and Coasts*. 46: 998–1008. <https://doi.org/10.1007/s12237-022-01146-x>
166. Vahsen, M.L., M.J. Blum, J.P. Megonigal, S.J. Emrich, J.R. Holmquist, B. Stiller, K.E.O. Todd-Brown, and J.S. McLachlan. 2023. Rapid plant trait evolution can alter coastal wetland resilience to sea-level rise. *Science*. 379 (6630): 393-398. <https://www.science.org/doi/10.1126/science.abq0595>
165. Noyce, G.N., A. Smith, M. Kirwan, R. Rich, and J.P. Megonigal. 2023. Oxygen priming induced by elevated CO₂ reduces carbon accumulation and methane emissions in coastal wetlands. *Nature Geoscience*. 337: 82-94. <https://www.nature.com/articles/s41561-022-01070-6>
164. Schera, M.A., R.S. Barclay, A.A. Baczynski, B.A. Smith, J. Sappington, L. Bennet, S. Chakraborty, J.P. Wilson, J.P. Megonigal, and S.L. Wing. 2022. The effect of CO₂ concentration on carbon isotope discrimination during photosynthesis in *Ginkgo biloba*: implications for reconstructing atmospheric CO₂ levels in the geologic past. *Geochimica et Cosmochimica Acta*. <https://doi.org/10.1016/j.gca.2022.09.033>
163. Mozdzer, T.J., M.K. McCormick, I.J. Slette, M.J. Blum, J.P. Megonigal. Rapid evolution of a coastal marsh ecosystem engineer in response to global change. *Science of the Total Environment*. 853: 157846 <https://doi.org/10.1016/j.scitotenv.2022.157846>

162. Lumibao, C., L. Torres Martinez, J.P. Megonigal, S.A. Van Bael, M.J. Blum. 2022. Microbial mediation of salinity stress response varies by plant genotype and provenance over time. *Molecular Ecology*. <https://onlinelibrary.wiley.com/doi/10.1111/mec.16603>
161. McDowell, N. G., Ball, M., Bond-Lamberty, B., Kirwan, M. L., Krauss, K. W., Megonigal, J. P., Mencuccini, M., Ward, N. D., Weintraub, M. N., & Bailey, V. (2022). Processes and mechanisms of coastal woody-plant mortality. *Global Change Biology*, 28, 5881– 5900. <https://doi.org/10.1111/gcb.16297>
160. Hopple, A.M., S.C. Pennington, J.P. Megonigal, V. Bailey, B. Bond-Lamberty. 2022. Disturbance legacies regulate coastal forest soil stability to changing salinity and inundation. *Soil Biology and Biochemistry*, 169: 108675. <https://www.sciencedirect.com/science/article/pii/S0038071722001328>
159. Zhu, C., J.A. Langley, L.H. Ziska, D.R. Cahoon, J.P. **Megonigal**. 2022. Accelerated sea-level rise is suppressing CO₂ stimulation of tidal marsh productivity: A 33-year study. *Science Advances* 8 (20): eabn0054 <https://doi.org/10.1126/sciadv.abn0054>
158. Macreadie, P., A.I. Robertson, B. Spinks, M.P. Adams, J.M. Atchison, J. Bell-James, B.A. Bryan, L. Chu, K. Filbee-Dexter, L. Drake, C.M. Duarte, D.A. Friess, F. Gonzalez, Q. Grafton, K.J. Helmstedt, M. Kaebernick, J. Kelleway, G.A. Kendrick, H. Kennedy, C.E. Lovelock, J.P. Megonigal, D.T. Maher, E. Pidgeon, A.A. Rogers, R. Sturgiss, S.M. Trevathan-Tackett, M. Wartman, K.A. Wilson, K. Rogers. 2022. Operationalising marketable blue carbon. *One Earth*. 5(5): 485-492. <https://doi.org/10.1016/j.oneear.2022.04.005>
157. Dijkstra, P., W. Wu, M.A. Dippold, E. Schwartz, B.A. Hungate, J.P. Megonigal, S.C. Thomas, C.O. Seymour, and A. Martinez. 2022. On Maintenance and Metabolisms in Soil Microbial Communities. *Plant and Soil*. <https://doi.org/10.21203/rs.3.rs-1193625/v1>
156. Smith, A.J., G.L. Noyce, J.P. Megonigal, G.R. Guntenspergen, and M.L. Kirwan. 2022. Temperature optimum for marsh resilience and carbon accumulation revealed in a whole ecosystem warming experiment. *Global Change Biology*. 28(10): 3236-3245. <https://doi.org/10.1111/gcb.16149>
155. Gabriel, J.R., J. Reid, L. Wang, T.J. Mozdzer, D.F. Whigham, J.P. Megonigal & J. Adam Langley. 2022. Interspecific Competition is Prevalent and Stabilizes Plant Production in a Brackish Marsh Facing Sea Level Rise. *Estuaries and Coasts*. <https://doi.org/10.1007/s12237-021-01043-9>
154. Derby, R.K., B.N. Needelman, A.R. Roden, and J.P. Megonigal. 2021. Vegetation and hydrology stratification as proxies to estimate methane emission from tidal marshes. *Biogeochemistry* <https://doi.org/10.1007/s10533-021-00870-z>
153. Mander, Ü., A. Krasnova, T. Schindler, J.P. Megonigal, J. Escuer-Gatius, M. Espenberg, K. Machacova, M. Maddison, J. Pärn, R. Ranniku, M. Pihlatie, K. Kasak, Ü. Niinemets, K. Soosaar. 2021. Long-term dynamics of soil, tree stem and ecosystem methane fluxes in a riparian forest. 151723, *Science of The Total Environment*. <https://doi.org/10.1016/j.scitotenv.2021.151723>
152. Vahsen, M.; Gentile, R.; Summers, J.; Kleiner, H.; Foster, B.; McCormack, R.; James, E.; Koch, R.; Metts, D.; Saunders, C.; Megonigal, J.; Blum, M.; McLachlan, J. 2021. Accounting for variability when

resurrecting dormant propagules substantiates their use in eco-evolutionary studies. *Evolutionary Applications*. <https://onlinelibrary.wiley.com/doi/full/10.1111/eva.13316>

151. Neubauer, S.C. and J.P. Megonigal. 2021. Biogeochemistry of wetland carbon preservation and flux. Pages 33-71, 2021 in K.W. Krauss, Z. Zhu, and C.L. Stagg (editors) *Wetland Carbon and Management*, Geophysical Monograph 267, First Edition. John Wiley & Sons, Inc.

