

Ariana E. Sutton-Grier

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Research Interests

Ecosystem ecology and restoration, wetland ecology and conservation, biodiversity and ecosystem function, ecosystem services and environmental markets, biogeochemistry, climate change, coastal science and policy, coastal resilience, nature and human health linkages

Education

- 2008 Ph.D. in Ecology. Nicholas School of the Environment, **Duke University**, Durham, North Carolina. (Professor Curtis Richardson, adviser)
- 2000 Honors B.S. in Environmental Science, *Summa Cum Laude*.
Honors B.A. in International Studies, *Summa Cum Laude*.
Oregon State University, Corvallis, Oregon (Professors Jane Lubchenco and Bruce Menge, Honors Thesis advisers)
- 1997-1998 Direct Exchange Study Abroad Program, **Université Jean Moulin III**, Lyon, France

Appointments

- 2014-Present Research Faculty, Cooperative Institute for Climate and Satellites, Earth System Science Interdisciplinary Center, University of Maryland and Ecosystem Science Adviser, National Ocean Service, National Oceanic and Atmospheric Administration
- 2012-2014 Environmental Scientist, National Oceanic and Atmospheric Administration, National Ocean Service
- 2010-2012 AAAS Science and Technology Policy Fellow, National Oceanic and Atmospheric Administration, Office of Habitat Conservation
- 2009-2011 NSF FIRST IV (Faculty Institutes for Reforming Science Teaching) Postdoctoral Scholar
- 2008-2010 Smithsonian Research Fellow, Smithsonian Environmental Research Center
- 2007-2008 American Association of University Women (AAUW) Doctoral Fellow
- 2003-2006 National Science Foundation (NSF) Graduate Fellow

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Publications

*Denotes undergraduate, post-baccalaureate, or graduate student mentee

+Denotes co-first authored publication

Howard, J., **A.E. Sutton-Grier**⁺, D. Herr, J. Kleypas, E. Landis, E. Mcleod, E. Pidgeon, S. Simpson. In Press. Clarifying the role of coastal and marine systems in climate mitigation. *Frontiers in Ecology and Environment*.

Polefka, S. and **A.E. Sutton-Grier**⁺. 2016. Making ecosystem services part of business as usual in federal governance. *Frontiers in Ecology and Environment*. 14(4):175. DOI: 10.1002/fee.1267.

Sutton-Grier, A.E. and A. Moore. 2016. Leveraging Carbon Services of Coastal Ecosystems for Habitat Protection and Restoration. *Coastal Management*. Coastal Management. 44(3):259-277. DOI: /10.1080/08920753.2016.1160206.

*Wylie, L., **A.E. Sutton-Grier**, and A. Moore. 2016. Keys to Successful Blue Carbon Projects: Lessons Learned from Global Case Studies. *Marine Policy*. 65:76-84. DOI: 10.1016/j.marpol.2015.12.020.

Sutton-Grier, A. E., E. Rauschert and J. Momsen. 2016. Using Discussion to Promote Learning in Undergraduate Biology. *Bulletin of the Ecological Society of America*. 91(1):102-110.

Funk, J.L, J.E. Larson, G.M. Ames, B.J. Butterfield, J. Cavender-Bares, J. Firn, D.C. Laughlin, **A.E. Sutton-Grier**, L. Williams and J. Wright. 2016. Revisiting the Holy Grail: using plant functional traits to understand ecological processes. *Biological Reviews*. DOI: 10.1111/brv.12275.

Sandifer, P., **A.E. Sutton-Grier**⁺, and B. Ward. 2015. Exploring connections among nature, biodiversity, ecosystem services, and human health and well-being: Opportunities to enhance health and biodiversity conservation. *Ecosystem Services*. 12:1-15. DOI: 10.1016/j.ecoser.2014.12.007.

Sutton-Grier, A.E., K. Wowk, H. Bamford. 2015. Future of Our Coasts: The Potential for Natural and Hybrid Infrastructure to Enhance the Resilience of Our Coastal Communities, Economies and Ecosystems. *Environmental Science and Policy*. DOI: 10.1016/j.envsci.2015.04.006.

Schaefer, M., E. Goldman, A. Bartuska, **A.E. Sutton-Grier**, and J. Lubchenco. 2015. Nature as Capital: Advancing and Applying Ecosystem Services in U.S. Federal Policies and Programs. *Proceedings of the National Academy of Sciences*. 112:7383-7389. DOI: 10.1073/pnas.1420500112.

Richardson, C.J., G. Bruland, M. Hanchey, and **A.E. Sutton-Grier**. 2015. Ch. 19. Soil Restoration: The foundation of successful wetland reestablishment. *In Wetland Soils: Genesis, Hydrology, Landscapes, and Classification*, 2nd Ed. Vepraskas and Craft (Eds).

Arthur, C., **A.E. Sutton-Grier**⁺, P. Murphy, and H. Bamford. 2014. Out of sight but not out of mind: Harmful effects of derelict traps in selected U.S. coastal waters. *Marine Pollution Bulletin*. 86(1-2):19-28. DOI: 10.1016/j.marpolbul.2014.06.050

Sandifer, P. and **A.E. Sutton-Grier**. 2014. Connecting Stressors, Ocean Ecosystem Services, and Human Health. *Natural Resources Forum*. 38:157-167. DOI: 10.1111/1477-

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8947.12047.

Sutton-Grier, A.E., A. K. Moore, P.C. Wiley, and P.E.T. Edwards. 2014. Incorporating ecosystem services into the implementation of existing U.S. natural resource management regulations: The case for carbon sequestration and storage. *Marine Policy*. 43:246-253. DOI: 10.1016/j.marpol.2013.06.003.

Pendleton, L.H., **A.E. Sutton-Grier**⁺, D.R. Gordon, B.C. Murray, B.E. Victor, R.B. Griffis, J.A.V. Lechuga, and C. Giri. 2013. Considering “Coastal Carbon” in Existing U.S. Federal Statutes and Policies. *Coastal Management*. 41:439-456. DOI: 10.1080/08920753.2013.822294.

