# Education

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| Ph.D. Forest Ecology, Biogeochemistry, University of Florida, Gainesville, FL | 1998 |
| M.S. Forest Resources and Conservation, University of Florida, Gainesville, FL | 1993 |
| B.A. International Relations, Economics, University of Wisconsin, Madison, WI | 1986 |

# Foreign Languages: Fluency in French, Portuguese, Haitian Creole, beginning study of Chinese

# Administration

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| Assistant Dean, Sewanee Integrated Program in the Environment | 2019-present |
| Chair, Environment and Sustainability Steering Committee  | 2018-present |
| Director, Sewanee-UGA-SUD Constructed Wetlands Research Collaborative | 2014 - present |
| Co-Director, Haiti Institute at Sewanee, Sewanee the University of the South | 2014 - present |
| Director, First Year Program, Sewanee the University of the South | 2012 – 2017 |
| Chair, Department of Biology, Sewanee the University of the South | 2009 - 2014 |

# Appointments

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| Carl Gustav Biehl Jr. Professor of International Studies, Univ. of the South Sewanee TN | 2017 |
| Professor of Biology, Sewanee: University of the South, Sewanee, TN | 2014 |
| Associate Professor of Biology, Sewanee: University of the South, Sewanee, TN | 2007 - 2014 |
| Associate Scientist, New Mexico Forest & Watershed Restoration Institute, Las Vegas, NM | 2007 - 2008 |
| Visiting Assistant Professor, Department of Natural Sciences, New Mexico Highlands University, Las Vegas, NM | 2007 - 2008 |
| Assistant Professor, Department of Biology, University of the South, Sewanee, TN | 2001 – 2006 |
| Adjunct Assistant Professor of Forestry, University of the South, Sewanee, TN | 1998 -2001 |
| Research Fellow, NASA Large Scale Biosphere in Amazonia (LBA) project | 1997 - 1998 |
| Graduate Research Assistant and Latin American Studies Fellow, Univ of Florida, Gainesville, FL | 1990 - 1997 |
| U.S. Peace Corps Volunteer, Benin and Guinea, West Africa | 1986 - 1989 |

# Courses: People and the Environment (Biol 115); Ecology of Place (FYRP 104); A Seminar in Environmental Studies (Enst 101 and 200); Field Investigations in Biology (Biol 130); Ecology and Evolution (Biol 131); Ecology (Biol 210); Environmental Plant Physiology (Biol 221); Human Health and the Environment (Biol 232); Ecological Integrity of Agriculture (Enst 305): Agroecology and Sustainable Food Systems (Biol 306); Ecosystems and Global Change (Biol 330)

# Grants and Awards (since 2010)

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| Alderson-Tillinghast Award to fund water analysis equipment for China research ($2,985) | 2019 |
| McCrickard Faculty Development Fund to strengthen Sewanee-UGA wetland research ($14,055) | 2018 |
| Sewanee Headwaters Initiative to fund post bac fellow for constructed wetland ($5,000) | 2018 |
| Alderson-Tillinghast Award to fund training of research student in China ($2,177) | 2018 |
| ASIANetwork Faculty Fellow: Water pollution research in Jiangsu Province China ($30,000) | 2018 |
| McCrickard Grant to support new faculty research in water and wastewater ($17,700) | 2017 |
| Riverview Foundation (Sewanee UGA SUD CW collaborative $70,000) | 2015 |
| Sommer Award to Sewanee Haiti Institute ($120,000 over 4 years) | 2014 |
| Shearwater Foundation (Payment for Ecosystem Services in Haiti, $15,000) | 2014 |
| Coca Cola Sustainability Foundation ($590,000) to build constructed wetland (CW) and Sewanee-SUD-UGA collaboration | 2014 |
| American Colleges of the South Faculty Advancement Grant - PES in Haiti ($9,998) | 2012 |
| American Colleges of the South Faculty Advancement Grant – Exploring a Constructed Wetland Collaboration ($7,000) | 2011 |
| Sewanee Utility District Research Grant ($15,000) | 2010 |