<https://agupubs.onlinelibrary.wiley.com/doi/abs/10.1002/9781119639305.ch3>

150. Kim, S., H. Kang, J.P. Megonigal, and M. McCormick. 2021. Microbial Activity and Diversity Vary with Plant Diversity and Biomass in Wetland Ecosystems. *Estuaries and Coasts*. 1-11.

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149. Mander, Ü., A. Krasnova, J. Escuer-Gatius, M. Espenberg, T. Schindler, K. Machacova, J. Pärn, M. Maddison, P. Megonigal, M. Pihlatie, K. Kasak, Ü. Niinemets, H. Junninen, and K. Soosaar. 2021. Forest canopy mitigates soil N₂O emission during hot moments. *npj Climate and Atmospheric Science*

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148. Holmquist, J.R., L. Schile-Beers, K. Buffington, M. Lu, T.J. Mozdzer, J. Reira, D.E. Weller, M. Williams, and J.P. Megonigal. 2021. Scalability and performance tradeoffs in quantifying relationships between elevation and tidal wetland plant communities. *Marine Ecology Progress Series*. 666: 57-72,

<https://doi.org/10.3354/meps13683>

147. O'Meara, T.A., P.E. Thornton, D.M. Ricciuto, G.L. Noyce, R.L. Rich, J.P. Megonigal. 2021. Considering coasts: adapting terrestrial models to characterize coastal habitats. *Ecological Modelling*. 450: 109561

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146. Rietl, A.J., J.P. Megonigal, E.R. Herbert, and M.L. Kirwan. 2021. Vegetation type and decomposition priming mediate brackish marsh carbon accumulation under interacting facets of global change.

Geophysical Research Letters. 48: e2020GL092051. <https://doi.org/10.1029/2020GL092051>

145. Noyce, G.N. and J.P. **Megonigal**. 2021. Biogeochemical and plant trait mechanisms drive enhanced methane emissions in response to whole ecosystem warming. *Biogeosciences*. 18: 2449–2463.

<https://doi.org/10.5194/bg-18-2449-2021>

144. Wang, W., N. McDowell, S. Pennington, C. Grossiord, R. Leff, N. Ward, P. Megonigal, B. Bond-Lamberty, V. Bailey, A. Sengupta, U.U. Sezen, R. Rich, J.C. Stegen. 2020. Tree growth, transpiration, and water-use efficiency between shoreline and upland red maple (*Acer rubrum*) trees in a coastal forest.

Agricultural and Forest Meteorology. 295: 108163, <https://doi.org/10.1016/j.agrformet.2020.108163>.

143. Mueller, P. T.J. Mozdzer, J.A. Langley, L.R. Aoki, G.L. Noyce, and J.P. Megonigal. 2020. Plant species determine tidal wetland methane response to sea level rise. 11: 5154. *Nature Communications*.

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142. Trettin, C.C., R.K. Kolka, A.S. Marsh, S. Bansal, E.A. Lilleskov, P. Megonigal, J.J. Stelk, G. Lockaby, D.V. D'Amore, R.A. MacKenzie, B. Tangen, R. Chimner, and J. Gries. 2020. Wetland and Hydric Soils. Pages 99-126 in R.V. Pouyat, D.S. Page-Dumroese, T. Patel-Weyand, and L.H. Geiser (editors), *Forest and Rangeland Soils of the United States Under Changing Conditions*. Springer International Publishing, Cham, Switzerland.

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141. Pinsonneault, A.J., P.J. Neale, M. Tzortziou, E.A. Canuel, C.R. Pondell, H. Morrisette, J. Lefcheck, **J.P. Megonigal** 2020. Dissolved Organic Carbon Sorption Dynamics in Tidal Marsh Soils. *Limnology and Oceanography* 66: 214–225. <https://doi.org/10.1002/lno.11598>
140. Norwood, M.J., N.D. Ward, N.G. McDowell, A.N. Myers-Pigg, B. Bond-Lamberty, J. Indivero, S. Pennington, W. Wang, M. Kirwan, A.M. Hopple, J.P. Megonigal. 2020. Coastal Forest Seawater Exposure Increases Stem Methane Concentration. *Journal of Geophysical Research: Biogeosciences*, 125, e2020JG005915 <https://doi.org/10.1029/2020JG005915>
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138. Ward, N., J.P. Megonigal, B. Bond-Lamberty, V. Bailey, D. Butman, E. Canuel, H. Diefenderfer, N. Ganju, M. Goni, E. Graham, C. Hopkinson, T. Khangaonkar, A. Langley, N. McDowell, A. Myers-Pigg, R. Neumann, C. Osburn, R. Price, J. Rowland, A. Sengupta, M. Simard, P. Thornton, M. Tzortziou, R. Vargas, P. Weisenhorn, L. Windham-Myers (26 authors). 2020. Representing the Function and Sensitivity of Coastal Interfaces in Earth System Models. *Nature Communications*. 11: 2458. <https://doi.org/10.1038/s41467-020-16236-2>
137. Cott, G.M., M.A.K. Jensen, J.P. **Megonigal**. 2020. Uptake of organic nitrogen by coastal wetland plants under elevated CO₂. *Plant and Soil*. 450: 521–535 <https://link.springer.com/article/10.1007/s11104-020-04504-5>
136. Pennington, S.C., N.G. McDowell, J.P. Megonigal, J.C. Stegen, B. Bond-Lamberty. 2020. Localized basal area affects soil respiration temperature sensitivity in a coastal deciduous forest. *Biogeosciences*. 17 (3):771-780. <https://doi.org/10.5194/bg-17-771-2020>
135. Kauffman, J.B., M.F. Adame, V.B. Arifanti, L.M. Schile-Beers, A.F. Bernardino, R.K. Bhomia, D.C. Donato, I.C. Feller, T.O. Ferreira, M. del Carmen Jesus Garcia, R.A. MacKenzie, J.P. Megonigal, D. Daniel Murdiyarso, L. Simpson, H. Hernández Trejo. 2020. Total ecosystem carbon stocks of mangroves across broad global environmental and physical gradients. *Ecological Monographs*. e01405. <http://dx.doi.org/10.1002/ecm.1405>
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II. Data Sets

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III. Other Publications

Book: Howard, J., Hoyt, S., Isensee, K., Pidgeon, E., Telszewski, M. (eds.) (2014). Coastal Blue Carbon: Methods for assessing carbon stocks and emissions factors in mangroves, tidal salt marshes, and seagrass meadows. Conservation International, Intergovernmental Oceanographic Commission of UNESCO, International Union for Conservation of Nature. Arlington, Virginia, USA.

