DEBJANI SIHI
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Employment History

- Core Faculty, Population Biology, Ecology, and Evolutionary Biology Program, Emory University (Feb, 2021 to present)
- Assistant Professor, Department of Environmental Sciences, Emory University (Sept, 2020 to present)
- Post-Doctoral Research Associate, Environmental Sciences Division at the Oak Ridge National Laboratory (Jan, 2018 to Aug, 2020)
- Assistant Research Scientist, University of Maryland Center for Environmental Science, Appalachian Laboratory (Aug, 2015 to Dec, 2017)
- Visiting Post-Doctoral Fellow, Organismic and Evolutionary Biology, Harvard University (Jan, 2016 to Aug, 2018)

Education

- Doctor of Philosophy, Soil and Water Science (Terrestrial Biogeochemistry), Graduate Research Assistant, University of Florida, Gainesville, FL, USA, 2011 – 2015
- Master of Science, Environmental Sciences (Minor: Microbiology), Junior Research Fellow of Indian Council of Agricultural Research, Indian Agricultural Research Institute, New Delhi, India, 2008 – 2010
- Bachelor of Science, Soil Science (Honors: Agriculture), University Research Scholar, Bidhan Chandra Krishi Viswavidyalaya, WB, India, 2004 – 2008

Honors and Awards

National/International Level (post-graduation)

- Soil Ecology Society Best Student Authored Paper Award, 2019.
- Gene E. Likens Award (outstanding publication award for an early career scientist), Ecological Society of America, Biogeosciences section, 2018.
- Top Reviewers for Multidisciplinary, Publons Peer Review Award, 2017.
- AmeriFlux Scholarship recipient, AmeriFlux Management Project, Department of Energy, USA for attending the 10th Flux Course, @2850, 2017.
- Outstanding Reviewer Recognition, Elsevier Journal(s): Atmospheric Environment and Agricultural and Forest Meteorology, 2017.
- Energypath Scholarship, Sustainable Energy Fund, an independent non-profit organization in Pennsylvania, USA, @$1000, 2017.

University Level (post-graduation)

- Emory Global Health Institute (EGHI) Faculty Fellow, 2021-2022.
- Alumni Spotlight, Myakka Newsletter, Soil and Water Sciences Department, University of Florida, Spring 2021.

National/International Level (as a graduate student at University of Florida)

- Runner-up in Oral presentation, ASA-CSSA-SSSA international annual meeting under the section of "Wetland Soils" @ $200, 2014.

- One of the top three presenters in poster presentation, ASA-CSSA-SSSA international annual meeting under the section of "ACS Diversity Graduate Student Poster Competition" @ $200, 2014.
- Invited participant, Graduate Student Leadership Conference, ASA-CSSA-SSSA International Annual meeting, Nov 2-5, 2014, Long Beach, California, USA.
- One of the top three presenters in Oral presentation, ASA-CSSA-SSSA international annual meeting under the section of "Wetland Soils" @ $100, 2013.

University Level (as a graduate student at University of Florida)

- Excellence in Graduate Studies (Ph.D. Level), Soil and Water Science Dept, 2015.
- Recognition of High Scholarship, Outstanding Achievement or Service by Delta Epsilon Iota Academic Honor Society, 2015.
- Recognition for Outstanding service, Mayors' Council, 2015.
- A. S. Herlong Sr. Graduate Scholarship, IFAS/CALS, @ $2,000, 2014-2016.
- Outstanding CALS international student, University of Florida International Center, 2013, 2014.
- William Robertson Fellowship, Soil and Water Science Department, University of Florida @ $1000, 2013-2014.
- William C. and Bertha M. Cornett Fellowship, IFAS/CALS, @ $2,000, 2013-2014.
- Nominated among 13 finalists for Alec Courtelis Award, 2014.
- Recognition from International Honorary for Leaders in University Apartment Community, 2014.
- Recognition from University Multicultural Mentor Program and College of Education, 2013.
- Institute of Food and Agricultural Sciences (IFAS) Travel Grant, University of Florida @ $200, 2013, 2014, 2015.
- Office of the Vice President for Research Travel Grant, University of Florida @ $400, 2013, 2014.
- Graduate Student Council Travel Grant, @ $350, 2012, 2013, 2014.
- Davidson Graduate Student Travel Scholarship, @ $300 2013, 2014.
- Graduate School Grinter Fellowship, @ $2,416, 2011, 2012.