Sutton-Grier, A.E., J. Wright, and C. Richardson. 2013. Different plant traits affect two pathways of riparian nitrogen removal in a restored freshwater wetland. *Plant and Soil*. 365(1-2): 41-57. DOI: 10.1007/s11104-011-1113-3.

Edwards, P., **A.E. Sutton-Grier**, and *G. Coyle. 2013. Investing in Nature: Restoring Coastal Habitat Blue Infrastructure and Green Job Creation. *Marine Policy*. 38:65-71. DOI:10.1016/j.marpol.2012.05.020.

Wright, J. and **A.E. Sutton-Grier**. 2012. Does the leaf economic spectrum hold within local species pools across varying environmental conditions? *Functional Ecology*. DOI: 10.1111/1365-2435.12001.

Keller, J., **A.E. Sutton-Grier**, *A. Bullock, and J.P. Megonigal. 2012. Anaerobic metabolism in tidal freshwater wetlands: I. Plant removal effects on iron reduction and methanogenesis. *Estuaries and Coasts*. DOI: 10.1007/s12237-012-9527-6.

*Bullock, A., **A. E. Sutton-Grier**, and J.P. Megonigal. 2012. Anaerobic metabolism in tidal freshwater wetlands: III. Temperature regulation of iron cycling. *Estuaries and Coasts*. DOI: 10.1007/s12237-012-9536-5.

Emerson, D., W. Bellows, J. Keller, C. Moyer, **A.E. Sutton-Grier**, and J.P. Megonigal. 2012. Anaerobic metabolism in tidal freshwater wetlands: II. Effects of plant removal on Archaeal microbial communities. *Estuaries and Coasts*. DOI: 10.1007/s12237-012-9496-9.

Sutton-Grier, A.E., J. Keller, *R. Koch, C. Gilmour, and J.P. Megonigal. 2011. Electron donors and acceptors influence anaerobic soil organic matter mineralization in tidal marshes. *Soil Biology and Biochemistry*. 43: 1576-1583.

Sutton-Grier, A.E. and J.P. Megonigal. 2011. Plant species traits regulate methane production in freshwater wetland soils. *Soil Biology and Biochemistry*. 43: 413-420.

Sutton-Grier, A.E., J. Wright, *B. McGill, and C. Richardson. 2011. Environmental conditions influence the plant functional diversity effect on denitrification potential. *PLoS ONE* 6(2): e16584. DOI:10.1371/journal.pone.0016584.

*Unghire, J.M., **A.E. Sutton-Grier**, N. Flanagan, and C. Richardson. 2011. Spatial Impacts of Stream and Wetland Restoration on Riparian Soil Properties in the North Carolina Piedmont. *Restoration Ecology* 19 (6): 738-746. DOI: 10.1111/j.1526-100X.2010.00726.x.

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Brantley, S.L., J.P. Megonigal, F.N. Scatena, Z. Balogh-Brunstad, R.T. Barnes, M.A. Bruns, P. van Cappellen, K. Dontsova, H. Harntnett, T. Hartshorn, A. Heimsath, E. Herndon, L. Jin, C. K. Keller, J.R. Leake, W.H. McDowell, F.C. Meinzer, T.J. Mozdzer, S.Petsch, J. Pett-Ridge, K.S. Pregitzer, P. Raymond, C.S. Riebe, K. Shumaker, **A. Sutton-Grier**, R. Walter, and K. Yoo. 2011. Twelve Testable Hypotheses on the Geobiology of Weathering. *Geobiology*. DOI: 10.1111/j.1472-4669.2010.00264.x.

Rauschert, E., J. Dauer, J. Momsen, and **A.E. Sutton-Grier**. 2011. Primary literature across the undergraduate curriculum: teaching science process skills and content. *Bulletin of the Ecological Society of America*.

Sutton-Grier, A.E., M.A. Kenney, C.J. Richardson. 2010. Examining the relationship between ecosystem structure and function using structural equation modeling: A case study examining denitrification potential in restored wetlands. *Ecological Modelling*. 221:761-768.

*McGill, B.M., **A.E. Sutton-Grier**, and J. P. Wright. 2010. Plant trait diversity buffers variability in denitrification potential over changes in season and soil conditions. *PLoS One* 5(7): e11618. DOI: 10.1371/journal.pone.0011618.

Smith, Z. and **A. E. Sutton-Grier**⁺. 2010. Making the Most of Your Postdoc. *The Chronicle of Higher Education*. Published online July 16, 2010.

Sutton-Grier, A.E., M. Ho, and C.J. Richardson. 2009. Organic amendments improve soil conditions and denitrification in a restored riparian wetland. *Wetlands*. 29:343-352.

Kenney, M.A., **A.E. Sutton-Grier**, R. Smith, and S. Gresens. 2009. Benthic macroinvertebrates as indicators of water quality: the intersection of science and policy. *Terrestrial Arthropod Reviews*. 2(2): 99-128.

Freidenburg, T.L., B.A. Menge, P.M. Halpin, M. Webster, and **A.E. Sutton-Grier**. 2007. Cross-scale variation in top-down and bottom-up control of algal abundance. *Journal of Experimental Marine Biology and Ecology*. 347:8-29.

Sutton-Grier, A.E.⁺ and M.A. Kenney. 2005. Recruiters and Academia: A Class Act. *Nature*. 436: 886.