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Edited Book: DeLaune, R.D., K.R. Reddy, C.J. Richardson, and J.P. Megonigal (eds). (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.

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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.

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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

(total award amount with and funds directly to JPM in parentheses)

- 2024-2025 \$72,000 Simons Foundation. *Pivoting from individuals to ecosystems to understand global responses to climate change*. (Mentor)
- 2023-2025 \$699,913 National Science Foundation. *Hydraulic and Hydrologic Regulation of Greenhouse Gas Emissions from Forest Soils and Trees and Detection with Radon as a Novel Tracer*. (co-PI: \$307,497)
- 2021-2023 \$1,964,988. Department of Energy. *Coastal Observations, Mechanisms, and Predictions Across Systems and Scales*. (PI: \$1,964,988).
- 2021 \$35,000. Pew Charitable Trusts. *Assessing State-Specific Blue Carbon Information in the United States*. (co-PI: \$35,000).
- 2021-2024 \$1,600,000. Department of Energy. *Coastal Terrestrial Interface Carbon Cycling in a Warmer Climate*. (PI: \$1,186,252).
- 2018-2020 \$246,634. Battelle Memorial Institute. *Storm Surge Effects on Upland Forests as a Regulated by the Ecosystem Pore Space Continuum*. (PI: \$246,634).
- 2018-2021 \$1,000,000. Department of Energy. *Coastal Wetland Carbon Processes in a Warmer Climate*. (PI: \$799,653)
- 2018-2021 \$671,160. National Science Foundation. *New Estimates of Atmospheric pCO₂ for the Paleocene-Eocene* (Co-PI: \$161,556).
- 2017-2020 \$586,669. National Science Foundation. *Eco-evolutionary Dynamics of Coastal Marsh Responses to Rising CO₂*. (Co-PI: \$216,080)
- 2017-2022 \$499,982. National Science Foundation. *RCN: Building a Collaborative Network for Coastal Wetland Carbon Cycle Synthesis*. (Co-PI: \$499,982).
- 2016-2019 \$544,159. National Science Foundation. *Ecosystems on the Edge - Tidal wetland-estuary margins as buffers, reactors, and transformers of organic C and N*. (Co-PI: \$305,433).
- 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

- 2022 **Invited Lecture:** University of Maryland. *Plant-Microbe Interactions in Coastal Wetlands Impart Homeostasis of Greenhouse Gas Emissions* (Apr 11th).
- 2022 **Invited Lecture:** University of Florida. *Plant-Microbe Interactions Impart Homeostasis of Coastal Wetland Greenhouse Gas Emissions* (Feb 16th).
- 2022 **Invited Lecture:** COMPASS Lecture Series. *Plant-Microbe Interactions in Coastal Wetlands Impart Homeostasis of Greenhouse Gas Emissions* (Feb 10th).
- 2022 **Public Lecture:** SERC Evening Lecture Series. *Restoring the Balance: Nature's Role In Future Climate* (Jan 18th).
- 2021 **Invited Lecture:** Hamburg University. *Plant-Microbe Interactions in Coastal Wetlands Impart Homeostasis of Greenhouse Gas Emissions* (Sep 22nd).
- 2021 **Invited Lecture:** Georgetown University Environmental Meteorology and Policy Program. *Plant-Microbe Interactions in Coastal Wetlands Impart Homeostasis of Greenhouse Gas Emissions*. Apr 8th.
- 2021 **Invited Lecture:** Alberg 30 Group. *Wetlands Research and Citizen Opportunities at SERC*. Feb 20th.
- 2021 **Invited Lecture:** University of East Anglia. *Coastal Wetland Carbon Cycling in a Changing Climate* (Feb 1st).
- 2020 **Invited Lecture:** Queen Anne's County Master Gardner Program. *Sea Level Rise and the Fate of Chesapeake Wetlands* (Oct 20th).
- 2020 **Invited Speaker:** Maryland Department of Environment Seminar Series. *Insights on Blue Carbon Science and Management* (Apr 29th).
- 2020 **Invited Lecture:** Georgia Southern University. *Methane Production and Emissions in Trees and Forests* (Feb 2nd).