Media appearance and Featured works

- Editors' Highlights: Dueling Eyes on Ecosystem Metabolism Tell Diverging Stories
- Computationally Yours podcast: Climate Change
- Invited Article for Global Change Biology's 25th Anniversary
- Top downloaded paper 2018-2019: One of the most read in Journal of Geophysical Research: Biogeosciences
- SCIENCE TRENDS, 2018: Soil Heterotrophic Respiration And The Earth System Model, DOI: 10.31988/SciTrends.18878.
- Research Highlights: Biogeochemistry: Peat decomposition. Nature Climate Change 7, 686-686, 2017, DOI: 10.1038/nclimate3406.
- UF/IFAS High Impact Research Publications, 2017: One of the short-listed articles
- Research Matters, Science Media Centre, Indian Institute of Science, Bangalore, India, 2017: Soil health improves with organic farming in long and short terms, shows study.

Peer-reviewed Articles (Google Scholar, ResearchGate, ORCID)

Published/Accepted

1. **Sihi, D.**, Xu, X., Ortiz, M. S., O'Connell C., Silver, W., López-Lloreda, C., Brenner, J., Quinn, R., Phillips, J., Newman, B., and Mayes, M. A. Improved representations of methane emissions from wet tropical forest soils using a microbial functional group-based model coupled with a diffusivity module. Biogeosciences, 18, 1-18, 2021, DOI: https://doi.org/10.5194/bg-18-1-2021.