# Scholarship (italics indicate student coauthors)

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| **McGrath, D.**, K. Bryan, *D. Pearce and A.K. Perry*. A New Approach for Using Payment for Ecosystem Services (PES) to Encourage Adoption of Resilient Agroecosystems: A Case from Central Haiti. (in preparation for Ecology and Society). |
| *Hopson, M*., **McGrath, D**., Torreano, S., *Smith, M*. & Black, M. 2018. Removal of Emerging Contaminants and Conventional Pollutants by a Constructed Wetland During the First Year of Establishment. E-proceedings from the 5th International Conference on Decentralized Water and Wastewater Treatment Plants (SWAT 2018). Thessaloniki, August 26-29, pp 272-279. ISBN: 978-960-243-710-0 |
| *Zeitler, E.,* K. Cecala, and **D. McGrath**. 2018. Tertiary wastewater treatment wetlands provide suitable habitat f or anurans. Journal of Freshwater Ecology 33(1):475-488. DOI: 10.1080/02705060.2018.1524334  |
| **McGrath, D.** and J. Troisi. Submitted. Impact of an Immersive Academic and Place-Based First Year Program on Student Connections and Engagement Over Four Years. Submitted to the Journal of the First-Year Experience and Students in Transition on June 15, 2018. |
| C. K, Smith, *E, Landreaux, H. Steinmann*, **D. McGrath**, C. Hayes, & R. Hayes, 2016. Redbay Survival Eleven Years after Infection with an Exotic Disease on St. Catherines Island, Georgia, USA. Environment and Natural Resources Vol 6(1): 27-34, URL: http://dx.doi.org/10.5539/enrr.v6n1p27. |
| **McGrath, D**. 2014. Partners in Coffee Integrating international outreach into sustainability education. College Planning and Management (Jan 2014); 82. |
| **McGrath, D.** and T. Greenwalt. 2013. Valuation and Payment for Ecosystem Services as Tools to Improve Ecosystem Management. Pp 283-297 in The Laws of Nature: Reflections on the Evolution of Ecosystem Management Law and Policy. Kalyani Robbins (ed) The University of Akron Press. |
| Smith, C. Ken and **D.A. McGrath**. 2011. The Alteration of Soil Chemistry through Shell Deposition on a Georgia (USA) Barrier Island. Journal of Coastal Research 27(1): 103-109. |
| Greenwalt, T. and **D. McGrath**. 2009. Protecting the City’s Water. Designing a Payment for Ecosystem Services (PES) Program. Natural Resources & Environment 24(1): 9-13. |
| **McGrath, D.A**, and M.A. Binkley. 2009. Microstegium vimineum (Trin.) A. Camus (Japanese Stiltgrass) Invasion Changes Soil Chemistry and Microarthropod Communities in Cumberland Plateau Forests. Southeastern Naturalist 8 (1): 141-156. |
| Derr, T., **D. McGrath**, V. Estrada, E. Krasilovsky and A. Evans. 2008. Monitoring the Long Term Ecological Impact of New Mexico’s Collaborative Forest Restoration Program. New Mexico Forest Restoration Series Working Paper 5. New Mexico Forest and Watershed Restoration Institute, New Mexico Highlands University, [*http://www.nmfwri.org/restoration-papers*](http://www.nmfwri.org/restoration-papers) |
| **McGrath, D**. and T. Greenwalt. 2008. Protecting the City’s Water: Designing a Payment for Ecosystem Services (PES) Program for the Santa Fe Municipal Watershed. New Mexico Forest Restoration Series Working Paper 4 New Mexico Forest and Watershed Restoration Institute, New Mexico Highlands University. [*http://www.nmfwri.org/restoration-papers*](http://www.nmfwri.org/restoration-papers) |
| **McGrath, D.A**. and C.K. Smith. 2006. The Sweet Earth: A Biogeochemistry Perspective on Tropical Deforestation. In: Exploring Environmental Challenges: A Multidisciplinary Approach. S. L. Spray and M. D. Moran (eds), Acada Books. |
| **McGrath, D.A**., J.P. Evans, C.K. Smith, D.G. Haskell, N.W. Pelkey, R.R. Gottfried, C.D. Brockett, M.D. Lane, E. D. Williams. 2004. Mapping land-use change and monitoring the impacts of hardwood-to-pine conversion on the southern Cumberland Plateau in Tennessee. Earth Interactions 8 (9): 1-23. |
| **McGrath, D.A.**, C.K. Smith, H. Gholz, and F. Oliveira. 2001. Effects of land-use change on soil nutrient dynamics in Amazônia. Ecosystems 4: 625-645. |
| **McGrath, D.**, M. Duryea and W. P. Cropper. 2001. Phosphorus availability and fine root proliferation in Amazonian agroforests six years following native forest conversion. Agriculture, Ecosystems & Environment 83: 271-284. |
| **McGrath, D.A**., N.B. Comerford, M.L. Duryea. 2000. Litter dynamics and monthly fluctuations in soil phosphorus availability in an Amazonian agroforest. Forest Ecology and Management 131: 167-184. |
| **McGrath, D.A**., M.L. Duryea, N.B. Comerford, and W.P. Cropper. 2000. Nitrogen and phosphorus cycling in an Amazonian agroforest nine years following forest conversion. Ecological Applications 10: 1633-1647. |