- 2019 **Invited Speaker:** Oak Ridge National Lab Coastal Research Workshop. *Smithsonian's Global Change Research Wetland: A Long-Term DOE Investment at the Terrestrial-Aquatic Interface* (Sep 19th).
- 2019 **Invited Speaker:** SWS Asia Chapter-Korean Wetland Society Joint Meeting, Suncheon, Korea. *Opposing effects of temperature and elevated CO₂ on tidal wetland methane emissions* (Aug 20th).
- 2019 **Keynote Lecture:** SWS Asia Chapter-Korean Wetland Society Joint Meeting, Suncheon, Korea. *Physical constraints on the stabilization of coastal carbon* (Aug 19th).
- 2019 **Invited Lecture:** Viikki Plant Science Centre (ViPS), University of Helsinki, Finland. *Methane Production and Emissions in Trees and Forests* (May 15th).
- 2019 **Keynote Lecture:** Chowan University Student Research Forum, Murfreesboro, NC. *The Surprising Ability of Coastal Wetlands to Survive Sea Level Rise* (Apr 23rd).
- 2019 **Keynote Lecture:** Chowan University Academic Forum, Murfreesboro, NC. *Ecosystem Drivers of Climate Change* (Apr 22nd).
- 2019 **Invited Lecture:** American Public Gardens Association Annual Meeting, Des Moines, Iowa. *Lessons from Dig It! The Secrets of Soils* (Apr 3rd).
- 2019 **Invited Lecture:** Texas A&M Ecosystem Science and Management Department. *Methane Production and Emissions in Trees and Forests* (Apr 2nd).
- 2019 **Invited Lecture:** SERC Evening Lecture Series. *Methane: The More Powerful Greenhouse Gas*. (Feb 26th).
- 2018 **Invited Lecture:** Washington College Environmental Science Honor Society. *Sea Level Rise and the Fate of Chesapeake Wetlands* (Mar 7th)
- 2018 **Public Lecture:** Smithsonian Environmental Research Center Public Lecture Series. *Sea Level Rise and the Fate of Chesapeake Wetlands* (Jan 23rd)
- 2018 **Seminar:** University of Massachusetts. *Interactions Regulate Greenhouse Gas Feedbacks to Global Change in a Model Tidal Marsh* (Jan 31st)
- 2017 **Seminar:** Oak Ridge National Laboratory. *Global Change Impacts on Tidal Wetland Carbon Cycling* (May 1st)
- 2017 **Seminar:** Argonne National Laboratory. *Plant-Microbe Interactions Regulate Greenhouse Gas Feedbacks to Global Change in a Model Tidal Marsh* (Mar 4th)
- 2017 **Seminar:** Department of Plant Science and Landscape Architecture's Lecture Series, University of Maryland. *Plant-Microbe Interactions Regulate Greenhouse Gas Feedbacks to Global Change in a Model Tidal Marsh* (Mar 16th).
- 2016 **Seminar:** Joint NRE/EEB Seminar Series, University of Connecticut. *Plant Traits and Sea Level Rise Dominate Tidal Marsh Response to Global Change* (Oct 28).
- 2016 **Seminar:** M. Gordan Wolman Seminar, Johns Hopkins University. *Tidal Marsh Stability in a Future Climate* (Feb 17th).
- 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

- 2024 Advisory Committee to the Georgia Coastal Ecosystems LTER
Advisory Committee to Hamburg University Coastal Training Grant
Committee: International Blue Carbon Scientific Working Group
Committee: Society of Wetland Scientists Fellows Award Subcommittee
Science Technical Working Group for the UN Global Ocean Decade Programme for Blue Carbon
University of Toledo Graduate Faculty
- 2023 Advisory Committee to the Georgia Coastal Ecosystems LTER
Advisory Committee to Hamburg University Coastal Training Grant
Committee: International Blue Carbon Scientific Working Group
Committee: Society of Wetland Scientists Fellows Award Subcommittee
- 2022 Advisory Committee to the Georgia Coastal Ecosystems LTER
Advisory Committee to Hamburg University Coastal Training Grant
Committee: International Blue Carbon Scientific Working Group
Committee: Society of Wetland Scientists Fellows Award Subcommittee
- 2021 Advisory Committee to the Georgia Coastal Ecosystems LTER
Advisory Committee to Hamburg University Coastal Training Grant
Committee: International Blue Carbon Scientific Working Group
Committee: Society of Wetland Scientists Fellows Award Subcommittee
- 2020 Advisory Committee to the Georgia Coastal Ecosystems LTER
Committee: International Blue Carbon Scientific Working Group
Committee: SPRUCE Advisory (Spruce and Peatland Responses Under Changing Environments)
Committee: Society of Wetland Scientists Fellows Award Subcommittee
- 2019 Advisory Committee to the Georgia Coastal Ecosystems LTER
Committee: International Blue Carbon Scientific Working Group
Committee: SPRUCE Advisory (Spruce and Peatland Responses Under Changing Environments)
Curator of the *Dig It! DIY*, a do-it-yourself version of the exhibit *Dig It! The Secrets of Soils*
- 2018 Committee: SPRUCE Advisory (Spruce and Peatland Responses Under Changing Environments)
Committee: International Blue Carbon Scientific Working Group
- 2017 Committee: International Blue Carbon Scientific Working Group
Committee: US National Committee for Soil Science of the US National Academies

- Committee: Co-Chair of *Soils: The Foundation of Life* Workshop
Committee: SPRUCE Advisory
- 2016 Curator: *Dig It! The Secrets of Soil*
Committee: International Blue Carbon Scientific Working Group
Committee: US National Committee for Soil Science of the US National Academies
Committee: SPRUCE Advisory
- 2015 Curator: *Dig It! The Secrets of Soil*
Committee: International Blue Carbon Scientific Working Group
Committee: US National Committee for Soil Science of the US National Academies
- 2014 Curator: *Dig It! The Secrets of Soil*
Committee: International Blue Carbon Scientific Working Group
Committee: US National Committee for Soil Science of the US National Academies
- 2013 Curator: *Dig It! The Secrets of Soil*
Committee: International Blue Carbon Scientific Working Group
Committee: US National Committee for Soil Science of the US National Academies
- 2012 Curator: *Dig It! The Secrets of Soil*
Chair: Information Technology and Communications Committee of SWS
Committee: International Blue Carbon Scientific Working Group
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
- 2011 Curator: *Dig It! The Secrets of Soil*
Chair: Information Technology and Communications Committee of SWS
Committee: International Blue Carbon Scientific Working Group
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
- 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
- 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

- 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
- 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
- 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
- 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
- 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
- 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
- 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: Ukranian government on greenhouse gas inventories
Chair: Student Grants Committee and Board Member of SWS
- 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: Ukranian government on greenhouse gas inventories

- 2000 Chair: Southeast Chapter of the Society of Wetland Scientists
- 1999 Chair: Southeast Chapter of the Society of Wetland Scientists
- 1998 Panelist: Professional Evaluation of Dr. Don Weller, SERC
- 1997 Testimony: VA Dept. Nat. Res. on Water Permit 95-0153 for Auburn, VA dam
- 1990 Chair: Society of Wetland Scientists, Poster and Exhibitor Committee
- 1991 Chair: Society of Wetland Scientists, Poster and Exhibitor Committee
- 1989 Chair: Society of Wetland Scientists, Poster and Exhibitor Committee

II. George Mason University Service

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

III. Smithsonian Institution Service

- 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
- 2011 Committee: Ecosystem Interactions Working Group of the US Global Change Research Program
OUSS Committee: Awards Committee
- 2010 Committee: Ecosystem Interactions Working Group of the US Global Change Research Program
- 2009 Committee: Ecosystem Interactions Working Group of the US Global Change Research Program
Chair: SERC Seminar Series
- 2008 Committee: Ecosystem Interactions Working Group of the US Global Change Research Program
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
- 2006 Committee: Ecosystem Interactions Working Group of the US Global Change Research Program
Chair: NEON 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
- 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
- 2003 Committee: Smithsonian Institution strategic planning retreat
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
- 2001 Lecturer: Scientific writing for interns. Chair: SERC Seminar Series

Public Engagement

2024

Invited Lecture: University of Maryland Geology Department Colloquium. Biogeochemical Mechanisms in Coastal Wetlands that Impart Greenhouse Gas Homeostasis (Mar 15th).

