1. Stephen Porder
Associate Professor and Co-Director of Graduate Studies
Dept. of Ecology and Evolutionary Biology

2. Providence, RI 02906

3. Stanford University Post Doctoral Fellowship
Geological and Environmental Sciences 2005-2006

Stanford University Ph.D. Biological Sciences 2005
Dissertation: Nutrient availability in tropical landscapes

U. Montana M.S. Geology 1997
M.S. Thesis: Metamorphism and metasomatism in the Lower Prichard Formation, Belt Supergroup, Montana.

Amherst College B.A. History 1994
Honors thesis: The Creation of the 14th State: Vermont's History Prior to Joining the Union

4. Assistant Provost for Sustainability Starting 7/1/18

Associate Professor of Ecology and Evolutionary Biology 2013-present
Brown University, Providence RI.

Assistant Professor of Ecology and Evolutionary Biology 2007-2013
Brown University, Providence RI.

5. a: Book Chapters

Porder, S., A. Bento, A. Leip, L.A. Martinelli, J. Samseth, T. Simpson. *2009*. "Toward an integrated assessment of biofuel technologies." Pages 227 - 242 in R.W. Howarth and S. Bringezu (eds) Biofuels: Environmental Consequences and Interactions with Changing Land Use. Proceedings of the Scientific Committee on Problems of the Environment (SCOPE) International Biofuels Project Rapid Assessment, 22-25 September 2008, Gummersbach Germany. Cornell University, Ithaca NY, USA. (http://cip.cornell.edu/biofuels/)

b: Manuscripts Submitted

BB Osborne*, MK Nasto, FM Soper, GP Asner, CS Balzotti, CC Cleveland, PG Taylor, AR Townsend, **S Porder**. (*submitted*). Leaf litter inputs reinforce islands of nitrogen fertility in a lowland torpical forest. Biogeochemistry.
Osborne is SP's Ph.D student. They conceived the project and wrote the paper..

Ryals, R.**, G. McNicol, **S. Porder** and S. Kramer. (*in revision*). Greenhouse gas fluxes from human waste management pathways in Haiti. Journal of Cleaner Production.
Ryals was an IBES postdoc. She, SP and Kramer conceived the project.

Hilley, G. E., **S. Porder**, F. Aron, C.W. Baden, S.A. Johnstone, F. Liu, R. Sare, A. Steelquist, and H.H. Young (*in revision*) A Maximum Limit on Topographic Relief Revealed by Channel Steepness in Tropical Granitic Landscapes. *Nature Geosciences*.
GEH and SP conceived the project, which arose from their NSF proposal. They wrote the paper with help from coauthors.

c: Refereed Journal Articles

Soper, F.M., B. Sullivan, M. Nasto, B.B. Osborne*, D. Bru, C. Balzotti, P. Taylor, G. Asner, A. Townsend, L. Philippot, **S. Porder**, C.C. Cleveland (2018) Remotely sensed canopy nitrogen influences N2O emissions in a lowland tropical rainforest *Ecology*. doi.org/10.1002/ecy.2434
SP contributed to the experimental design and writing of the manuscript. The research took place in plots defined by Porder's Ph.D. student.

Winbourne, J.**, M. Harrison, B. Sullivan, S. Alvarez-Clare, S.R. Lins, M. Nasto, D. Piotto, M. Wong and **S. Porder** (*2018*). A new framework for evaluating estimates of symbiotic nitrogen fixation in forests. *American Naturalist. 192 (5) 618-629*. https://doi.org/10.1086/699828
Winbourne was SP's postdoc. They conceived and wrote the paper with MH.

Becknell, J.M.**, M. Keller, D. Piotto, M. Longo, M.N. dos-Santos, M.A. Scaranello, R.B.O. Cavalcante and **S. Porder** (*2018*). Landscape scale lidar analysis of aboveground biomass distribution in secondary Brazilian Atlantic Forest. *Biotropica.* DOI:10.1111/btp.12538
Becknell was SP's postdoc. They conceived and wrote the paper.

Winborne, J.B.**, A. Feng***, L. Reynolds***, D. Piotto, M.G. Hastings and **S. Porder** (*2018*). Nitrogen cycling during secondary succession in the Atlantic Forest of Bahia, Brazil. *Nature Scientific Reports* 8, 1377. DOI. 10.1038/s41598-018-19403-0
Winbourne was SP's postdoc. They conceived and wrote the paper. Feng and Reynolds were SP's undergraduate thesis students. They provided data and helped write the manuscript.

Becknell, J.M.**, **S.Porder**, S. Hancock, R. Chazdon, M. Hofton, J.B. Blair and J.R. Kellner (*2018*). Chronosequence predictions are robust in a neotropical

secondary forest but plots miss the mark. *Global Change Biology* DOI:10.1111/gcb.14036.
Becknell was Porder's postdoc. They conceived and wrote the paper with JRK.

Nagy, R.C.[*], **S. Porder**, P.M. Brando, E.A. Davidson, M. Figueira, C. Neill, S.Riskin* and S. Trumbore (*2017*). Soil carbon dynamics in soybean cropland and forests in Mato Grosso, Brazil. *JGR Biogeosciences* DOI:10.1002/2017JG004269
Nagy and Riskin were Porder's Ph.D students. Nagy and Porder wrote the paper with CN and ST.

Soper, F.M., P.G. Taylor, W.R. Wieder, S.R. Weintraub, C.C. Cleveland, **S. Porder** and A.R. Townsend. (*2017*). Modest gaseous nitrogen losses point to conservative nitrogen cycling in a lowland tropical rainforest watershed. *Ecosystems* doi:10.1007/s10021-017-0193-1.
SP is a PI on this grant and helped write the paper.