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| **Presentations since 2007** (italics indicate student co-presenters) |
| **McGrath, Deborah**, Cean Reginald and Keri Watson. 2020. Payment for Ecosystem Services in Haiti’s Central Plateau. Carbon, Coffee and Community Collaboration. International Conference on Research and Innovation in Haiti, March 10-11, 2020. Pétionville, Haiti. |
| *Ngo, Crystal, Bernice Leveque* and **Deborah McGrath**. 2020. The Impact of Carbon Household Payments to Small Household Haitian Farmers. Keough School of Global Affairs 2020 Human Development Conference. Feb 21-22, 2020, Notre Dame University, South Bend, Indiana. |
| *Jacqueline N. Langmo, Anthony Wright*, W. Matthew Henderson, Tanisha Ghosh, Scott Torreano, Marsha C. Black, **Deborah McGrath**, Franklin E. Leach III. 2019. Mass spectrometry-based investigations of phytoremediation and wastewater treatment in the Sewanee Constructed Research Wetland. **ASMS Conference on Mass Spectrometry and Allied Topics,** June 2 - 6, 2019. Atlanta, Georgia |
| **McGrath, D.** *I. Smith, A. Westmoreland, C. Wright*. 2019. Governmental Response to Water Pollution in Jiangsu Province, China: Observations downstream. Southeast Conference of the Association for Asian Studies (SECAAS). January 18-20, 2019 Memphis, TN. |
| **McGrath, D.** and *E. Zeitler*. 2018. The Sewanee-UGA Wastewater Treatment Research Wetland: Current collaborations and future partnerships. Invited seminar for the Environmental Health Science Department at the University of Georgia’s College of Public Health. October 5, 2018. |
| **McGrath, D**., *Hopson, M*., Torreano, S., *Smith, M*. & Black, M. (2018). Removal of Emerging Contaminants and Conventional Pollutants by a Constructed Wetland During the First Year of Establishment. Paper presented at 5th International Conference on Decentralized Water and Wastewater Treatment Plants, Ministry of Environment and Energy, Thessaloniki, August 26-29, 2018. |
| *Smith, M. E*. D. Brew, **D. McGrath**, S. Torreano and M. Black. 2017. Effectiveness of a Constructed Wetland in Removing Emerging Contaminants from Municipal Wastewater. Society for Ecological Toxicology and Chemistry (SETAC) 38th Annual meeting, 12-16 November 2017, Minneapolis, MN. |
| *Hopson, M, N., G. C. Konstam*, S. J. Torreano, E.M. White and **D. A. McGrath**. 2017. Effectiveness of a Constructed Wetland for the Tertiary Treatment of Fecal Indicator Bacteria and Nutrients in Municipal Wastewater During the First Year of Establishment. Society for Ecological Toxicology and Chemistry (SETAC) 38th Annual meeting, 12-16 November 2017, Minneapolis, MN. |
| *Zeitler, E., E. Gill, A. Murphy,* K. Cecala and D. **McGrath**. 2017. Tertiary wastewater treatment wetlands provide suitable habitat for anurans. Tennessee Herpetology Society. Tennessee Herpetological Society 23rd annual conference 28-29 September 2017, Middle Tennessee State University, Murphreesborogh, TN. |
| *Pearce, D*. and **D. McGrath**. 2017. Examining the Relationship between Household Health and Environmental Conditions in Haiti’s Central Plateau. National Council for Science and the Environment (NCSE) 17th National Conference and Global Forum on Science Policy and the Environment: *Integrating Environment and Health* taking place January 24-26, 2017 Arlington, VA. |