Public Lecture: Smithsonian Science for Global Goals Virtual Ocean! Academy. Blue Carbon (Jul 18th).

2023

Print and Web: *Marshes, Plants, & Climate Oh My!* in a special issue of USA Today titled [Sustainability in Action](#) (21 Apr 2023)

Web: [A Tale of Oxygen Priming in a Wetland](#) by Andrea Starr of DOE's EMSL facility.

2022

Radio: Genevieve and Jim were featured on NPR in [Smithsonian scientists work to save Maryland's marshes and beyond | WYPR](#)

Online: [The Wetlands Are Drowning](#) (23 May 2022) by Gregory Barber of Wired Magazine.

Online: [Carbon Captured by Coastal and Ocean Habitats Can Advance States' Climate Goals](#) (28 Mar 2022) by Sylvia Troost and Alex Clayton of Pew Charitable Trusts.

Online: [Scientists flood woodland to research 'ghost forests'](#) (18 Apr 2022) by Tim Wheeler of the Bay Journal.

Print: [Why Marshlands Are the Perfect Lab for Studying Climate Change](#) (Nov/Dec 2022) by Jennie Rothenberg Gritz in *Smithsonian Magazine*.

2021

Webinar: [Accounting for Maryland's Blue Carbon](#) (08 Dec 2021). Presentation by Pat Megonigal on *Science of Inventory and Accounting*.

Facebook: <https://www.facebook.com/smithsonian.serc/posts/4713851741967001>

Twitter (5-tweet thread): <https://twitter.com/SmithsonianEnv/status/1436389705831133188>

FYI here's my Twitter thread on it too:

<https://twitter.com/BenBondLamberty/status/1435958933278109698?s=20>

Instagram post (carousel with video and images): <https://www.instagram.com/p/CTpze12Jlj1/>

Instagram Story (live for 24 hours on our "Story" feed. A link will remain on the

@smithsonianenvironment profile page

indefinitely): <https://www.instagram.com/stories/highlights/17941757032572651/>

Invited Panel: Panel discussion led by New York Times Art Critic Martha Schwendener on an exhibit that arose from a collaboration between artist Blane de St. Croix and Pat Megonigal. Hosted by The Brooklyn Rail ([video](#)).

Exhibit: Contributed to an exhibition at the Massachusetts Museum of Contemporary Art titled How to Move a Landscape by artist Blane de St. Croix ([link](#), [video](#), [Catalog](#)).

Online: [Hungry, Hungry Microbes in Tree Bark Gobble Up Methane](#) (20 Apr 2021). By Max Levy of Wired Magazine.

Video: [SERC Climate Change for Earth Day](#) (20 Apr 2021). By SERC staff.

Print: [Along the Chesapeake Bay, Smithsonian scientists research at a vast outdoor laboratory](#) (20 Apr 2021). By Andrea Sachs of the Washington Post.

Print: [Does paved-over soil have any microbial life?](#) (20 Apr 2021). Smithsonian Magazine.

2019

Blog: [What's the Perfect Temperature to Bake Your Soil?](#) (15 Nov 2019). By Kristen Minogue.

Web: [Plants Receive Nitrogen Boost in Hotter Climes](#) (05 Nov 2019). By Kate Ravilious.

Radio: [Climate Change Experiment Fast-Forwards the Chesapeake Bay to the Year 2100](#) (06 Oct 2019). By Pamela D'Angelo of Virginia Public Radio.

Radio: [The Complicated Effect of Phragmites in the Chesapeake Bay](#) (07 Oct 2019). By Pamela D'Angelo of Virginia Public Radio.

Newsletter: [As Sea Level Rises, Wetlands Crank Up Their Carbon Storage](#) (06 Mar 2019). By Kristen Minogue of SERC.

Press Release: [As Sea Level Rises, Wetlands Crank Up Their Carbon Storage](#) (06 Mar 2019). By Kristen Minogue of SERC.

Web: [Wetland Mud is 'Secret Weapon' Against Climate Change](#) (06 Mar 2019). By Victoria Gill of the BBC.

Radio: [Coastal Wetlands Could be Secret Weapon Against Climate Change](#) (07 Mar 2019). By Thomas Oriti of ABC radio (Australia).

Web: [Coastal Wetlands Capture More Carbon as Seas Rise](#) (07 Mar 2019). By New Zealand

Herald.

Web: [Rising Seas Allow Coastal Wetlands to Store More Carbon](#) (06 Mar 2019). By Kerrylee Rogers, Jeff Kelleway, and Neil Saintalin.

2018

Quoted: [Methane uptake from forest soils has fallen by 77% in three decades](#) (6 Aug). By Daisy Dunne. CarbonBrief.

Blog: [800 Million Tons of Blue Carbon May Lie Buried in U.S. Tidal Wetlands](#) (21 Jun). By Kristen Minogue. Shorelines: Life and science at the Smithsonian Environmental Research Center.

Web: [U.S. tidal areas could hold 800M tons of carbon — study](#) (22 Jun). By Cecelia Smith-Schoenwalder. E&E News/Greenwire

Web: [Decades-long climate study flies “under the radar”](#) (17 Jul). By Cecelia Smith-Schoenwalder. E&E News/Greenwire

2017

Print: *Invasive Reed Releases Deep Carbon from Lockup* (Winter 2017). By Kristin Minogue. On The Edge (News from the Smithsonian Environmental Research Center).

Print and Web: [Growing Acidification Of The Chesapeake Bay Threatens Crabs, Oysters, Other Life](#) (5 Oct 2017). By Scott Dance. The Baltimore Sun.