2. Jha, G., **Sihi, D**., Dari, B., and Nocco, M., Rapid and Inexpensive Assessment of Soil Total Iron Using NixPro Color Sensor. Agricultural & Environmental Letters, 6, e20050, 2021, DOI: 10.1002/ael2.20050.
3. Renchon, A. A., Drake, J. E., Macdonald, C. A., **Sihi, D.**, Hinko-Najer, N., Arndt, S. K., Noh, N., Davidson, E. A., and Pendall, E. Contribution of soil CO_2 efflux to seasonal and diurnal dynamics of ecosystem respiration in a dry sclerophyll forest, Journal of Geophysical Research: Biogeosciences, 126, e2020JG006221, 2021, DOI: 10.1029/2020JG006221.
4. Baatz, R., Hendricks-Franssen, H., Euskirchen, E., **Sihi, D.**, Dietze, M., Van Looy, K., de Lannoy, G., Williams, M., Pauwels, V., Montzka, C., Mishra, U., Bogena, H., Adamescu, M., Fox, A., Görgen, K., Naz, B., and Vereecken, H. Reanalysis in Earth System Science: Towards Terrestrial Ecosystem Reanalysis. Reviews of Geophysics, 2021, DOI: 10.1029/2020RG000715.
5. Hollinger, D. Y., Davidson, E. A., Fraver, S., Richardson, A. D., Savage, K. E., **Sihi, D.**, and Teets, A. F. Multi-Decadal Carbon Cycle Measurements at the Howland Forest AmeriFlux Site. Journal of Geophysical Research: Biogeosciences, e2021JG006276, 2021, DOI: 10.1029/2021JG006276.
6. Graham E. B., Averill, C., Bond-Lamberty, B., Knelman, J. E., Krause, S., Peralta, A. L., Shade, A., Peyton A. S., Cheng, S., Fanin, N., Freund, C., Garcia, P. E., Gibbons, S. M., Van Goethem, M. W., Guebila, M. B., Kemppinen, J., Nowicki, R., Pausas, J. G., Reed, S., Rocca, J., Sengupta, A., **Sihi, D.**, Simonin, M., Słowiński, M., Spawn, S., Sutherland, I., Tonkin, J., Wisnoski, N., Zipper, S. C., and Contributor Consortium. Towards a unifying framework of disturbance ecology through crowdsourced science. Frontiers in Ecology and Evolution, 2021, DOI: 10.3389/fevo.2021.588940.
7. McLennon, E., Dari, B., Jha, G., **Sihi, D.**, and Vanaja, K., Targeting Regenerative Agriculture and Integrative Permaculture for Sustainable and Technology Driven Global Food Production and Security. Agronomy Journal, 2021, DOI: https://doi.org/10.1002/agj2.20814.
8. Raj. A., Mandal, J., Golui, D., **Sihi, D.**, Dari, B., Kumari, P. B., Ghosh, M., and Ganguly, P., Determining Suitable Extractant for Estimating Available Arsenic in Soil. Water, Air & Soil Pollution, 232, 247, 2021, DOI: https://doi.org/10.1007/s11270-021-05215-y.
9. Jha, G., Ulery, A., Lombard, K., VanLeeuwen, D., Brungard, C., Dari, B., and **Sihi, D**., Monitoring Total Heavy Metal(loid)s and Bioavailable Arsenic in Agricultural Soils of Animas Watershed, New Mexico (USA). Water, Air & Soil Pollution232, 308, 2021, DOI: https://doi.org/10.1007/s11270-021-05249-2
10. Chelsea, N. R., …**Sihi, D.** et al., (>100 co-authors). Harnessing the NEON Data Revolution to Advance Open Environmental Science with a Diverse and Data-Capable Community. Ecosphere , 2021 (accepted).
11. **Sihi, D.**, Davidson E. A., Savage K., and Dong Liang. Numerical representation of microsite production and consumption of trace gases in soil using frequency distributions, Global Change Biology, 26, 200-218, 2020. DOI: https://doi.org/10.1111/gcb.14855 (Invited contribution to the special issue for 25-year anniversary of GCB).
12. Hawkins, L. R., Kumar, J., Luo, X., **Sihi, D.**, and Zhou, S. Measuring, Monitoring, and Modeling Ecosystem Cycling, Eos, 101, 2020. DOI: https://doi.org/10.1029/2020EO147717.
13. Jian, J., Gough, C. M., **Sihi, D.**, Hopple, A., and Bond-Lamberty, B. Collar properties and measurement time confer minimal bias on annual soil respiration estimates, Journal of Geophysical Research: Biogeosciences, 125, e2020JG006066, 2020. DOI: 10.1029/2020JG006066.
14. Bond-Lamberty, B., Christianson, D. S., Malhotra, A., Pennington, S. C., **Sihi, D.**, …et al., (>90 co-authors). COSORE: A community database for continuous soil respiration and other soil-atmosphere greenhouse gas flux data, Global Change Biology, 2020, DOI: https://doi.org/10.1111/gcb.15353.
15. **Sihi, D.***, Dari, B.*, Yan, Z., Sharma, D. K., Pathak, H., Sharma, O. P., and Nain, L. Assessment of Water Quality in Indo-Gangetic Plain of South-Eastern Asia under Organic vs. Conventional

Rice Farming. Water, 12, 960, 2020, DOI: https://www.mdpi.com/2073-4441/12/4/960 (* indicates equal contribution).