Grants Received

- National Academy of Sciences grant: “Modeling Stress-Associated Health Effects of Multiple Impacted Ecosystem Services in the Gulf of Mexico (2015-2016)
- NASA ROSES grant: “Linking satellite and soil data to validate coastal wetland “blue carbon” inventories: Upscaled support for developing MRV and REDD+ protocols” (2014-2017)
- NOAA Grant NA14NES4320003 Cooperative Institute for Climate and Satellites (2014-2016)
- Commission on Environmental Cooperation (CEC) North American Blue Carbon Community of Practice for Science and Policy Grant (2013-2015 and 2015-2017)
- National Academies Keck Futures Initiatives (NAKFI) Ecosystem Services Symposium (2011)
- Women Evolving Biological Sciences (WEBS) Symposium Travel Grant from the

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- National Science Foundation ADVANCE program. (2010)
- National Postdoctoral Association “National Summit on Gender and the Postdoctorate.” Conference Travel Grant from the National Science Foundation ADVANCE program. (2010)
- American Association of University Women American Fellowship. (2007-2008)
- National Science Foundation Doctoral Dissertation Improvement Grant. “The role of plant functional diversity in regulating nitrogen removal in a restored riparian wetland.” (2005-2008)
- National Science Foundation Graduate Research Fellowship. (2003-2006)
- Society of Wetland Scientists Student Research Grant. (2005)
- FORWARD to Professorship Washington, D.C. (Focus on Reaching Women for Academics, Research, and Development). Conference travel funding from the National Science Foundation ADVANCE leadership award. (2007)
- Sigma Xi Annual Conference Travel Grant Award. (2006)
- Oregon State University Research Innovation, Scholarship, Creativity Undergraduate Incentive Program Grant. (1999)

Professional Experience

Research Faculty, University of Maryland and National Oceanic and Atmospheric Administration Cooperative Institute for Climate and Satellites (July 2014-Present)

Duties: My research is focused on methods for strengthening coastal community resilience in the face of climate change with a specific focus on better understanding, measuring, and valuing coastal ecosystem services. Research projects include: 1) Synthesizing the state of our knowledge on the benefits provided by natural infrastructure (i.e., healthy coastal ecosystems) to help communities be more resilient to climate change, and identifying key research gaps that need to be filled in order to incorporate more natural infrastructure into policy and decision making; 2) Working to develop effective metrics of coastal resilience to inform the public and decision makers about climate change risks; and 3) Leading innovative science and policy NOAA efforts related to ecosystem services (including coastal blue carbon) and habitat conservation with the goal of making coastal communities more resilient to climate change by protecting and restoring natural ecosystem buffers.

Major Accomplishments:

- I am a co-PI on a NASA ROSES grant (2014-2017) working to link satellite and soils data to inform carbon dynamics to support international and national coastal policy including Reducing Emissions from Deforestation and Degradation (REDD+) protocols.
- I authored a paper comparing natural, hybrid, and built infrastructure for coastal resilience in *Environmental Science and Policy* which won the 2016 Ecological Society of America “Innovations in Sustainability Science” award and has been featured in two Capitol Hill briefings.
- I co-authored a paper on incorporating ecosystem services into U.S. federal policies and program in the *Proceedings of the National Academy of Sciences*.
- I authored a paper on the connections between nature, biodiversity, ecosystem services and human health and well-being in *Ecosystem Services*.
- I continue to lead NOAA’s blue carbon efforts including authoring a second grant from the CEC to support the North American Blue Carbon efforts.

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- I co-designed and co-taught ENSP 399: Climate Change – Coastal Resilience at University of Maryland, Spring 2015.
- I have mentored three undergraduate research projects (Hollings Scholar and two SESYNC fellows) and two master's student research projects (one current student).

Environmental Scientist, National Oceanic and Atmospheric Administration (NOAA), National Ocean Service (September 2012-Present)

Duties: My primary responsibilities were to work with the Chief Science Advisor, Deputy Assistant Administrator, and the Assistant Administrator of the National Ocean Service, and to work on NOAA's ecosystem science and ecosystem services portfolios. I provided scientific input and advice to NOS leadership to support science planning and execution, policy development, and decision making. Projects included: (1) Support NOAA's development of a Science Program as specified in the RESTORE Act for the Gulf of Mexico; (2) Lead NOS efforts to coordinate Sandy Supplemental activities in order to strengthen NOS' services to coastal communities related to event preparation and response, as well as long-term coastal resilience; (3) Developed collaborations for NOS with partners including academia; (4) Initiated and led NOAA or NOS teams related to ecosystem services (including coastal blue carbon) and NOS science and research; and (5) Served as NOS' Small Business Innovation and Research (SBIR) representative reviewing proposals for SBIR research grants.

Major Accomplishments:

- I authored two papers published in *Marine Policy* and *Coastal Management*, about operationalizing ecosystem services at NOAA, with a specific focus on coastal habitat carbon sequestration and storage.
- I co-authored a paper in the *Natural Resources Forum* about the impacts of environmental stressors on ocean and coastal ecosystem services, and the resulting negative human health impacts.
- I co-authored a paper in the *Marine Pollution Bulletin* on the negative impacts of derelict fishing traps to target and non-target species as well as coastal habitats.
- I continued to lead NOAA's blue carbon efforts including authoring a funded proposal from the Commission for Environmental Cooperation (CEC) to develop a North American (Canada, U.S., and Mexico) blue carbon community of research and practice.
- I was the primary editor and contributor to the NOS Sandy Supplemental Work Plan.
- Led NOS efforts to connect with the U.S. Naval Academy, including setting up student internship opportunities for summer 2014.

AAAS Science and Technology Policy Fellow, National Oceanic and Atmospheric Administration (NOAA), National Marine Fisheries Service (2010-2012)

Duties: My primary role as a fellow was to connect natural science and social science, via ecosystem services and environmental markets, to support NOAA policies and its habitat conservation mission. My responsibilities were shared between the National Marine Fisheries Service (NMFS) and the NOAA Headquarters Office of Policy. My duties included: (1) Lead, coordinate, and/or develop NOAA research projects and teams that explore innovative opportunities to use ecosystem services to promote habitat conservation, (2) Strengthen and advance NOAA research and programs related to ecosystem services, and (3) Provide critical scientific and technical assistance to the Office of Policy. My position

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allowed me independence, leadership experience, and the opportunity to influence programmatic and policy decisions.