2016

Web: *For the World’s Wetlands, It May Be Sink or Swim. Here’s Why It Matters*. Smithsonian Magazine (13 Jan 2016). By Kimbra Cutlip. <http://www.smithsonianmag.com/smithsonian-institution/worlds-wetlands-it-may-be-sink-or-swim-heres-why-it-matters-180957808/?no-ist>

Blog: [Cranking Up the Heat in the “Wetland of the Future”](#) (24 Jun 2016). By Joe Dawson.

Blog: [Climate Change Could Release Ancient Soil Carbon](#) (1 Jul 2016). By Kristen Minogue.

Web: [Clean energy vital in a world of worsening drought and floods](#) eNews Channel Africa (07 Jun 2016). By Bianca Ackroyd. (also accompanying [video](#))

2015

Blog: *Phragmites vs. Climate Change: Invasive Reed Better at Taking Up Carbon* (22 Dec 2015). Posted by Kirsten Minogue at <http://sercblog.si.edu/?p=6948>

Blog: Remembering Hurricane Katrina by Studying Marshes of the Future (31 Aug 2015). Posted by Heather Soulen at <http://sercblog.si.edu/?p=6500>

Smithsonian Science News: Smithsonian Scientists Working to Stop Invasions (13 Oct 2015). By Johnny Gibbons. <http://smithsonianscience.si.edu/2015/10/smithsonian-scientists-working-to-stop-invasions/>

2013

Radio: *Humans Doing More Harm Than Good In Protecting Wetlands From Rising Water.*

Johathan Wilson interview of Pat Megonigal (aired 06 Dec on WAMU).

http://wamu.org/news/13/12/06/humans_doing_more_harm_than_good_in_trying_to_protect_wetlands_against_rising_water

Web: *Humans Threaten Wetlands' Ability to Keep Pace With Sea-Level Rise.* ScienceDaily post on Nature review paper. <http://www.sciencedaily.com/releases/2013/12/131204132024.htm>

Radio: *Time Machines" Predict the Future of Plants With Climate Change.* Tom Pelton interview of Bert Drake (aired 8/14/13 on WYPR, WYPO and WYPF).

<http://www.wypr.org/EnvironmentFocus.html>

Video: *Ecosystems On The Edge: Wetlands Of The Future.* Posted to YouTube on 1 Jul 2013. Smithsonian Institution. <http://www.youtube.com/watch?v=iG9wCAoRE7w>

Blog: *Marsh Rovers: Research at the SERC Marsh.* By Katie Sinclair (27 Jun 2013). Posted by Kristen Minogue at <http://sercblog.si.edu/>

Print: *Coast Guard: A Field Study Predicts How Wetlands Will Respond to Climate Change.* Smithsonian Magazine (Oct 2013). <http://www.youtube.com/watch?v=iG9wCAoRE7w>

Web: *Marshes in a Changing World: Part 1. A Two-Decade-Long Study Explores How Marshes Take Up Carbon Dioxide* (Oct 2013). By Daniel Strain (22 Oct 2013).

<http://www.mdsg.umd.edu/news/marshes-changing-world-part-1>

Podcast: *Marshes in a Changing World: Part 2. Invasive Plant Could Help Marshes Fight Sea Level Rise.* Sea Grant Maryland. By Daniel Strain (22 Oct 2013).

<http://www.mdsg.umd.edu/news/marshes-changing-world-part-2-podcast>

2012

Press Release: Announcing the publication of our PLoS One paper "Jack-and-Master" plants better suited to climate change (<http://newsdesk.si.edu/releases/jack-and-master-plants-better-suited-climate-change>) (11/5/2012).

Print: *That Sinking Feeling.* Chesapeake Bay Magazine. By Marty LeGrand (Nov 2012).

<http://www.chesapeakeboating.net/Media/Feature-Stories/That-Sinking-Feeling.aspx>

Web: Interview by reporter Sara Reardon on upcoming *Science* article for *New Scientist*. *Fungi could thwart carbon capture efforts.* <http://www.newscientist.com/article/dn22228-fungi-could->

[thwart-carbon-capture-efforts.html](#)

Web: Interview by reporter Matthew Weaver for the Capital Press. *Exhibit unearths mysteries of soil* (2/23/2012):

2011

Web: *Wetlands of the Future*. YouTube video on research at the Global Change Research Wetland produced by the Smithsonian Institution. (has not been released).

2010

1. Web: Interview by columnist and blogger Melanie Kaplan for SmartPlanet (1/29/10):

<http://www.smartplanet.com/people/blog/pure-genius/ten-misconceptions-about-soil/1577/?tag=content;col1>

2. Briefing: Addressed congressional staff on the topic of *Resilient Wetlands = Prosperous Economies*. Organized by the Environmental Law Institute, US Capitol Visitor Center (5/19/10)

3. Radio: The Salt Marsh of the Future is HERE, NOW!. Audio piece by Sabri Ben-Achour on WAMU radio (aired 10/4/10). <http://wamu.org/news/10/10/04.php#37706>

4. Briefing: Presented congressional staffer Jason Grey an overview of SERC. SERC (10/5/10)

5. Web: Interview by reporter Jane O'Brien for the BBC. *The world's longest running carbon dioxide experiment* (11/4/2010): <http://www.bbc.co.uk/news/world-us-canada-11685516>

6. TV: Interview by reporter Tyler Suiters for ABC program *EnergyNow!* (12/12/2010):

<http://www.energynow.com/video/2010/12/11/cancun-wrap-daryl-hannah-and-co2-experiment>

2009

1. TV: Interviewed about *Dig It!* by Fox Morning News (Aired Live 3/3/09):

http://www.myfoxdc.com/dpp/mornings/holly_live/030309_holly_morris_dig_it_secrets_of_soil

2. TV: Interviewed about *Dig It!* for the American Institute of Physics series *Discoveries and Breakthroughs Inside Science* (3/2009):

<http://www.ivanhoe.com/science/story/2009/03/552a.html>

3. Web: *Climate Change Found To Have Paradoxical Effects In Coastal Wetlands*, Science Daily (3/26/09):

<http://www.sciencedaily.com/releases/2009/03/090323212035.htm>

4. Web: *Mixed News For Marshes* by Liz Kalaugher, Environmental Research Web (4/1/09):

<http://environmentalresearchweb.org/cws/article/research/38528>

5. Web: *Marsh Attacks* by Anna Barnett, *Nature Reports* (4/9/09):
<http://www.nature.com/climate/2009/0905/full/climate.2009.32.html>