16. Loomis, G., Dari, B., Rogers, C. W., and **Sihi, D.** Evaluation of residue management practices on barley residue decomposition. PLOS ONE, 15, e0232896, 2020, DOI: https://doi.org/10.1371/journal.pone.0232896.
17. **Sihi, D.**, Inglett, P. W., and Inglett, K. S., Warming rate drives microbial nutrient demand and enzyme expression during peat decomposition. Geoderma, 336, 12-21, 2019, DOI: https://doi.org/10.1016/j.geoderma.2018.08.027.
18. Buchkowski, R., Shaw, A., **Sihi, D.**, Smith, G. R., and Keiser, A. Constraining carbon and nutrient flows in soil with ecological stoichiometry, Frontiers in Ecology and Evolution, 7:382, 2019, DOI:10.3389/fevo.2019.00382.
19. Weintraub, S., Flores, L., Weider, W., **Sihi, D.**, Cagnar, C., Gonçalves, D., Young, M., Li L., Chuck, A., Mark, S., Yaniv, O., Baatz, R., Sullivan, P., and Groffman, P. M. Leveraging environmental research and observation networks to advance soil carbon science. Journal of Geophysical Research: Biogeosciences, 124, 1047-1055, 2019, DOI: 10.1029/2018JG004956.
20. **Sihi, D.,** Davidson, E. A., Min Chen, Savage, K., Richardson, A. D., Keenan, T. F., and Hollinger, D.Y. Merging a Mechanistic Enzymatic Model of Temperature, Moisture, and Substrate Supply Effects on Soil Respiration into an Ecosystem Model in Two AmeriFlux sites of Northeastern USA. Agricultural and Forest Meteorology, 252, 155-166, 2018, DOI: https://doi.org/10.1016/j.agrformet.2018.01.026 ('Celebrating the 20th anniversary of the AmeriFlux network' Special Issue).
21. **Sihi, D.**, Inglett, P. W., Gerber, S., and Inglett K. S. Rate of warming affects temperature sensitivity of anaerobic peat decomposition and greenhouse gas production. Global Change Biology, 24:e259–e274, 2018, DOI:10.1111/gcb.13839.
22. Malhotra, A., **Sihi, D.**, and Iversen C. M. The fate of root carbon in soil: data and model gaps, Eos, 99, 2018, DOI: https://doi.org/10.1029/2018EO112593.
23. Yan Z., Chen S., Dari B**, Sihi, D.**, Chen Q. Phosphorus transformation response to soil properties changes induced by manure application in a calcareous soil. Geoderma, 322, 163-171, 2018, DOI: https://doi.org/10.1016/j.geoderma.2018.02.035.
24. Dari B and **Sihi, D.** A Decadal Overview of Biochar Research in Agriculture. Journal of Agricultural Physics, 18(1), 14-20, 2018.
25. **Sihi, D.**, Dari, B., Sharma, D. K., Pathak, H., Nain, L., and Sharma, O. P. Evaluation of soil health in organic vs. conventional farming of basmati rice in North India. Journal of plant nutrition and soil science, 180, 389-406, 2017, DOI: 10.1002/jpln.201700128.
26. Dari B**, Sihi, D.**, S K Bal., and Kunwar S. Performance of Direct Seeded Rice under Various Dates of Sowing and Irrigation Regimes in Semiarid India, Paddy and Water Environment, 2017, DOI: 10.1007/s10333-016-0557-8.
27. **Sihi, D**., Gerber, S., Inglett, P. W., and Inglett K. S. Comparing models of microbial-substrate interactions and their response to warming. Biogeosciences, 13, 1733-1752, 2016, DOI:10.5194/bg-13-1-2016.
28. **Sihi, D.**, Inglett, P. W., and Inglett K. S. Carbon quality and nutrient status drive the temperature sensitivity of organic matter decomposition in subtropical peat soils. Biogeochemistry, 131, 103-119, 2016, DOI: 10.1007/s10533-016-0267-8.
29. **Sihi, D.**, Sharma, D. K., Pathak, H., Singh, Y. V., Sharma, O. P., Nain, L., Chaudhary, A. and Dari, B. Sihi, D., Sharma, D. K., Pathak, H., Singh, Y. V., Sharma, O. P., Nain, L., Chaudhary, A. and Dari, B. Effect of organic farming on productivity and quality of basmati rice. Oryza-An International Journal of Rice, 2012, 49(1), 24-29.