Roy, E.D.[**], E. Willig [***], P.D. Richards, L.A. Martinelli, F.F. Vazquez, L. Pegorini, S.A.Spera and **S. Porder** (*2017*). Little saturation of soil phosphorus sorption capacity even after three decades of intensive fertilization in Mato Grosso, Brazil. *Agriculture, Ecosystems and Environment* 249 (1):206-114 https://doi.org/10.1016/j.agee.2017.08.004.
Roy was SP's postdoc. They conceived and wrote the paper.

Neill, C, K. Jankowski, P.M. Brando, M.T. Coe, L.A. Deegan, M.M. Macedo, S.H.Riskin[*], **S. Porder**, H. Elsenbeer, and A.V.Krusche (*2017*). Surprisingly modest water quality impacts from expansion and intensification of large-scale commercial agriculture in the Brazilian Amazon-Cerrado Region.Tropical Conservation Science 10: 1-5. DOI: 10.1177/1940082917720669.
Riskin was Porder's Ph.D. student. She collected much of the data for this paper and SP helped write the manuscript.

Nasto, M. B. Osborne, Y. Lekberg, G.P. Asner, **S.Porder**, P. Taylor, A. Townsend and C.C. Cleveland (*2017*). Nutrient acquisition, soil phosphorus partitioning and competition among trees in a lowland tropical rainforest. *New Phytologist.* DOI 10.1111/nph.14494.
SP helped design the project and write the manuscript.

Nagy, R.C., E. Rastetter, C. Neill, and **S. Porder** (*2017*). Nutrient limitation in tropical secondary forests during different management practices. Ecological Applications. 27(3) 734-755. DOI 10.1002/eap.1478.
Nagy was SP's Ph.D. student. They conceived the project and wrote the paper.

Riskin, S.H., C. Neill, K. Jankowski, A.V. Krusche, R. McHorney, H. Elsenbeer, M. Macedo, D. Nunez, and **S. Porder**. (*2017*) Solute and sediment export from Amazon forest and soybean headwater streams. *Ecological Applications*. 27(1) 193-207.

Riskin was SP's PhD student. They (with CN) conceived the project, designed the sampling, and wrote the paper.

Osborne, B.B., M. Nasto, G. Asner, C. Cleveland, B. Sullivan, P. Taylor and **S. Porder** (*2017*) Climate, topography and organisms are hierarchical controls of soil N cycling in a neotropical lowland forest. *Ecosystems*. DOI:10.1007/s10021-016-0095-7.
SP is Osborne's Ph.D. advisor. They conceived of the project, collected samples, analyzed samples, and led the writing of the manuscript.

Balzotti, C., G.Asner, P.Taylor, R. Cole, B.Osborne, C. Cleveland, **S. Porder**, A.Townsend (*2016*) Environmental Controls on Canopy Foliar N Distributions in a Neotropical Lowland Forest. Ecological Applications 26(8) 2451-2464
SP helped conceive the project and write the manuscript.

Balzotti, C., G.Asner, P.Taylor, R. Cole, B. Osborne, C. Cleveland, **S. Porder**, A.Townsend (*2016*) Topographic Distributions of Emergent Trees in the Tropical Forests of the Osa Peninsula, Costa Rica. *Ecography*. DOI: 10.1111/ecog.02062.
SP helped conceive the project and write the manuscript.

Almaraz, M and **S. Porder** (*2016*) Measuring ecosystem nitrogen status: a comparison of proxies. *Biogeosciences* doi:10.5194/bg-2016-43. Almaraz was SP's PhD student. They conceived the study, did the analyses, and wrote the manuscript.

Roy, E.D, P. D. Richards, L.A. Martinelli, L.D. Coletta, S.R.M. Lins, F.F.Vasquez, E. Willig, L. K. VanWey, and **S. Porder** (*2016*). The Phosphorus "Tax" imposed by tropical soils is a barrier to increasing global food production. *Nature Plants*. doi 10.1038/nplants.2016.43.
Roy was SP's post doc. They conceived the project together and led the writing of the manuscript. Willig was SP's undergraduate thesis advisee

Bhaskar, R., **S.Porder,** P. Balvanera, and E.J. Edwards (2016). Ecological and evolutionary variation in community nitrogen use traits during tropical succession *Ecology* DOI 10.1890/15-1162.1
Bhaskar was SP's postdoc. SP helped design the project and write the manuscript.

Wolf, J., G Brocard, J. Willenbring, **S. Porder** and M. Uriarte (*2016*). Abrupt changes in forest height along a tropical elevation gradient dectected using airborne LiDAR. *Remote sensing* doi 10:3390/rs8100864
SP collaborated on the project design and writing of the manuscript.

McClintock, M., G. Brocard, J. Willenbring, Cooper Tamayo**, S. Porder** and J. Pett-Ridge (2015). Spatial variability of African dust in a montane tropical

landscape in Puerto Rico. Chemical Geology 412: 69-81.
The study relied heavy on samples collected and analyzed by Porder and his undergraduate advisee (C. Tamayo). SP also contributed to the writing of the manuscript.

Porder, S, A.H. Johnson, H.X. Xing, G. Brocard, S. Goldsmith and J. Pett-Ridge (*2015*). Linking geomorphology, weathering and cation availability in the Luquillo Mountains of Puerto Rico. Geoderma (249:100-110).
Porder and AHJ conceived the study, SP and GB analyzed the data, SP and AHJ wrote the manuscript. SG was SP's post doc.

Martins, S., M. Piccolo, D. Almeida, S. Vieira, L. Alves, E. Sousa Neto, J. Carmo, **S. Porder**, and L. Martinelli (*2015*). Soil attributes along an altitudinal gradient in the Atlantic Forest of southeast Brazil. *Geoderma Regional.* 5:106-115.
Porder provided data and contributed to the writing of the manuscript.

Nagy, R.C, **S. Porder**, C. Neill, P. Brando, R.M. Quintino, S.A.do Nascimento. (*2015*). Structure and composition of riparian forest fragments in an Agricultural Amazonian Landscape. Ecological Applications 25(6): 1725-1738.
Nagy was Porder's Ph.D. student. SP was involved in every aspect of experimental design, writing, and analysis for this manuscript.