Major Accomplishments:

- I established and led the NOAA Coastal Blue Carbon Team as it worked to incorporate the science and policy opportunities of coastal blue carbon into NOAA activities and policies.
- I established the interagency group on blue carbon coordinating the role of the federal family in blue carbon science and policy activities.
- I was the main author and editor of a report on the status of blue carbon and a strategic work plan for NOAA leadership that details the domestic and international science and policy opportunities related to how NOAA can use carbon services of coastal ecosystems for wetland habitat protection and restoration. The work plan is currently being implemented at NOAA.
- I helped develop, plan, and lead the Ecosystem Science Challenge Workshop (Nov 2011) focused on how NOAA ecosystem science research can better understand and forecast ecosystem services; I wrote the implementation section of the workshop report for NOAA leadership which will guide NOAA's ecosystem science research agenda for the next 5 years.
- I was the NOAA representative on the interagency Chesapeake Bay Environmental Markets Team working to support developing environmental markets including nutrient trading.
- I provided talking points and helped write speeches for NOAA Administrator, Dr. Jane Lubchenco.
- I reviewed and edited NOAA and interagency policies and strategic action plans to ensure policies incorporate the latest ecosystem science and address how to conserve and manage ecosystem services (i.e. NEPA guidance and the National Ocean Policy).
- I co-authored a paper on the job impacts of habitat restoration projects for coastal communities published in *Marine Policy* in 2012.

NSF-Sponsored Faculty Institutes for Reforming Science Teaching (FIRST IV) Postdoctoral Scholar (2009-2011)

Duties: I attended two weeks of teaching training on course design based on student learning objectives ("backwards design") and using best-practice teaching approaches, and then I co-designed and taught a class at Goucher College with other FIRST participants.

Major Accomplishments:

- I successfully applied and was hired as an adjunct faculty member at Goucher College co-teaching "BIO 240 Ecology and Evolution" for juniors and seniors in the Biology Department.
- I designed and taught the Ecosystem Ecology section with units on energy in ecosystems, biogeochemical cycles, global climate change, and restoration ecology.
- I received excellent student teaching evaluations.
- I co-designed and taught four teaching workshops at the annual meeting of the Ecological Society of America (2010-2014) on scientific teaching, using primary literature in the classroom, and how to use formative assessment to facilitate student learning.

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Smithsonian Environmental Research Center Postdoctoral Research Fellow (2008-2010)

Duties: I managed a NSF-funded research program in which I designed and conducted intensive field and lab research on the competition between iron-reducing and methane-producing microbes in tidal freshwater marshes to understand wetland greenhouse gas emissions and carbon sequestration.

Major Accomplishments:

- My research resulted in two first-authored and three co-authored publications.
- I supervised, trained, and mentored two undergraduate biology REU students and one lab technician in their own independent research projects which included final presentations to the SERC research community or at national scientific meetings and three peer-reviewed publications authored or co-authored by the mentees.

Wetland Ecology and Biogeochemistry Research Assistant, Instructor, and Mentor, Duke University (2002-2008)

Duties: I designed and conducted interdisciplinary research examining how wetland restoration techniques, including organic matter amendments and plant species diversity, affect the restoration of wetland ecosystem functions.

Major Accomplishments:

- My research resulted in four first-authored and four co-authored publications.
- I successfully obtained research grants and fellowships to fund my research and studies including the prestigious National Science Foundation (NSF) Graduate Research Fellowship, the NSF Doctoral Dissertation Improvement Grant, and the American Association of University Women Graduate Fellowship.
- I supervised over a dozen Masters students as well as one high school student and one undergrad in the lab.
- I mentored one independent research Master's project which resulted in a peer-reviewed first-authored publication for the student.
- I co-designed and co-taught an undergraduate class "Feminism and Ecology" as well as guest lecturing and TAing several courses; received very good teaching evaluations.
- I mentored three middle school girls for a PBS DragonflyTV "SciGirls" Episode.

Forest Biogeochemistry Laboratory Manager, Boston University (2000-2002)

Duties: I ran the biogeochemistry lab which included maintaining the lab and scientific instruments, developing a data archiving system for the lab, overseeing and coordinating multiple research projects simultaneously, and training others to perform nutrient analyses to determine element cycling in forest soil and plant samples including.

Major Accomplishments:

- Assisted in the development of a ^{15}N isotope dilution technique to measure gross rates of ammonium and nitrate production and consumption.
- Presented research results at the annual Ecological Society of America conference (2001).
- Trained over a dozen undergraduate workers in lab methods and safe lab

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procedures.

Coastal Intertidal Ecology Research Assistant, Oregon State University (Summer 1999)

Duties: Implemented a research project studying herbivores and algal abundance. Gathered data at low tides, analyzed photos using Adobe Photoshop and Image Analyst.

Major Accomplishments:

- Completed a senior thesis which was subsequently published in the Journal of Marine Experimental Biology and Ecology.

Honors and Awards

- Ecological Society of America Innovations in Sustainability Science Award for the paper, "Future of Our Coasts..." (2016)
- Ecological Society of America Early Career Fellow (2015-2019)
- U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Ocean Service, Assistant Administrator Special Recognition Group Award (2014)
- Ecological Society of America (ESA) Early Career Scientist Award (2012)
- Society of Wetland Scientists (SWS) Chair of the Global Change Section (2011-2012)
- ESA Academic Excellence Award for Young Women in Ecology, Honorable Mention (2010)
- Duke University Young Trustee Finalist (2009)
- American Association of University Women American Fellowship (2007-2008)
- 10th International Symposium on Wetland Biogeochemistry "Best Student Presentation" (2007)
- National Science Foundation Graduate Research Fellowship (2003-2006)
- Oregon State University Waldo Cummings Outstanding Senior Award (2000)
- OSU College of Science Outstanding Woman in Science Scholarship (1999)
- Oregon State University Oregon Laurels Scholar (1996-2000)

Teaching Experience

Socioenvironmental Synthesis "Towards Best Practices in Teaching and Research" Workshop Participant, University of Maryland Socioenvironmental Synthesis Center (SESYNC), Annapolis, MD. June 2016. This workshop focused on developing best practices for research and teaching socioenvironmental problems and solutions. We are working to develop several products from the workshop including peer-reviewed publications.