Under Review/Revision

1. O'Connell, C. S., Anthony, T. L., Mayes, M. A., Pérez, T., **Sihi, D.**, Silver, W., Utilizing novel field and data exploration methods to explore hot moments in high-frequency soil nitrous oxide

emissions data: Opportunities and challenges. Frontiers in Forests and Global Change (under revision).

In preparation (Mature manuscripts are available to be shared upon request)

1. **Sihi, D.**, Zheng, J., Brenner, J., Phillips, J., Singh, S., Pett-Ridge, J., Jagadamma, S., López Lloreda, C., and Mayes, M. A. Oscillating Redox Conditions Controlled Greenhouse Gas Dynamics in Wet Tropical Forest Soils. Target journal: Biogeochemistry.
2. Malhotra, A., Harden, J. W., Tumber-Davila, S. J., **Sihi, D.**, Abramoff, R. Z., Hanson, P. J., Pries, C. H., Jackson, R. B., McCormack, M. L., Norby, R. J., Sulman, B. N., Thornton, P. E., Walker, A., Werbin, Z., and Iversen, C. M. The persistence of root carbon in soil: data and modeling gaps. Target journal: New Phytologist.
3. Jha, G., Kankarla, V., McLennon, E., Pal, S., **Sihi, D.**, Dari, B., Diaz, D., and Nocco, M. Per- and polyfluoroalkyl substances (PFAS) in Integrated Crop-Livestock Systems: Environmental exposure and human health risks. Target Journal: International Journal of Environmental Research and Public Health.

White Paper

1. **Sihi, D.**, Basu, K., and Singh, K. Improved Understanding of Coupled Water and Carbon Cycle Processes through Machine Learning Approaches. Artificial Intelligence for Earth System Predictability, Earth and Environmental System Science Division, Office of Biological and Environmental Research, Department of Energy. DOI: 10.2172/1769721

Invited Book Chapters

1. **Sihi, D**. and Dari, B. (2020). Soil biogeochemistry. In: The Soils of India, Mishra, B. B. (Ed), World Soils Book Series. Hartemink, A. E. (Series Ed), Springer Nature Switzerland AG, DOI: 10.1007/978-3-030-31082-0.
2. Souri, Z., Cardoso, A. A., da-Silva, C. J., Oliveira L. M., Dari, B., **Sihi, D.**, and Karimi, N. (2019). Heavy metals and photosynthesis: Recent Developments. In: Photosynthesis, Productivity, and Environmental Stress. Ahmad, P., Ahanger, M. A., Alyemeni, M. N., and Alam, P. (Eds), Wiley-Blackwell.
3. Dari, B., and **D. Sihi**. (2018). Future of Rice Crop Under Enriched CO_2 Environment. In: Advances in Crop Environment Interaction, S. K. Bal, J. Mukherjee, B. U. Choudhury, and A. K. Dhawan (Eds), Springer Singapore. DOI: 10.1007/978-981-13-1861-0_17.
4. Dari, B. and **Sihi, D**. Heavy Metals as Emerging threats in Indian Soils. In: Environmental Nexus in India, Mishra, B. B. (Ed), Advances in Asian Human Environmental Research. Hartemink, A. E. (Series Ed), Springer Nature Switzerland AG (under review).

Technical Report

- Osborne, T.Z., Bochnak, A.M.K., Vandam, B., Duffy, S., Inglett, K.S., Inglett, P.K., and **Sihi, D**. Hydrologic Effects on Soil Stability - Loss, Formation, and Nutrient Fluxes. University of Florida, Final Report to the St. Johns River Water Management District, Palatka, FL, 2014, 114 pp.