Weintraub, S.R., P.G. Taylor, **S. Porder**, C.C. Cleveland and A.R. Townsend (*2015*). Topography controls soil nitrogen availability in lowland tropical forests. Ecology. doi: http://dx.doi.org/10.1890/14-0834.1
Porder contributed to the framing questions, analysis of data, and writing of the paper.

Sullivan, B.W., S. Alvarez-Clare, S.C. Castle, **S. Porder**, S.C. Reed, L. Schreeg, A. R. Townsend and C.C. Cleveland. (*2014*). Assessing nutrient limitation in complex forested ecosystems: alternatives to large-scale fertilization experiments. *Ecology*. 95(3): 668-681.
Porder contributed to the framing of the questions and writing of the manuscript. LS was Porder's post doc

Porder, S. (2014) Coevolution of life and landscapes. Proceedings of the National Academy of Sciences. 111(9):3207-3208.
www.pnas.org/cgi/doi/10.1073/pnas.1400954111

Schreeg, L. and **S. Porder** (*2014*). Weak exchange resins alter small-scale soil nutrient levels with minimal direct impact on other elements. Soil Biology & Biochemistry 71:113-116.
LS was Porder's post doc, they conceived the project and wrote the paper.

Riskin, S.H., **S. Porder**, C. Neill, M. Figueria, C. Tubbesing, and N. Mahowald (*2013*). The fate of phosphorus fertilizer in Amazon soybean fields. *Philosophical Transactions of the Royal Society B.* 368: 20120154.
Porder, CN and SR designed the research, SR carried out the analyses, SR, Porder and CN wrote the manuscript. SR co-advised by Porder and CN.

Mage, S. and **S. Porder** (*2013*). Parent material and topography drive soil P status across the Luquillo Mountains of Puerto Rico. *Ecosystems* 16: 284-294. DOI: 10.1007/s10021-012-9612-5. SP designed the research, SP and SM did the field work, SM carried out the analyses, Porder and SM wrote the paper.

Riskin, S.H., **S. Porder**, M.E. Schipanski, E.M. Bennett and C.Neill (*2013*). Regional differences in the environmental costs of high phosphorus- input soy agriculture. *BioScience*. 63: 49–54. ISSN 0006-3568.
Porder and SR designed the research, SR, MS carried out the analyses, SR and SP wrote the manuscript. SR was co-advised by Porder and CN.

S. Porder and S. Ramachandran (*2012*). The phosphorus content of common rocks - a potential driver of ecosystem P status. *Plant and Soil.* DOI 10.1007/s11104-012-1490-2.
Porder designed the research, SR carried out the analyses, Porder and SR wrote the manuscript.

Townsend, A.R. and **S. Porder** (*2012*). Agricultural legacies, food production and its environmental consequences. *Proceedings of the National Academy of Sciences.* 109 (16) 5917-5918. (Invited perspective).
AT and Porder contributed equally to the paper.

M.H. Tang**, S. Porder**, and G.Lovett (*2012*). Species differences in nitrate reductase activity are unaffected by nitrogen enrichment. *Forest Ecology and Management*. 275:52-59.
Porder designed the research, Porder and MT did the field work, MT did the analyses, Porder and MT wrote the paper. GL provided access to field sites.

Huth, T, J., **S. Porder**, J. Chaves and J. H. Whiteside (*2012*). Soil carbon and nutrient changes associated with deforestation for pasture in Southern Costa Rica. *Biotropica 44(5): 661-667* DOI 10.1111/j.1744-7429.2012.00863.x
Porder designed the research, TH, Porder and JC did the field work, TH did the analyses, Porder and TH wrote the paper. TH was Porder's MS thesis advisee, JC was Porder's post doc.

Porder, S, Lipson, D. and Harrison, R. (2012). Carbon stock changes in soil and aboveground biomass from house lot development in King County, Washington, USA. *Open Journal of Forestry*. DOI: 10.4236/ojf.2012.21001
Porder and DL designed the research. DL and RH did the field work.
Porder and DL wrote the paper, DL was Porder's undergraduate advisee.

Cleveland, C., A. Townsend, P. Taylor, S. Alvarez-Claire, M. Bustamante, G. Chuyong, P. Grierson, K.Harmes, B. Houlton, A. Marklein, W. Parton, **S. Porder**, S. Reed,, W. Silver, E. Tanner, and W. Wieder (2011). Revisiting nutrient limitation in tropical forests: the importance of nitrogen-phosphorus interactions. Ecology Letters. doi: 10.1111/j.1461-0248.2011.01658.x.
This paper came out of a working group. Porder was one of six main authors.

Hayhoe, S.J., C. Neill, **S. Porder**, R. McHomey, P. Lefebvre, M.T. Coe, H. Elsenbeer and A.V. Krusche (2011). Conversion to soy on the Amazonian agricultural frontier increases streamflow without affecting stormflow dynamics. Global Change Biology. doi: 10.1111/j.1365-2486.2011.02392.x.
SH, CN, Porder designed the research, SH carried out the field work and analysis, SH, Porder and CN wrote the paper. SH was co-advised by Porder and CN

Porder, S. and G.E. Hilley (2011). Linking chronosequences with the rest of the world - predicting soil phosphorus content in eroding landscapes. *Biogeochemistry*. 102:153-166. doi: 10.1007/s10533-010-9428-3.
Porder and GH designed the research, carried out the analyses and wrote the paper.

Townsend, A.R. and **S. Porder** (*2011*). Boundary Issues. Environmental Research Letters 6 doi:10.1088/1748-9326/6/1/011001 (Invited perspective).
Porder and AT contributed equally to the paper.
Peltzer, D.A., D.A. Wardle, V.J. Allison, T.W. Baisden, R.D. Bardgett, O.A. Chadwick, L.M. Condron, R.L. Parfitt, **S. Porder**, S.J. Richardson, B.L. Turner, P.M. Vitousek, J. Walker and L.R. Walker (2010). Understanding ecosystem retrogression. *Ecological Monographs* 80:509-529. doi:10.1890/09-1552.1.
Porder gathered data and contributed to the writing of the paper.