Teaching Workshop Instructor, Ecological Society of America Annual Meeting in Sacramento, CA. (August 2015). "Look who's talking! Using discussion as an effective learning tool." Co-Organizers: E. Rauschert and J. Momsen.

Faculty, University of Maryland, Environmental Science and Policy Program (Spring 2015).

Instructor: Co-designed and taught ENSP399R: Climate Change – Coastal Resilience. The

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class focused on helping students develop important science policy skills including policy memo writing, giving short, succinct presentations, and asking critical questions, while also developing a foundation of knowledge about the threats coastal ecosystems and communities face with rising sea levels, extreme events, and ocean acidification and how communities can become more resilient in the face of these threats. Received excellent student evaluations (well above average for the ENSP department at UMD).

Faculty, University of Maryland, Conservation Master's Program (Spring 2015).

Instructor and Adviser: CONS 798: Research Credits for Conservation Master's Program. I advised one student on her final research project for her Master's degree which focused on synthesizing all of the peer-reviewed literature on the carbon sequestration, storage, and emissions for coastal salt marsh, mangroves, and seagrasses in the continental U.S.

Teaching Workshop Instructor, Ecological Society of America Annual Meeting in Sacramento, CA. (August 2014). "You're reading what?!? Using journal articles as teaching tools to enhance student learning." Co-Organizer: E. Rauschert.

Teaching Short Course Participant, University of Maryland Socioenvironmental Synthesis Center (SESYNC), Annapolis, MD. July 2014. "Teaching Socio-Environmental Synthesis with Case Studies." Co-developed the case study, "When it rains, it pours: A socioenvironmental approach to understanding coastal flooding." (available online at sesync.org)

Teaching Workshop Instructor, Ecological Society of America Annual Meeting in Minneapolis, MN. (Summer 2013). "Got data? Visualizing and Manipulating Ecological Data Sets to Support Undergraduate Learning." Co-Organizers: J.L. Momsen, J. Dauer, J.M. Dauer, and E. Rauschert.

Teaching Workshop Instructor, Ecological Society of America Annual Meeting in Portland, Oregon. (Summer 2012). "Formative Assessment: Just Do It! Rapid Response to Undergraduate Feedback." Co-Organizers: and J. Dauer, E. Rauscher, and J.L. Momsen.

Teaching Workshop Instructor, Ecological Society of America Annual Meeting in Pittsburgh, Pennsylvania. (Summer 2011) "101 Ways to Effectively Use Journal Articles as Teaching Tools." Co-Organizers: E. Rauscher, J.L. Momsen, and J. Dauer.

Teaching Workshop Instructor, National Postdoc Association Annual Meeting in Bethesda, Maryland. (Spring 2011). "Scientific Teaching and Active Learning in Undergraduate Science." Co-Organizers: D. Ebert-May and A. Roark.

Teaching Workshop Instructor, Ecological Society of America Annual Meeting in Austin, Texas. (Summer 2010) "In Full Bloom: Using Bloom's Taxonomy to Align Class Learning Objectives and Assessments in Introductory Biology." Co-Organizers: J.L. Momsen, J. Dauer, and E. Rauscher.

NSF FIRST (Faculty Institutes for Reforming Science Teaching) IV Postdoctoral Scholar, (2009-2011), Training on course design based on student learning objectives

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("backwards design") and using best-practice teaching approaches, and then co-designed and taught a class at Goucher College with other FIRST participants; received excellent student evaluations.

Front Royal Smithsonian National Zoological Park (2010)

Guest Instructor: Global Carbon Cycle, Climate Change, and Wetlands

Adjunct Faculty, Goucher College Biology Department (Fall 2009)

Instructor: Co-designed and taught BIO 240 "Ecology and Evolution." Implemented the course with a focus on a learner-centered classroom, active learning, and alignment of learning objectives with course assignments and assessments. Received excellent student evaluations.

Duke University Women's Studies Department and Nicholas School of the Environment and Earth Sciences (2005)

Instructor: Co-designed and co-taught a multidisciplinary course about gender and the environment entitled "Feminism and Ecology." Implemented the course with a focus on student involvement using active learning techniques such as role-plays, discussions, and small-group activities. Received excellent student evaluations.

Duke University Nicholas School of the Environment and Earth Sciences (2006-2008)

Guest Instructor:

- Wetland Ecology and Management
- Wetland Restoration

Duke University Graduate School (2008)

The College Teaching Practicum: Developed four teaching demonstrations using different visual aids and active learning techniques that were recorded followed by a critical self-evaluation of each demonstration. Also observed and evaluated teaching presentations by peers.

Duke University Graduate School (2005-2006)

Preparing Future Faculty: Worked with two mentors, Professors Janice Swab and Elizabeth Wolfinger, at Meredith College to learn more about faculty life, responsibilities, and teaching. Guest lectured in the senior research seminar class.

Presentations

A. Invited Seminars

Sutton-Grier, A.E., P. Sandifer, K. Wowk, and H. Bamford. 2016. Global Change Impacts on Coastal and Ocean Ecosystem Services and Human Health and What We Can Do About It." Webinar for the Sustainable Adaptive Gradients in Coastal Environments (SAGE) NSF Research Coordination Network.

Sutton-Grier, A.E. 2016. "Policy Opportunities for Promoting Wetland Conservation and Coastal Community Resilience." Society of Wetland Scientists Annual Meeting, Corpus Christi, Texas.

Sutton-Grier, A.E. 2016. "Advancing Nature-Based Solutions to Coastal Erosion" Capitol

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Hill briefing, July 6, 2016. Washington, D.C.