6. Web: *Climate Change Creates Paradox for Wetlands*, *Environmental Science & Technology Online News* by Noreen Parks (4/22/09)

7. Radio: *The Bubble City* by Tom Pelton, public radio stations WYPR, WYPO and WYPF (aired 4/29/09). <http://www.wypr.org/EnvironmentFocus.html>

8. Newspaper: *Waist-deep in fieldwork* by Timothy B. Wheeler, *The Baltimore Sun* (9/29/09)
<http://www.baltimoresun.com/features/green/bal-md.gr.climate26sep29,0,5893905.story>

2008

1. Newspaper: *Role Call* on the *Dig It!* exhibit (published 7/24/08)
2. Newspaper: *The Capital* on the *Dig It!* exhibit (published 7/27/08)
3. Newspaper: *Associated Press* on the *Dig It!* exhibit (press release on 7/19/2008)
4. Magazine: *Crop, Soils and Agronomy News* on the *Dig It!* exhibit (published 9/2008)
5. Magazine: *Time for Kids* magazine on the *Dig It!* exhibit (published 9/12/08)
6. Magazine: *Environmental Science & Technology* on wetland carbon sequestration (9/26/08)

2007

1. TV: Interviewed by Howard Bernstein reports on WUSA morning news at a ceremony celebrating the creation of a soil monolith (intact slice of soil) that will represent DC in the upcoming SI-NMNH exhibition on soils (Aired 4/23/07). It covered an Earth Day event that featured the USDA Secretary of Agriculture:

http://www.wusa9.com/news/news_article.aspx?storyid=57856

2. Radio: Interviewed by a BBC radio program called "leading Edge" (Aired 12 Jul 2007):
<http://www.bbc.co.uk/radio4/science/leadingedge.shtml>

3. Video: Featured as the Lead Curator in a promotional video produced by the Fertilizer Institute on the Smithsonian Soils Exhibit: <http://www.nutrientsforlife.org/>

4. TV: Smithsonian on Demand feature on elevated CO₂-N experiment

Teaching and Mentoring

Courses

- General Ecology (undergraduate)
- Wetland Ecology (graduate)
- Global Change Seminar (graduate)
- Soil Biogeochemistry (graduate)

Graduated Students (PM as the Major Advisor or Co-Advisor)

2018	Scott Pitz, Ph.D. Candidate	Johns Hopkins University, MD
2017	Kyle Derby, M.S.	University of Maryland, MD
2016	Justin Meschter, M.S.	University of Maryland, MD
2006	David Bailey, M.S.	The College of William & Mary (VIMS)
2004	Kristy Garnett, M.S.	George Mason University
2002	Stephanie Backer, M.S.	George Mason University
2002	Johanna Weiss, Ph.D.	George Mason University
2001	Jeffrey Cornell, M.S.	George Mason University
1999	Cheryl Vann, M.S.	George Mason University

Graduate Interns

2016	Natalie Nelson
2021	Mackenzie Taggart

Current Students as Committee Member

Efemena Emmanuel, PhD Candidate, University of Toledo, OH

Past Student Committee Member (18 total; reverse chronology)

Alex Smith, PhD Candidate, Virginia Institute of Marine Science, VA
 Brian Scott, PhD Candidate, University of Maryland, MD
 Anna Kottkamp, MS Candidate, University of Maryland, MD
 Jenny Allen, Ph.D. Candidate, University of Maryland, MD
 Benjamin Duval, Ph.D. Candidate, Northern Arizona University, AZ
 Christian Hauser, MS Candidate, The College of William & Mary (VIMS)
 Lisa Craig, Ph.D. Candidate, University of Maryland, College Park, MD
 Christina Powell, Ph.D. Candidate, Wright State University, OH
 James Martin, Ph.D. Candidate, George Mason University, VA
 Alisha Pagel, PhD Candidate, Old Dominion University, VA
 Karen Phemister, M.S. Candidate, University of Maryland, College Park, MD
 Patrick Morton, M.S. Candidate, University of Maryland, College Park, MD
 Molly Roggero (Mitchell), M.S. Candidate, The College of William & Mary (VIMS)
 Rebecca Arenson, M.S. Candidate, The College of William & Mary (VIMS)
 Chai Lim, Ph.D. Candidate, Computational Sciences and Informatics
 Terry Slonecker, Ph.D. Candidate, George Mason University
 Alexander Wooten, Ph.D. Candidate, George Mason University
 Jennifer Morse, M.S. George Mason University, VA
 Patrick Dougherty, Ph.D. Candidate, George Mason University, VA
 Traci Guynup, Ph.D. Candidate, George Mason University, VA
 Nick Moghari, Ph.D. Candidate, George Mason University, VA

Undergraduate Directed Studies

1999	Sonya Washington
1998	Clair Carroll
1998	Tran Nguyen

1997 Jeri Thomas
1997 Johanna Weiss
1996 Helen Budnick

Undergraduate Interns (*under-represented; †publication)