Hilley, G.E., C.P. Chamberlain, S.G. Moon, **S. Porder** and S.D. Willett (2010). Competition between erosion and reaction kinetics in controlling silicate weathering rates. *Earth and Planetary Science Letters*. doi:10.1016/j.epsl.2010.01.008.
This work came out a model designed during Porder's post doc with GH. Porder contributed to the writing of the paper.

Vitousek, P.M., **S. Porder**, B.Z. Houlton and O.A. Chadwick. (2010). Terrestrial phosphorus limitation: mechanisms, implications, and nitrogen-phosphorus interactions. *Ecological Applications*. 20(1): 5-15.
PV conceived the paper, all other co-authors contributed equally.

McAlpine, L. and **S. Porder** (2009). Evaluation of a large-scale invasive plant species herbicide control program in the Berkshire Taconic Plateau, Massachusetts, USA. *Conservation Evidence* 6: 117-123.
Porder and LM conceived the research, LM and SP did the fieldwork. LM and SP wrote the paper.

Palmer, M., M. Graves , T. Ladefoged , O.A. Chadwick , K. Duarte , **S. Porder**, P.M. Vitousek (*2009*). Sources of Nutrients to Windward Agricultural Systems in Pre-contact Hawai`i. *Ecological Applications* 19(6) 1444-1453.
Porder did sample analyses and contributed to the writing of the paper.

Porder, S. and O.A. Chadwick (*2009*). Climate and soil-age constraints on nutrient uplift and retention by plants. *Ecology* 90 (3): 623-636.
Porder conceived the research, analyzed the samples and date. Porder and OC wrote the paper.

Hilley, G.E. and **S. Porder** (2008). A framework for predicting global silicate weathering and CO_2 drawdown rates over geologic time. *Proceedings of the National Academy of Sciences* 105(44) 16855-16859.
doi/10.1073/pnas.0801462105.
GH and Porder conceived the project, built the model, and wrote the paper.

Bern, C.R., **S. Porder,** and A.R. Townsend. (2007). Erosion and landscape development decouple strontium and sulfur in the transition to dominance by atmospheric inputs. *Geoderma* 142: 274-284.
Porder contributed data and to the writing of the paper.

Porder, S., O.A. Chadwick and G.E. Hilley (2007). Chemical weathering, mass loss and dust inputs across a climate by time matrix in the Hawaiian Islands. *Earth and Planetary Science Letters* 258: 414-427.
Porder, OC, and GH conceived the research, carried out the field work, Porder did the analyses, and Porder, OC, and GH wrote the paper.

Porder, S., P.M. Vitousek, O.A. Chadwick, C.P. Chamberlain and G.E. Hilley. (2007). Uplift, erosion, and phosphorus limitation in terrestrial ecosystems. *Ecosystems* 10: 158-170.
Porder and GH conceived the research, did the analyses, and wrote the paper.

Porder, S., D.B. Clark, and P.M. Vitousek (2006). Persistence of rock-derived nutrients in the wet tropical forests of La Selva, Costa Rica. *Ecology* 87: 594-602.
Porder conceived the research, carried out field work and analyses. Porder, DC and PV wrote the paper.

Porder, S., G.P. Asner., and P.M. Vitousek (2005). Ground-based and remotely-sensed nutrient availability across a tropical landscape *Proceedings of the National Academy of Sciences* 102: 10909 - 10912.
Porder, GA, and PV conceived the project, Porder and GA did the analyses, Porder, GA and PV wrote the paper.

Porder, S., A. Paytan, and P.M. Vitousek (2005). Erosion and landscape development affect plant nutrient status in the Hawaiian Islands. *Oecologia* 142: 440 - 449.

Porder and PV conceived the project, Porder did the analyses, Porder and PV wrote the paper.

Vitousek, P., Chadwick, O., Matson, P., Allison, S., Derry, L., Kettley, L., Luers, A., Mecking, E., Monastra, V., and **S. Porder**. (2003) Erosion and the rejuvenation of weathering-derived nutrient supply in an old tropical landscape. *Ecosystems* 6: 762-772.
Porder did analyses that contributed to the paper.

Porder, S., Paytan, A. and E.A. Hadly (2003). Mapping the origin of faunal assemblages using strontium isotopes. *Paleobiology* 19 (2): 197-204.
Porder and EH conceived the project, Porder carried out analyses, Porder and EH wrote the paper.

d: Non-refereed journal articles

Porder, S. (2014). World changers 3.0. *Natural History Magazine* http://www.naturalhistorymag.com/features/232772/world-changers-30.

Porder, S. (2014). The tired arguments of warming deniers. Providence Journal March 9, 2014

Porder, S., L. Van Wey, L.A. Martinelli (2014). Brazil as a sustainable power. *Folha de Sao Paulo*. March, 2014.

Porder, S (2013) Iowa in the Amazon. *New York Times*, Nov. 23, 2013.

K.M.A. Chan, P.A.T. Higgins and **S. Porder** (2005). Protecting science from abuse requires a broader form of outreach. Public Library of Science 3 (7) e218.

Porder, S., K.M.A. Chan and P.A.T. Higgins (2004). Scientists must conquer the reluctance to speak out. Nature 431: p1046. (not peer reviewed)

Chan, KMA, **S. Porder** and P.A.T. Higgins (2004) Concern is more than just 'ruffled feathers' - If a government abuses science to justify its policies, scientists have a duty to speak out. Nature 428: p255. (not peer reviewed)

Porder, S. (2004) Science and policy - Uneasy partners. *Bioscience* 54(1) 6-7.

e: Abstracts

Osborne, B.B.*, M.K. Nasto, G.P. Asner, C.S. Balzotti, C.C. Cleveland, P.G. Taylor, A. Townsend and S. Porder (2017) Canopy nitrogen is correlated with litter and soil nitrogen in a lowland tropical forest. Ecological Society of America Annual Meeting.