Sutton-Grier, A.E. 2016. "Making Your Science Count: Science to Inform Policy and Decision Making." Society of Wetland Scientists Annual Meeting, Corpus Christi, Texas.

Sutton-Grier, A.E. 2016. "Future of our coasts: Potential for natural and hybrid infrastructure to calm troubled waters." Part of the session "Bridging Architecture: Extreme Weather and Troubled Waters in Coastal Cities" at the American Institute for Architecture Annual Conference, Philadelphia, Pennsylvania.

Sutton-Grier, A.E. 2016. "Future of Our Coasts: The Potential for Natural and Hybrid Infrastructure in an Urbanizing World." Atlantic Estuarine Research Society Spring Meeting Keynote Address, Virginia Beach, Virginia.

Sutton-Grier, A.E. 2015. "Shoring Up: Natural and Hybrid Infrastructure for Coastal Resilience." Capitol Hill Briefing, October 21, 2015. Washington, D.C.

Sutton-Grier, A.E. 2015. "Innovative Policy Opportunities for Wetland Conservation." Inaugural Society of Wetland Scientist (SWS) Webinar.

Sutton-Grier, A.E. 2015. "Future of our coasts: Potential for natural and hybrid infrastructure to enhance ecosystem and community resilience." Council of State Governments Eastern Regional Conference, Wilmington, Delaware.

Sutton-Grier, A.E. 2015. Coastal "Blue Carbon" Benefits of Natural Infrastructure: One More Reason to Love the Coasts!" Ecological Society of America Annual Conference, Baltimore, Maryland.

Sutton-Grier, A.E. 2015. "Innovative Policy Opportunities for Wetland Conservation and Climate Mitigation and Adaptation." Society of Wetland Scientists Wetlands and Climate Change Expert Panel Discussion, Providence, Rhode Island.

Sutton-Grier, A.E. 2015. "National and International Blue Carbon Policy Opportunities." Society of Wetland Scientists Annual Conference, Providence, Rhode Island.

Sutton-Grier, A.E. and A. Moore. 2015. "Climate and Coastal Resilience National Policy Opportunities for Blue Carbon." Capitalizing on Coastal Carbon workshop, Massachusetts.

Sutton-Grier, A.E. 2015. "Blue Carbon, Green Infrastructure, Biodiversity and Human Health: Science to Support Coastal Resilience." Environmental Science and Technology Departmental Seminar, University of Maryland, College Park, Maryland.

Sutton-Grier, A.E., A. Moore and A. McCarty. 2014. "Coastal Blue Carbon: Climate and Coastal Resilience National and International Policy Opportunities." American Geophysical Union Annual Conference, San Francisco, California.

Sutton-Grier, A.E., A. McCarty, A. Moore, E. Tewes, K. Armstrong, Y. Lu, M. Morales, and D. Peters. 2014. "Blue Carbon: International Policy Analysis." Restore America's Estuaries and the Coastal Society Summit, National Harbor, Maryland.

Sutton-Grier, A.E. 2014. "What is Coastal Blue Carbon? A "win-win-win" for habitat conservation, coastal resilience, and climate mitigation." Managing Our Planet seminar

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series by George Mason University and the Wilson Center in Washington, D.C.

Sutton-Grier, A.E., A. Moore, P. Wiley, and P. Edwards. 2013. "Coastal Blue Carbon in U.S. Federal Policies: Opportunities and Science Needs." Presentation to the International Blue Carbon Scientific Working Group in Paris, France.

Sutton-Grier, A.E. 2013. "Environmental markets: Innovative conservation opportunities to manage human excess?" Participant in the Ignite Session Complementarity Considers Ecological Principles to Create Sustainable Pathways at the annual Ecological Society of America conference. Minneapolis, Minnesota.

Sutton-Grier, A.E., J. Wright, and C.J. Richardson. 2012. "Lessons from applying a trait based framework for predicting restoration success." Participant in the Revisiting the Holy Grail: Using trait-based ecology as a framework for preserving, utilizing, and sustaining ecosystems Symposium at the annual Ecological Society of America conference. Portland, Oregon.

Sutton-Grier, A.E., M. Muth, and R. Griffis. 2012. "NOAA Coastal Blue Carbon Policy Opportunities." Participant in the Coastal Blue Carbon Policy Symposium at the Society of Wetland Scientists annual meeting in Orlando, Florida.

Sutton-Grier, A.E., J. Wright, and C.J. Richardson. 2007. "Plant Functional Diversity and the restoration of riparian wetland ecosystem function." Participant in the Biodiversity and Ecosystem Restoration Symposium at the annual Ecological Society of America conference. San Jose, California.

Sutton-Grier, A.E., C.J. Richardson, and G.L. Bruland. 2007. "The Importance of Soil Processes for Effective Wetland Restoration." Keynote Address at Radford University's 2nd Annual Wetland Symposium. Radford, Virginia.

Sutton-Grier, A.E., C.J. Richardson, and G.L. Bruland. 2006. "Understanding Soil Processes: The Next Frontier of Wetland Restoration." World Congress of Soil Science conference. Philadelphia, Pennsylvania.

Sutton-Grier, A.E., M. Ho, J. Pahl, and C.J. Richardson. 2005. "Compost Use in Urban Restored Wetlands." BioCycle Southeast Conference meeting. Charlotte, North Carolina.

Sutton-Grier, A.E. 2006, 2007. "TA Survival Skills: Getting the most out of your Teaching Assistantship." Invited panelist for Duke University Teaching IDEAS workshop.

B. Presentations

Sutton-Grier, A.E. 2015. "Future of our coasts: Potential for natural and hybrid infrastructure to enhance ecosystem and community resilience." Coastal and Estuarine Research Federation (CERF) Meeting, Portland, Oregon.

Sutton-Grier, A.E. and P. Sandifer. 2014. "Stressors Impacting Coastal and Ocean Ecosystem Services and Human Health." A Community on Ecosystem Services (ACES) bi-annual conference, Crystal City, Virginia.