| **McGrath, D.A.** and K.L. Bryan. 2016. A New Approach for Using Payment for Ecosystem Services (PES) to Encourage Adoption of More Resilient Agroecosystems: A Case from Central Haiti. A Community on Ecosystem Services (ACES): Linking Science, Practice and Decision Making, 5-9 December 2014, Jacksonville, FL. |
| **McGrath, D.A**. 2016. A New Approach for Using Payment for Ecosystem Services (PES) to Encourage Adoption of More Resilient Agroecosystems: A Case from Central Haiti. Presented to the Tropical Conservation and Development’s Tropilunch at the University of Florida, December 5, Gainesville, FL. |
| French, A., **D. McGrath**, Q. Newcomer, B. Pasinella and J. Pumillo. 2015. Developing and Implementing Carbon Mitigation Projects for Your Campus. Invited panelist for the Association for the Advancement of Sustainability in Higher Education (AASHE) 2015 conference, Oct 25-29 Minneapolis, MN. |
| *Pearce, D., G. Fripp,* and **D. McGrath**. 2015. Using payments for carbon sequestration to promote climate action on Sewanee’s campus and more sustainable ecosystems on Haiti’s Central Plateau. Poster session AASHE 2015 conference, Oct 25-29 Minneapolis, MN. |
| *Summers, S., G. Fripp., B. McKenzie, P. Davis* and **D. McGrath**. 2015. Zanmi Kafe: Using on-farm research to facilitate the adoption and management of more sustainable coffee-based agroecosystems in Haiti’s Central Plateau. Poster session, AASHE 2015 conference, Oct 25-29 Minneapolis, MN*.* |
| Bastress-Dukehart, E., E. Boynton, D. Griffith, **D. McGrath** and K. Nelson. 2015. Interdisciplinary Models that Support Interconnectivity. Association of American Colleges and Universities (AAC&U) 2015 Centennial Meeting: Liberal Education, Global Flourishing and the Equity Imperative, 22-24 January, 2014, Washington, DC. |
| **McGrath, D.** and K. Bryan. 2014. Academic Institutions as Partners in Developing World PES Programs: A case from Haiti’s Central Plateau. A Community on Ecosystem Services (ACES) Annual Meeting: Linking Science, Practice and Decision Making, 8-12 December 2014, Washington, DC. |
| Bruce, A., **D. McGrath** and R. O’Connor. 2014. Practicality, Passion and Place: The New First Year Advising Experience. Tennessee Independent Colleges and Universities Association (TICUA) Annual Meeting: Student Retention: What’s Next, 22 October, 2014, Belmont University, Nashville, TN.  |
| *Henderson, C., L. Carver, E. Sega, K. Bryan, J. Salazar,* and **D. McGrath**. 2013. Payment for Ecosystem Services For Carbon Sequestration in Haiti: the potential for offset programs in poverty alleviation and sustainability education. Association for the Advancement of Sustainability in Higher Education (AASHE) 2013 Conference, Oct 6-9, 2013, Nashville, TN. |
| *Henderson, C., J. Salazar, K, Bryan,* and **D. McGrath**. 2013. Payment for Ecosystem Services for Carbon Sequestration in Haiti: offsetting University air travel emission to meet sustainability goals. Association for the Advancement of Sustainability in Higher Education (AASHE) 2013 Conference, Oct 6-9, 2013, Nashville, TN. |
| **McGrath, D**., S. Torreano and *G. Saunders*. 2013. Taps, Toilets and Trees: A Collaborative Partnership for Community-Engaged Learning about Water Resource Management between the Sewanee Utility District (SUD) and the University of the South. Water Education Summit, Sept 24-26 2013, Chattanooga TN. |