Soper, F.M., M.K. Nasto, B.W. Sullivan, B.B. Osborne, S. Porder[4] and C.C. Cleveland (2017) Canopy foliar nitrogen heterogeneity influences denitrification rates in a tropical lowland forest. Ecological Society of America Annual Meeting.

Becknell, J[**]., M. Keller, D. Piotto, M. Longo, M. Nara dos-Santos, M.A. Scaranello and S. Porder (2017). Landscape-scale lidar analysis of aboveground biomass distribution in secondary Brazilian Atlantic Forest. Ecological Society of America Annual Meeting.

Winbourne, J., D. Piotto, W.J. Kress, and S. Porder (2017) Phylogenetic controls on symbiotic nitrogen fixation during secondary succession in the Atlantic Forest of Bahia, Brazil

Almaraz, M., P Groffman, W. Silver, S. Hall, L. Ruan, and S. Porder (2016). Soil oxygen mediates dinitrogen emissions from a wet tropical forest in Puerto Rico. Ecological Society of America Annual Meeting.

Townsend, A., C.C. Cleveland, G.P. Asner, **S. Porder,** P.G. Taylor, B. Osborne, M.K. Nasto, W.R. Weider and B. Sullivan (2015) One size does not fit all: multi-scale heterogeneity in the lowland tropical N cycle. Ecological Society of America Annual Meeting.

Almaraz, M., R. Ryals and **S. Porder** (2015) Dinitrogen emissions from agricultural soils increase over the growing season. Ecological Society of America Annual Meeting.

Nagy, R.C., **S. Porder**, P. Brando, E.Davidson, M. Figueira, C. Neill, S. Riskin and S. Trumbore (2015) Soil carbon stocks, age, and respired CO_2 from soybean fields and forests in Mato Grosso, Brazil. Ecological Society of America Annual Meeting.

Osborne, B., M. Nasto, G.P. Asner, C.C. Cleveland, B.S. Sullivan, P. Taylor, A.R. Townsend, and **S. Porder** (2015)Geomorphology and canopy chemistry influence soil nitrogen availability on variable time scales in a lowland tropical forest. Ecological Society of America Annual Meeting.

Roy, E.D**.**, P.D. Richards, L.A. Martinelli, L.D. Coletta, S.R.M. Lins, F.F.Vasquez, E. Willig[#], L.K VanWey, and **S. Porder** (2015) Closing yield gaps on tropical soils: The phosphorus cost of Brazil's soybean revolution. Ecological Society of America Annual Meeting.

Teller, A., R. Ryals and **S. Porder** (2015) Biochar and compost: Recycling between Chesapeake poultry and corn production while mitigating nutrient leaching losses. Ecological Society of America Annual Meeting.

S. Porder, G.E. Hilley, N. Chacon, S.T. Goldsmith, S. Kao, H. Lu, L.A. Martinelli and C. Restrepo. 2014. Biogeochemical variation among tropical forests spanning the global range of denudation rates. Ecological Society of America Annual Meeting.

Almaraz, M., H. Lu, S.T. Goldsmith and **S.Porder**, 2014. Landscape-scale variation in nitrogen cycling across the Luquillo Experimental Forest, Puerto Rico. Ecological Society of America Annual Meeting.

Nagy, R.C., **S. Porder**, C. Neill, P. Brando, S. Aves. 2014. Structure and composition of intact and fragmented riparian foress in an agricultural Amazonian Landscape. Ecological Society of America Annual Meeting.

Tamayo, C.D., G. Brocard, and **S. Porder**. 2014. Geomorphic influences on tropical soil weathering and nutrient status. Ecological Society of America Annual Meeting.

Almaraz, M, K.L.Tully, C. Palm, **S. Porder**, and C. Neill, 2013. Soil texture mediates nitrogen losses from intensifying agriculture in Sub-Saharan Africa. Ecological Society of America Annual Meeting.

Almaraz, M. and **S. Porder**, 2013. Measuring ecosystem nitrogen status: a comparison of proxies. American Geophysical Union Annual Meeting.

Goldsmith, S.T. , **Porder, S**., Kurtz, A., and Takaji, K., (2013), Evaluation of Shallow Flow Pathways and Relative Contributions to Solute Fluxes in a Tropical Small Mountainous River: Luquillo, Puerto Rico. *Geological Society of America Abstracts with Programs*. 45 (7), 216.

S. Porder and S. Mage (2012). Rock type and topography drive soil phosphorus status in the Luquillo Mountains of Puerto Rico. Ecological Society of America Meeting.

Lu, H, S. Mage and **S. Porder** (2012). Geological and biological influence on soil and foliar δ15N in the Luquillo Mountains of Puerto Rico. Ecological Society of America Meeting.

Hayhoe-Riskin, S.J., **S. Porder**, M. Schipanski, E. Bennett and C. Neill (2011). Industrial agriculture, soils, and the role of phosphorus. Ecological Society of America Meeting.

Tang, M. H., **S. Porder** and J. M. Melillo (2010). A survey of nitrate reductase activity in hardwood species in a northeastern temperate forest. Ecological Society of America Meeting.

Bateman, J. and **S. Porder** (2010). A bioassay for the Devil's element: Understanding phosphorus availability in soils. Ecological Society of America Meeting.

Huth, T.J., J. Chaves and **S. Porder** (2010). The effects of deforestation on soil and carbon nutrient stocks in a premontane rainforest of southern Costa Rics. Ecological Society of America Meeting.

Hayhoe, S.J., **S. Porder**, A.M. Figueira, and C. Neill (2010). The fate of phosphorus fertilizer in the soy fields of Mato Grosso, Brazil. Ecological Society of America Meeting.