Sutton-Grier, A.E., P. Sandifer, and B. Ward. 2014. "Direct links between biodiversity and human well-being: Science needs to support win-win conservation and health

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opportunities.” Ecological Society of America Conference, San Jose, California.

Sutton-Grier, A.E. 2014. “Conserving Coastal Wetlands for Communities: Value of Coastal Blue Carbon Benefits and Policy Opportunities.” Social Coast Forum, Charleston, South Carolina.

Sutton-Grier, A.E., A. Moore, P. Wiley, P. Edwards, and L. Pendleton. 2013. “Operationalizing ecosystem services into existing U.S. natural resource management policies: The case for carbon sequestration and storage.” Ecological Society of America, Minneapolis, Minnesota.

Sutton-Grier, A.E., Kellee James, and Peter Edwards. 2011. “Environmental Markets: A tool to help conserve wetlands?” Society of Wetland Scientists, Prague, Czech Republic.

Sutton-Grier, A.E. and J. Patrick Megonigal. 2010. “The power of “Green” Energy: Plant trait influences on microbial competition and greenhouse gas production.” Ecological Society of America Conference, Pittsburgh, Pennsylvania.

Sutton-Grier, A.E. and J. Patrick Megonigal. 2010. “Plants rule, Microbes Drool: Plant trait effects on greenhouse gas production.” Society of Wetland Scientists conference, Salt Lake City, Utah.

Sutton-Grier, A.E., A. Bullock, J. Keller, C. Gilmour, and J.P. Megonigal. 2009. “Plant impacts on competition between tidal marsh microbes.” Ecological Society of America conference, Albuquerque, New Mexico.

Sutton-Grier, A.E., A. Bullock, J. Keller, C. Gilmour, and J.P. Megonigal. 2009. “Tidal marsh metabolism: ‘C’ how they run.” Society of Wetland Scientists conference, Madison, Wisconsin.

Sutton-Grier, A.E., J.Wright, S. Qian and C.J. Richardson. 2008. “Plant functional diversity and nitrogen removal in a restored riparian wetland.” Society of Wetland Scientists meeting, Washington, D.C.

Sutton-Grier, A.E., J.Wright, S. Qian and C.J. Richardson. 2007. “Plant Functional Diversity: A good Predictor of Denitrification and Plant Biomass Nitrogen?” 10th International Symposium on Wetland Biogeochemistry. Annapolis, Maryland.

Sutton-Grier, A.E., J.Wright, S. Qian and C.J. Richardson. 2006. “The role of plant species and functional diversity in the restoration of riparian wetland ecosystem functions.” Ecological Society of America conference. Memphis, Tennessee.

Sutton, A. E., D. Bradbury and A. C. Finzi. 2001. “Landscape-scale Variation in Soil Resources: Implications for Forest Composition.” Ecological Society of America meeting, Madison, Wisconsin.

Professional Development and Service

A. Mentoring Activities

- Mentor for a Master of Environmental Studies student at University of Charleston, South Carolina. 2016-2017.

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- Mentor for a Socioenvironmental Synthesis Center (SESYNC) fellow who worked on a case study about living shorelines projects in Maryland. 2016.
- Mentor for a NOAA Hollings Scholar who examined specific national coastal conservation projects with links to global climate mitigation policies or carbon financing. We are working to publish this study in a peer-reviewed journal. 2015.
- Mentor for a Socioenvironmental Synthesis Center (SESYNC) fellow who developed “Science on a Sphere” stories about coastal resilience and coastal blue carbon. 2015.
- Mentor for eight Masters students in the International Research Institute for Climate and Society at Columbia University. Projects examined international policy opportunities, and specific pilot projects in different countries, for incorporating coastal blue carbon to promote additional habitat conservation. 2014 & 2015.
- Mentor for a Masters of Sustainable Development and Conservation Biology Final Research Paper, Fall 2014-Spring 2015.
- Public Leadership Education Network (PLEN) Women & Science/Technology Policy Program Speaker, 2011-2015.
- Mentor for three NSF-sponsored REU students as they designed, analyzed and presented the results of independent research projects. 2008-2010.
- Girl Scouts of America “STEM Career Day” at the Smithsonian. I was interviewed by twenty middle school girls (in groups of 2-3) sharing my experiences as an ecologist. 2010.
- Durham Women and Math Mentor for two 8th grade girls. We participated in multiple field trips to explore how science and math influence our daily lives and career opportunities (including sewage treatment to basketball games). 2008.
- Duke University Graduate and Professional Women’s Network Advisory Board. I organized events for professional development for graduate students including events about how to run a scientific laboratory and tips to improve negotiating skills. 2006-2008.
- Mentor for four independent research projects (one Master’s student). Three mentees have published papers with two as first authors (see Unghire et al. 2010, McGill et al. 2010, and Sutton-Grier et al. 2011 above). 2007-2010.
- Duke University Women in Science and Engineering (WISE) Event Organizer. I planned events for graduate students including how to network and how to have productive professional relationships. 2007-2008.
- PBS Dragonfly TV “SciGirls” Mentor. I was the wetlands expert and mentor for three middle school girls on a kids’ science TV show while they performed wetland biodiversity surveys and explored what it was like to be an ecologist. (see my mentor profile at <http://pbskids.org/dragonflytv/scientists/scientist56.html>). 2006.
- Group Leader for N.C. State “Expanding Your Horizons” Math and Science Conference for 8th grade girls. I mentored middle school girls as they explored career options in math, science, and engineering, including running an interactive, hands-on workshop about how wetland soils improve water quality. 2004, 2005, 2007.

B. Other Service Activities

- Symposium Organizer. “Disasters, Degraded Ecosystem Services, and Human Health.” National Council for Science and the Environment conference, Washington, D.C. 2017.
- Socioenvironmental Synthesis Center (SESYNC) Scientific Review Committee Member,

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2016-present.