2021 *Cyd Melendez-Munoz, Rider University
2021 Genevieve DeMajistre, Saint Johns College
2021 Minjee Jung, Northwestern University
2020 *Ana Roden, University of Wisconsin (NSF-REU) (MS)
2019 Lainey Reed, Cornell University
2019 Allegra Tashjian, Carleton College (NSF-REU) (PhD)
2018 Maya Bhalla-Ladd, Bryn Mawr College
2018 Madeline Peterson, Bennington College (NSF-REU)
2018 Chris Adkinson, University of Texas San Antonio (MS)
2018 Nicoletta Brazzola, Eberhard Karls Universität Tübingen
2017 Audrey Geise, West Virginia University (NSF-REU) (PhD)
2017 Maya Bhalla-Ladd, Bryn Mawr College
2017 Helena Kleiner, Grinnell College (MS)
2016 Sarah Freda, Bryn Mawr College
2016 Eliza Bonner, Cornell University
2016 Charlie Mettler, Wabash College (NSF-REU)
2016 *Jason Swartz, McDaniel College (NSF-REU)
2015 Yaamini Venkataraman, UC San Diego (NSF-REU)
2015 Emily Geoghegan, Bryn Mawr College
2015 *Moises Umanzor, University of Maryland (NSF-REU)(MS)
2014 Brendan Kelly, Villanova University (NSF-REU)(MS)
2014 *Andrew Sample, University of Arkansas (NSF-REU)
2013 Rachel Hager, Bryn Mawr University, PA (NSF-REU)(MS)
2013 Kyle King, Roanoke College, VA (NSF-REU)
2013 Catherine Pannier, Warren Wilson College
2012 Jessica Mosolf, Chapman University, CA (NSF-REU)
2011 Stephanie Sharuga
2011 Shannon Hagerty, Villanova University, PA
2011 Fred Teasley, University of Maryland, MD (MS)
2011 *Lillian Aoki, Cornell University, NY (NSF-REU)(PhD)
2010 Matthew Seal, University of Southern Mississippi, MI (NSF-REU)
2010 *Susanna Gomez, Virginia Tech, VA (NSF-REU)
2009 Rachel Koch†, University of Notre Dame, IN
2009 Katie Shepard, Villanova University, Philadelphia, PA
2009 *David Gonzales, University of California-Irvine, CA (NSF-REU)
2008 Nicolas Mudd, Frostburg State University, MD
2008 Kevin White, University of Pennsylvania, PA (NSF-REU)(PhD)
2008 Andrea Martin, University of North Carolina, Chapel Hill, NC
2008 Allyson Bullock, California State University, San Marcos, CA

2008 *María Clemencia-Cerón, Universidad de los Andes, Bogotá
 2007 Kyle Chambers, Ohio State University, OH
 2007 Katie Drumm, Kalamazoo College, MI
 2007 Eric Pfoust, Salisbury State University, MD
 2007 Emma Sage, Hampshire College, MD (NSF-REU)
 2007 Andrea Martin, University of North Carolina, Chapel Hill, NC
 2007 †Pamela Weisenhorn, Louisiana State University, LA (PhD)
 2007 *Lucinda Attakumah, University of Maryland (NSF-REU)
 2007 *†Julio Romero, University of New Mexico, Albuquerque, NM (NSF-REU)
 2007 Parker Kraus, Colorado College, CO
 2006 Emma Sage, Hampshire College, MD (NSF-REU)
 2006 *Lucinda Attakumah, University of Maryland (NSF-REU)
 2005 Tera Levin, Oberlin College, OH (NSF-REU)
 2005 Robin Larkin, Saint Mary's College, MD (NSF-REU)
 2004 *Carlos Panterjo, University of Puerto Rico-Arecibo
 2003 Sanpisa Sritairat, Rensselaer Polytechnic Institute, NY
 2003 Amber Boles, Warren Wilson College, NC
 2003 *†Gloried Toledo-Duran, Univeristy of Puerto Rico-Arecibo (PhD)
 2002 Mary Shockley (now Rogalski), William and Mary College, VA (NSF-REU)(PhD)
 2002 James Maltese, Harvard University, MA
 2002 †SaraKeith Valentine, Warren Wilson College, NC
 2001 Sandra Smith, Shippensburg State University, PA (NSF-REU)
 2001 Kimberly Givler, Northern Arizona University, AZ

Undergraduates Employed in Research

2014-2016 Thomas Lanier, Towson University, MD
 2005 David Bates, Frostburg State University, MD
 2005-2010 Nicolas Mudd, Frostburg State University, MD
 2000 Shamus Goss, George Mason University
 2000 Priyanka Shukla, George Mason University
 2000 Gary Stone, George Mason University
 2000 John Vandervoort, George Mason University
 2000 Shiva Rajaram, George Mason University
 2000 Rebecca Moss, George Mason University
 2000 Andrew Nguyen, George Mason University
 2000 Scott Fanello, George Mason University
 1998-1999 Angela Dodson, George Mason University
 1999 Jessica Arant, George Mason University
 1997-1998 James Nolen, George Mason University
 1997-1998 Patrick Auben, George Mason University

Research Associates with Bachelors or Masters Degrees

2023- Max Wegnar
 2023- Michael Cólón

2022-	Melanie Baugher
2021-	Erin Fien Clark (MS→PhD)
2021-	Lani DuFrense
2021-2022	Rylee Rawson
2020-	Alice Stearns
2020-	Mikayla Manyin
2019-	Satya Kent (BS→PhD)
2019-2020	Adam Dunn (BS→MS)
2018-2019	Johanna Hripto (BS→MS)
2018-2020	Helena Kleiner (BS→MS)
2017-	Evan Phillips
2017-2018	Kyle Derby (MS)
2017-2018	Anna Lienesch
2017-2018	Nicati Rabidoux
2016-2017	Melissa Day
2016-2017	Evan Phillips
2016-2017	Janelle Whitman
2014	Jack Hays
2010-present	Andrew Peresta
2012-2014	Fred Teasley (BS→MS)
2010-2012	Nicholas Mudd
2008-present	Allyson Bullock
2005-2008	Marc Sigrist
2005	Ron Ortel
2002-2003	Mei Mei Chang
2001-2003	Laura Lipps
2000-2004	Amelia Wolf (BS→PhD)
1998-2000	Lynn Kristinson
2000-2003	Kimberly Givler
1997-2000	Kristin Fitzgerald

Post-Doctoral Research Associates

2022	Dr. Jaehyun Lee
2022-	Dr. Stephanie Wilson
2019-	Dr. Anya Hopple
2017-2018	Dr. Paul Brewer
2017-2020	Dr. Teri O'Meara
2016-2023	Dr. Genevieve Noyce
2016-2019	Dr. Andrew Pinsonneault
2015-2023	Dr. James Holmquist
2014-2018	Dr. Sunghyun Kim
2014-2016	Dr. Grace Cott
2014-2016	Dr. Lisa Schile
2013-2018	Dr. Meng Lu

2013-2016	Dr. Blanca Bernal
2012-2013	Dr. Lisa Schile
2009-2012	Dr. Thomas Mozdzer
2008-2010	Dr. Ariana Sutton-Grier
2006-2008	Dr. Jason Keller
2006-2008	Dr. Duncan McKinley
2005-2010	Dr. Adam Langley
2004-2005	Dr. Karen Carney
2001	Dr. Vladimir Samarkin
2000-2004	Dr. Scott Neubauer
1999-2000	Dr. Bill Kornicker
1997-2000	Dr. Arlene Darke