| Fowler, L., **McGrath, D**., S. Toreanno and *J. Parkman*. 2013. Collaborating Across Universities to Increase Learning and Wastewater Capacity. Water Education Summit, Sept 24-26 2013, Chattanooga TN. |
| **McGrath, D**., *K. Bryan, W. Watson*. 2012. Educating through Offsets: Developing a Community-Based Payment for Ecosystem Services Pilot Project for Carbon Sequestration in Cange, Haiti. Ecosystem Services Partnership (ESP) 2012 conference, July 31 to August 4 2012, Portland Oregon. |
| **McGrath, D**., *M.E. Watson* and T. Greenwalt. 2011. Using payments for ecosystem services (PES) to alleviate poverty and restore degraded lands in Haiti. Special session on Valuation of Ecosystem Services at the 20th Annual Meeting of the Society for Ecological Restoration 4th World Conference on Ecological Restoration. August 21-25 2011 Merida, Mexico. |
| *Teasley, E, J. Bennett, C. Crider,* **D. McGrath**and C.K. Smith. 2011. Pharmaceuticals from Wastewater in Streams Draining a Forested Watershed on the Cumberland Plateau. Association for Southeastern Biologists. 72nd Annual Meeting of the Association of Southeastern Biologists. April 13-16 2011 University of Alabama. |
| *Teasley, E, J. Bennett, C. Crider*, **D. McGrath**and C.K. Smith. 2011. Pharmaceuticals from wastewater in streams draining a forested watershed on the Cumberland Plateau. Tennessee Academy of Sciences, April 16, 2011. Belmont University, Nashville, TN. |
| **McGrath, D**. and C.K. Smith. 2010. Shell middens change soil chemistry on a Georgia (USA) Barrier Island. Ecological Society of America 95st Annual Meeting, August 1-6, 2010, Pittsburgh, PA. |
| Greenwalt, Travis. and **D. McGrath**. 2009. Protecting the City’s Water: Designing A Payment for Ecosystem Services (PES) Program. NWRA 2009 Annual Conference Feb 3-5, 2009. Reno, Nevada. |
| Ebinger, M.H., V.H. Hogsett, C. Mora, **D. McGrath** and *R. Blea*. 2008. Productivity of Biochar-Amended Soils from Degraded Land of the Semiarid Southwest US. American Society of Agronomy Joint Annual Meeting with the GSA, SSA, CSSA and GCAGS, October 1-9, 2008, Houston, TX. |
| *Early, Melissa, Jordan Casey, Erin Tyrell* and **Deborah McGrath**, 2007. Exurbanization of forest and farmland on Tennessee’s southern Cumberland Plateau: A comparison of water quality under two development models. Emerging Issues Along Urban/Rural Interfaces II, April 9-12, 2007, Atlanta, GA. |
| *Moye, Valerie,* **Deborah McGrath**, Nick Hollingshead and Ken Smith. 2007. Exurbanization of forest and farmland on Tennessee's southern Cumberland Plateau: A spatial analysis of the impact of land use on water quality. Emerging Issues Along Urban/Rural Interfaces II, April 9-12, 2007, Atlanta, GA. |
| *Simmons, Sarah, Melissa Early,* **Deborah McGrath** and Ken Smith, 2007. Exurbanization of forest and farmland on Tennessee’s southern Cumberland Plateau: A comparison of county costs and revenue under two development models. Emerging Issues Along Urban/Rural Interfaces II, April 9-12, 2007, Atlanta, GA. |
| *Benton, Margaret Ann, Elise Traversa, Anna Jones,* **Deborah McGrath** and Robert Bachman. 2007. Exurban lakes on the southern Cumberland Plateau of Tennessee Part 2: Metal stratification and implications for water supply. Geological Society of America Southeastern Section Meeting, March 28-30, 2007, Savannah, GA. |