Porder, S. and G.E. Hilley (2010). "What controls latitudinal gradients in ecosystem stoichiometry?" Ecological Society of America Meeting

Porder, S. and O.A. Chadwick (2009). " Plants and climate drive soil fertility over 350 kyr of weathering." Geological Society of America Annual Meeting.

Chaves, J. and **S. Porder** (2009). Inorganic and organic nitrogen losses from a montane tropical forest in Las Alturas, Costa Rica. Ecological Society of America Annual Meeting

Hayhoe, S.J., R. McHorney, C. Neill, **S. Porder**, and P. Lefebvre (2009). The effect of conversion to soy agriculture on hydrology in the Brazilian Amazon. Ecological Society of America Annual Meeting.

McAlpine, L.S. and **S. Porder** (2009). How effective are large-scale invasive species removal programs? A case study from the Berkshire/Taconic Plateau, western Massachusetts. Ecological Society of America Annual Meeting

Porder, S, J. Chaves, N. Chacon and G.E. Hilley (2009). Why does soil fertility differ between Costa Rica and Venezuela? Preliminary data from two distinct geomorphic provinces. Ecological Society of America Annual Meeting.

Porder, S. and G.E. Hilley (2008). The known knowns, known unknowns, and unknown unknowns of phosphorus availability in tropical ecosystems. Ecological Society of America Annual Meeting.

Porder, S., G.E. Hilley and O.A. Chadwick (2007). Phosphorus and cation losses as a function of soil age and climate in the Hawaiian Islands. Ecological Society of America Annual Meeting.

Porder, S. and G.E. Hilley (2007). Geologic control of nutrient availability in terrestrial ecosystems. Geological Society of America Annual Meeting.

Porder, S., G.E. Hilley, C.P. Chamberlain, O.A. Chadwick and P.M. Vitousek

(2006). Uplift, erosion, and phosphorus limitation in terrestrial ecosystems. Ecological Society of America Annual Meeting.

Porder, S., G.E. Hilley and O.A. Chadwick (2006). Climate and soil age constraints on nutrient uplift by plants. American Geophysical Union Annual Meeting.

Porder, S., G.P. Asner and P.M. Vitousek. (2005). Top down and bottom up determination of nutrient availability across a tropical landscape in Kaua'i, Hawai'i. Ecological Society of America Annual Meeting.

Porder, S., D.B. Clark, and P.M. Vitousek (2004).Nutrient variability across a lowland tropical forest at La Selva, Costa Rica. Ecological Society of America Annual Meeting.

Porder, S., E. Hadly, and A. Paytan. Reconstructing predator foraging habitats using strontium isotopes. Society of Vertebrate Paleontology Annual Meeting, October 2001.

Porder, S.J., Hyndman, D, and Copeland, P. (1997). Burial metamorphism of the lower Prichard Formation of the Belt Supergroup; petrology, thermobarometry, and geochronology. *Geological Society of America Abstracts w/Programs*, 29 (6), p408-409.

f: Invited Lectures

- Iowa State University. "Feeding 10 Billion". March 2018

- Columbia University. "Feeding 10 Billion". April 2017

- American Geophysical Union Annual Meeting. "Feeding 10 Billion". Dec 2016

- University Sao Paulo "Nitrogen biogeochemistry through time". August 2016

- BioNES conference Roger Williams University. "World Changers 3.0". December 2014.

- Arizona State University. "Baby steps towards a predictive model of nutrient limitation in terrestrial ecosystems." March 2012.

- Indiana University Perdue University Indianapolis (IUPUI). "Geologic controls of phosphorus availability in terrestrial ecosystems. October 2011.

- Columbia University. "Geologic controls of phosphorus availability in terrestrial ecosystems." April 2011

- Cary Institute of Ecosystem Studies. "Phosphorus inputs to managed and unmanaged ecosystems". March 2011

- UC Boulder. "Phosphorus supply to natural and human-dominated ecosystems." March 2011

- Cornell University. "Phosphorus supply to natural and human-dominated ecosystems." March 2010

- University of Connecticut. " Phosphorus supply to natural and human-dominated ecosystems." March 2010

- American Geophysical Union. "Linking chronosequences with the rest of the world - predicting soil phosphorus content in eroding landscapes." December 2009.

- Harvard Forest Symposium. "As time goes by: understanding soil age in eroding landscapes." Oct 2009

- Geological Society of America - "Plants and climate drive soil fertility over 350 kyr of weathering." October, 2009

- Princeton University: "How old are earth's ecosystems: erosion, dust, and the complexity of soil age." April 2009.

- Roger Williams University: "Plants, dirt and rocks: an interdisciplinary approach towards understanding tropical forests." March 2008.

- Amherst College Distinguished Five College Lecture Series. "When plants eat rocks." Nov. 2007.

- Tufts University Department of Biology Seminar. "Geologic control of nutrient availability in terrestrial ecosystems. Oct 2007.

- Jornada Long Term Ecological Research Symposium. "Grazing effects on carbon storage in rangelands." July 2007.

- General Electric Whitney Symposium on Sustainability. "Human alterations of the global nitrogen cycle." April 2007.

- Marine Biological Lab. "What do chronosequences tell us about ecosystems." March 2007

- Ecosystem retrogression workshop, New Zealand. Talk title "What do chronosequences tell us about whole ecosystems?" January 2007.

- Landcare Research, Christchurch, New Zealand. "Geologic controls of nutrient availability in terrestrial ecosystems. October 2006.

g: Work in review

h: Work in progress

Porder, S. Four Keys to Changing the World. Book under contract with Princeton University Press.