- A Community on Ecosystem Services (ACES) Planning Committee for the meeting in Florida in 2016.
- Organized Oral Session Organizer. Science at the Frontier of Understanding "Natural Infrastructure": Societal Benefits of Healthy Coastal Ecosystems. Ecological Society of America conference, Baltimore, Maryland. 2015.
- Symposia Co-Organizer. Blue Carbon: Tools and Demonstration Activities (Parts I and II). Society of Wetland Scientists conference, Providence, Rhode Island. 2015. Co-Organizers: S. Crooks and P. Megonigal.
- Planning Steering Committee Member and Organizer of two sessions on "Carbon Management and Decision Support" for the North American Carbon Program (NACP) Meeting, Washington, D.C. 2015.
- Symposium Organizer. The Promise of Blue Carbon – Climate Mitigation Services as a Potential Driver for Coastal Marine Habitat Restoration and Conservation. A Community on Ecosystem Services (ACES), Washington, D.C. 2014. Co-Organizer: S. Emmett-Mattox.
- Symposium Organizer. Coastal Blue Carbon: Policy Drivers and Coastal Blue Carbon: State of Science, Methodologies and Tools. Restore America's Estuaries Summit, Washington, D.C. 2014. Co-Organizer: A. Moore.
- Symposium Organizer. Coastal Blue Carbon: State of the Science, Tools, and Methodologies. Restore America's Estuaries Summit, Washington, D.C. 2014. Co-Organizer: A. Moore.
- Symposium Organizer. Blue Carbon, Green Opportunities: Innovative Solutions to Protect Coastal Ecosystems. Annual American Association for the Advancement of Science (AAAS) conference, Vancouver, B.C. 2012. Co-Organizers: Steve Emmett-Mattox and Steve Crooks.
- Symposium Organizer. Four joint symposia on the Science, Economics, Policy, and Management of Blue Carbon. Annual meeting of the Society of Wetland Scientists/Intecol joint meeting. Orlando, 2012. Co-Organizer: Pat Megonigal.
- Symposium Organizer. The evolving role of environmental scientists in informing sustainable ecosystem policy and management. Ecological Society of America Annual Meeting, Portland, 2012. Co-Organizer: Melissa Kenney.
- Co-organizer and participant in the NSF-Sponsored workshop "Frontiers in Exploration of the Critical Zone II: The Geobiology of Weathering and Erosion." Washington, D.C., 2009
- Symposium Organizer. Biodiversity and Restoration in a Changing World. Ecological Society of America Annual Meeting, San Jose, 2007. Co-Organizers: Justin Wright and Roberto Lindig-Cisneros
- Events Committee Chair of the Duke Chapter of Sigma Xi (2005-2008)
- Duke Representative at the National Conference on Graduate Student Leadership, 2007
- Duke University Commencement Committee (2006)
- Wetland Educator for the North Carolina Museum of Life and Science. I taught kids and adults what makes wetlands unique habitats and ecosystems using interactive activities. (2005-2006)
- Duke University, Nicholas School of the Environment and Earth Sciences, New Building Committee (2004-2006)

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C. Reviews for Scientific Journals

Examples include: Ecological Applications, Ecology, Biogeochemistry, BioScience, Journal of the North American Benthological Society, Wetlands, Journal of the Soil Science Society of America, Marine Policy, Soil Biology & Biochemistry

D. Professional Organizations and Affiliations

- American Association for the Advancement of Science
- Ecological Society of America
- Society of Wetland Scientists (SWS)
- American Geophysical Union

Articles and T.V. Specials featuring my work

- Popkin, G. 2015. "Breaking the Waves." *Science Magazine*. 350 (6262): 756-759.
- Mannix, H. 2015. "Briefing Debrief: 'Shoring Up' Scientists Share Their Perspectives On Visiting The Hill." COMPASS Blog post.
- Schuler, T. 2015. "The case for living coastlines." *Landscape Architecture magazine*, August 2015 edition.
- Wright, M. 2015. "Assigning Value to Nature at the Federal Level." *College of Math and Natural Sciences News*, University of Maryland.
- Biohabitats. 2015. "Socioeconomic benefits of coastal habitat restoration." *Leaf Litter Newsletter*.
- Carlson, D. 2015. "All (green) hands needed on deck-getting ready for sea level rise." *West Coast Environmental Law*.
- NOAA Press Release, 2015. "NOAA study finds marshes, reefs, beaches can enhance coastal resilience."
- Kinver, M. 2015. "Collaboration needed on nature and wellbeing links." *BBC News*.
- Making Waves National Ocean Service Podcast. 2014. "Coastal Blue Carbon." Episode 124.
- Gass, H. 2013. "Developing Rules to stop erosion of U.S. wetlands." *ClimateWire*.
- Grossman, E. 2012. "More jobs than coal, oil, and gas: Investing in the environment promotes economic growth." *The Pump Handle Science Blog*. (See <http://scienceblogs.com/thepumhandle/2012/09/04/more-jobs-than-coal-oil-and-gas-investing-in-the-environment-promotes-economic-growth-2/>)
- National Oceanic and Atmospheric Administration (NOAA) Video "Habitat Restoration: An Economic Engine." 2012. (See <http://www.youtube.com/watch?v=uMvM0yZbQSA>)
- Baker, B. 2011. "Having a Life in Science." *BioScience* 61: 429-433.
- Johns-Hopkins University Global Water Magazine, October 2010. "Four Lessons from Restoration Research." (see <http://globalwater.jhu.edu/magazine/article/193/>)
- Public Broadcasting (PBS) Dragonfly TV "Wetlands of North Carolina" Kids' science show, Spring 2007 (see <http://pbskids.org/dragonflytv/show/wetlands.html>)
- Duke Magazine "Plant Manager," July-August 2006
- News and Observer, Raleigh, NC. "Duke scholars work to restore wetlands-on campus" Aug. 22, 2005