# Student research interns supervised abroad since 2010 (major, class) Sean McKenzie Eco Bio 2011, Will Watson Natural Resources 2012, Keri Bryan Eco Bio 2013, Linnea Carver Eco Bio 2014, Ford Rushton Natural Resources 2014, Charlotte Henderson Eco Bio 2014, Jonathan Salazar Environmental Policy 2014, Elizabeth Sega Biology 2015, Geanina Fripp Eco Bio 2016, Scott Summers Eco Bio 2016, Duncan Pearce Biology 2017, Peter Davis Natural Resources 2017, Ben McKenzie Eco Bio 2017. Chris Hornsby Environmental Arts & Humanities 2019. Cal Oakley Biology 2019, Bre Ayala Eco Bio 2017, Crystal Nhu Ngo Environment & Sustainability and Economics 2020; Isabel Smith Chemistry 2020; Caroline Wright Biochemistry 2020; Bernice Leveque International Global Studies 2021; Anna Westmoreland Chemistry 2019, Wilder McCoy Natural Resources 2020; Erin Gill Biology 2019, George Buruss (Eco Bio 2021), Marc Monteil (2021).

# Invited Reviewer (40 manuscripts)

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| Agriculture, Ecosystems & Environment (2005, 2008, 2009)  | Plant and Soil (2003, 2004, 2006, 2007, 2009, 2010, 2011, 2012, 2014) |
| Ecological Applications (2002, 2003, 2006) | Nutrient Cycling in Agroeosystems (2014, 2015, 2016) |
| American Midland Naturalist (2010)  | Pedosphere (2010, 2011, 2015)  |
| Biotropica (2010, 2015) | Journal of Environmental Monitoring (2011, 2015) |
| Biogeochemistry (2007)  | Journal of Tropical Forest Science (2002) |
| Ecology (2001) | Landscape Ecology (2012) |
| Ecosystems (2005)  | Geoderma (2002, 2014, 2018) |
| Ecosystem Services (2013) | Global Change Biology (2003, 2009) |
| Restoration Ecology (2008, 2018, 2019) |  Interciencia (2002) |
| Archives of Agronomy and Soil Science (2018) |  |

# University Service

Environment & Sustainability Major Steering Committee (2018-present)

Business working group (2018-2019)

Provost’s budget working group (2017)

Budget Priorities Committee (2016-2019)

Strategic Planning Committee (2015-2017)

Faculty appointee to the Capital Campaign Cabinet (2013-present)

Placed-Based First Year Program Advisory Committee (2012)

Environmental Studies Steering Committee (2009-present)

Chair, Biology Department (2009-2014)

Community Engaged Learning (2007-present)

Degrees Committee (2002-2007)

Faculty Advisor for College Democrats of America (2002-2005)

Faculty Advisor for the Ecohouse (2003 -2006)

Freshmen Advisor (2000-present)

HHMI Environmental Outreach for the Cumberland Plateau, (2001- 2002)

Scientific Sewanee Steering Committee (2002-2007)

Task Force on Faculty Life (2002-2003)

Watson Fellowship Committee (2004-2007, 2009-2016, 2018-present)