6. Research Grants

a. Current Grants

- Brown OVPR Seed Funding. "Probing nutrient cycling in re-growing tropical forests to gain insights into local, regional and global biogeochemical cycles" Role: PI. $25,000

- Brown IBES Seed Funding ""Probing nutrient cycling in re-growing tropical forests to gain insights into local, regional and global biogeochemical cycles," Role: PI. $25,000

- "The Brazilian Mata Atlântica Biome Restoration Fund" Funded through an anonymous gift to Brown University, $3,060,000. Role: Co-PI.

b. Completed Grants

- National Science Foundation (CNH). Dissertation research: Nitrous oxide and dinitrogen production from tropical forest soils under ambient and fertilized conditions. $16,345. Role: PI

- National Science Foundation. Collaborative Research: Geomorphic Control of the Lowland Tropical Forest Nitrogen Cycle. Award Amount: $311,665. Role: Co-PI. Start date June 1, 2013.

- National Science Foundation. Collaborative Research: *Coupled Biogeochemistry and Geomorphology in Three Tropical Forest Ecosystems.* DEB-0918387. Award Amount: $451,502. 2009-2012. Role: PI.

- Andrew Mellon Foundation. *Do tectonic setting, erosion rates, and soil residence times ultimately control phosphorus availability in terrestrial ecosystems?* August 2008 - July 2012. Role: Sole PI Award amount: $293,000.

- Brown/MBL seed funding. *Linking short- and long-term controls on terrestrial phosphorus cycling.* Award amount: $49,949. Role: Co-PI.

- National Science Foundation. PIRE: *Land use, ecosystem services and the fate of marginal lands in a globalized world.* OISE-0958211. Award amount: $1,199,999. 2010-2013. Role: Participant.

- Henry David Thoreau Foundation (2009-2012) Linking global thinking and local action: The Brown Environmental Fellows Program. Award Amount: $35,000. Role - Co-PI.

- Environmental Change Initiative, Brown University. Coupled Social and Natural Drivers of Deforestation and Ecosystem Change at the Amazon Cropland Frontier. Role Co-PI. Award amount: $13,000

- National Science Foundation Doctoral Dissertation Improvement Grant DEB-0407726 (2004). $5,700.

- Sixma Xi Grants in research award (2004). $1000

- Stanford Graduate Fellowship (3 years tuition and stipend support) (2000-2003). $78,000 stipend plus tuition and health insurance.

- Geological Society Penrose Grant #5909-96 (1996). $1,500

c. Proposals submitted

- National Science Foundation DEB (2017). Using novel applications of DNA barcoding and soil sampling to elucidate the controls on symbiotic nitrogen fixation in Brazilian Rainforests. $1,076,710. Role: PI. Full proposal. Not funded.

- National Science Foundation NRT (2017). Drivers and consequences of agricultural transformations in the developing world. $3,000,000. Role: Co-PI. Not funded.

- National Science Foundation DEB (2016). Using a LiDAR-guided survey and fertilization experiment to explain variation in biomass across a secondary tropical rainforest landscape. Role PI: Preproposal. Not invited

- National Science Foundation DEB (2016). Collaborative Research: Ecosystem consequences of geomorphic disequilibrium in a tropical montane forest. Role: PI. Preproposal. Not invited.

- National Science Foundation DEB (2016). DISSERTATION RESEARCH: Nitrous Oxide and Dinitrogen Production from Tropical Forest Soils Under Ambient and Fertilized Conditions. $16,345. Funded.

- National Science Foundation DEB (2015). Measuring nitrogen gas emissions fro a tropical forest under ambient conditions and nitrogen enrichment. Preproposal. Role: PI. Not Invited.

- National Science Foundation CNH (2014). Phosphorus and the Brazilian Agro-Industrial Frontier. $491,351 Role: Co-PI. Submitted Nov 2014. Not Funded.

- National Science Foundation DEB (2014). Dissertation Research: Changes in soil carbon turnover as a result of agricultural intensification in the Brazilian Amazon. Not funded.

- National Science Foundation DEB (2014). Maintaining C, N and P cycling on ecologic to geologic timescales. Preproposal. Role: PI. Not invited.

- National Science Foundation DEB Ecosystems (2013). Preliminary Proposal: Lithologic Controls on the Rate of Ecosystem Development in the Canadian Cordillera. Not invited.

- National Science Foundation – CAREER (2011). A rapid, multiscale assessment of nutrient limitation in tropical forests. Amount requested: $1,032,452. Role: PI. *Not funded.*

- National Science Foundation DEB Ecosystems. Lithologic controls on the rate of ecosystem development derived from lacustrine sediments in the Canadian Cordillera Submitted Jan. 2011. Amount requested: $414,000. Role: PI. *Not Funded*

- National Science Foundation - DEB Population and Community Ecology. Assisted plant community migration, ecological filtering, and tropical forest recovery under novel climate scenarios. Submitted Jan 2011. Amount requested: $1,489,626. Role: Co-PI. *Not Funded.*

National Science Foundation Coupled Human Natural Systems. *Multi-scale Interactions between Natural and Human Systems in Arid and Semiarid Regions: A Three-Country Comparison*. Submitted Nov. 2008. Amount requested: $1,499,645. Role: Co-PI, coordinator of ecological sampling for all sites. *Not funded.*

Brown University Seed Grant. Coupled Social and Natural Drivers of Deforestation and Ecosystem Change at the Amazon Cropland Frontier. Role Co-PI. Amount requested: $99,697. *Not funded.*

- National Science Foundation - Ecosystems. Coupled biogeochemistry and geomorphology in three tropical forests. Submitted Jan. 2008. Amount requested: $289,291. Role: PI. *Not funded. Adapted and resubmitted Jan 2009 (see above).*

- National Science Foundation - Ecosystems. Uplift, erosion and nutrient depletion in tropical forests. Submitted Jan. 2007. Amount requested: $319, 351. Role: PI. *Not funded. Adapted and resubmitted Jan 2008 (see above).*

7. Service

To the university:

- President's committee on renewable energy – Chair (2017 – present)
- President's committee on sustainability – co-Chair (2017 – present)
- Director of the Program for Environmental and Civic Engagement in the Institute at Brown for Environment and Society (2017 – present)
- Executive Producer of "Possibly", a podcast collaboration between IBES and Rhode Island Public Radio exploring the possibility of sustainability.
- Director of the Voss Environmental Fellows Program (2016 – present)
- EEB director of graduate studies (2013-present)
- IBES – Natural Systems theme leader (2014-2016)
- CES/IBES concentration advising (2009-present)
- EEB graduate curriculum committee (2010)
- Faculty representative on the Brown Energy and Environment Academic Council (EEAC) (2009 - 2010)
- EEB admissions committee (2010-2011, 2008-2009)
- Started/organized Environmental Change Initiative Lecture Series (2007-2008).
- Environmental Change Initiative faculty search committee (2008, 2010).
- Environmental Change Initiative governing board (2007- 2008).

To the profession:

Associate Editor: Biogeochemistry (2012-2018)
Manuscript Reviewer: Applied Geochemistry, Biogeochemistry, Biogeosciences, Catena, Chemical Geology, Earth and Planetary Science Letters, Ecological Applications, Ecology, Ecosystems, Geoderma, Global Biogeochemical Cycles, Journal of Ecology, Nature, Oecologia, Pacific Science, Plant and Soil, Proceedings of the National Academy of Sciences, Science, Science of the Total Environment, Soil Science Society of America Journal.
Grant Reviewer: NSF DEB Ecosystem Panel and NSF Geomorphology and Land Use Dynamics Panel.
Neon (National Earth Observatory Network): advisory committee - (2009-present)
Session Organizer: American Geophysical Union (2009), Ecological Society of America (2007).
Invited panel speaker. Union of Concerned Scientists forum on science and policymaking. Ecological Society of America Meeting, August 2005.
Invited Participant
- Aspen Global Change Institute - Workshop on the global phosphorus cycle.

- Scientific Committee on Problems in the Environment (SCOPE). Biofuels rapid assessment. Dummersbach, Germany. Sept. 2008.
- National Center for Ecological Analysis and Synthesis (NCEAS) – Tropical Nutrient Limitation Working Group. Santa Barbara, CA. June 2008 – ongoing.
- Millennium Villages/NSF workshop – Ecological stewardship and the African Green Revolution. Segou, Mali. June 2008.

To the community:

ARISE symposium speaker. "He said, she said: scientific literacy and the climate "controversy"".
Invited Lecturer at Residential Properties, Rhode Island. "Why should Residential Properties go green?" March 2007.
Co-founder of scienceinpolicy.org. This organization was dedicated to promoting the use of sound science in policy making. It has been subsumed by the efforts of the Union of Concerned Scientists, but from 2003-2005 was a grass roots organization of environmental scientists trying to inform the public about the use, and misuse, of science by policy makers.

8. Academic Honors

Ecological Society of America - Gene Likens Award for Outstanding Publication Relating to the Biogeosciences (2009)
Geological Society of America Award for Outstanding Student Research (1996)
Summa cum laude – Amherst College (1994)
Phi Beta Kappa – Amherst College (1994)
Amherst College Alfred J. Havighurst Prize for Outstanding Scholarship in the Historical Sciences. (1994)

9. Teaching

a. Regular Courses

ENVS 0490: Environmental Science in a Changing World (2017 (102), 2016 (107), 2015 (98), 2014(94), 2012 (82), 2011 (88), 2010 (65), 2010 (67), 2009 (72), 2008 (31).

ENVS 0485: Brazil's Rainforests: Past, Present and Future of the World's Most Diverse Biomes. Fall 2014 (10), field trip to the Amazon.

BIOL 1480: Terrestrial Biogeochemistry and the Functioning of Ecosystems. 2018 (18), 2016 (24), 2014 (22), 2012 (24), 2010 (28), 2008 (21)

BIOL 2430: Topics in Ecology and Evolution (2018 (2), 2016 (6), 2011 (21) 2008 (9))

BIOL 2440: Topics in Ecology and Evolution (2016 (6))

b. GISPs and independent studies

Soil Science - 2009. 7 students

c. students advised

d. Honor's, Master's and Ph.D. Theses.

Ph.D. Students:

Audrey Massmann (EEB) – 2018-present
Lindsay McCulloch (EEB) - 2016 - present
Brooke Osborne (EEB) – 2013 - present
Maya Almaraz (EEB/MBL) – 2011 - 2016
Rachel Chelsea Nagy (EEB/MBL) - 2010 - 2015
Shelby Riskin (nee Hayhoe) (EEB/MBL) - 2007 - 2012
Andre Eger (Lincoln University, Christchurch, N.Z., coadvised with Peter Almond) - 2009 - present

Ph.D. thesis committee member:

KC Cushman (EEB), Carlos Silva (EEB), Kealoha Kinney (EEB), Rebecca Greenburger (Geology), Lindsay Brin (EEB/MBL), Aron Buffen (Geology), Katherine Cushman (EEB), Laureano Gherardi (EEB), Xi Yang (Geology/MBL),

Master's thesis students

Caroline Geubels (U.C.S.B, co-advised) Timothy Huth (CES), Susanna Mage (CES), Amy Teller (Sociology)

Primary Advisor to the following undergraduate honors thesis students:

Kelsey Fenn (ENVS 2018), Aida Feng (Biology, 2016-17), Lovinia Reynolds (Geology, 2016-17), Jon Gewirtzman (Env. Sci 2016-17), Alexandra Swanson (Biology, 2016), Edwin Willig (GeoBio, 2016), Conor Sullivan, Rebekah Stein (Geobio, 2013), Cooper Tamayo (Biology, 2013), Carmen Tubbesing (Biology: 2012), Harmony Lu (Geobio: 2012), Samantha Adelburg (Geobio: 2011), Jesse Bateman (Geobio: 2010), Mana Tang (Geobio: 2010), Lindsay Hagaman (CES: 2009), Deborah Lipson (CES: 2009), Lindsay McAlpine (CES: 2009)