Datasets

- **Sihi D**; Salazar Ortiz M; Mayes M (2020): Soil Chamber Fluxes (CO2 and CH4) across a catena in the Luquillo Experimental Forest, Puerto Rico. A Comprehensive Framework for Modeling Emissions from Tropical Soils and Wetlands. DOI: 10.15485/1632882.
- **Sihi D**; López-Lloreda C; M. Brenner J; K. Quinn R; R. Phillips J; Mayes M (2020): Soil chemistry data across a catena in the Luquillo Experimental Forest, Puerto Rico. A

Comprehensive Framework for Modeling Emissions from Tropical Soils and Wetlands. DOI: 10.15485/1618870.

- **Sihi D**; López-Lloreda C; M. Brenner J; K. Quinn R; R. Phillips J; D. Newman B; Mayes M (2020): Porewater data across a catena in the Luquillo Experimental Forest, Puerto Rico. A Comprehensive Framework for Modeling Emissions from Tropical Soils and Wetlands. DOI: 10.15485/1618869.

Grant Writing Activities

External Funding

- "Upscaling soil organic carbon measurements at the continental scale by understanding emergent ecosystem properties and spatial representativeness analysis", National Science Foundation, Macrosystem Biology and NEON-Enabled Science, PI, @300,000 (total), $252,610 for Emory (Award #: 2106137).
- "Using probability distribution function as a scaling approach to incorporate soil heterogeneity into biogeochemical models for greenhouse gas predictions", US Department of Energy Office of Science, Earth System Science (DE-FOA-0001855), PI, @ $300,000 (total), $252,000 for Emory (Awarded).
- "Understanding biophysical drivers of the CH_4 source–sink transition in Northern Forests", National Science Foundation, Division of Environmental Biology, Co-PI, @$1.47M (total), $309,517 for Emory (Rejected).
- "Rhizosphere mediation of soil-atmosphere greenhouse gas exchange in a warming, drying and more extreme climate", Australian Research Council, Discovery Grant, Co-PI, @$460,520 (total), $30,777 for Emory (Pending decision).
- "Managing organic inputs with irrigation to improve soil quality and crop productivity in sandy soils", US Department of Agriculture, AFRI, FAS, Co-PI, @$749,564 (total), $100,002 for Emory (Pending decision).
- "Evaluating Agricultural Soil Organic Matter Dynamics Under Cover Crop, Manure, and Biochar Amendments", US Department of Agriculture, AFRI, FAS, PI, @ $300,000 (total), $249,000 for Emory (Pending decision).
- "Measuring & modeling agricultural carbon sequestration through a microbial lens", Halo call for Carbon sequestration in agricultural soils from Valent, PI, @$100,000 (pending decision).

Internal Funding

- "Modeling Soil Carbon for Climate-Smart and Sustainable Future", Halle Institute for Global Research, Emory University and The Halle Foundation Collaborative Research Grant, Sept 2020, PI, @$30,000 (Accepted).
- "Building Soil Organic Matter through Biochar Amendment: A Climate-Smart Approach to Ensure Food Security", University Research Council, Emory University, June 2021, PI, @ $29,388 (Accepted).
- "Managing soil health in an organic food production system under changing climate", Program to Enhance Research and Scholarship, Emory College of Arts and Sciences, Emory University, March 2021, PI, @$4,000 (Accepted).
- "Exploring the links between soil health with pregnancy outcomes on nutritional frontiers", 2021 EGHI Faculty Seed Grants, Emory Global Health Institute, Emory University, April 2021, PI (Rejected).

Other External and Internal Funding

- "Water equity and racial justice in Atlanta, Georgia", Emory Resilience and Sustainability Collaboratory (RSC) Proposal to Apple, one of the 20 RSC team members (Pending decision).

- "Implications of teacher knowledge and attitudes: A cross-national exploration of secondary math teacher preparation", Center for Science of Information's Frontiers Education Program, NSF Science and Technology Center, Co-I, Purdue University, Sept 2019, @$7,469 (Accepted).
- "Linking Root Traits with Soil Carbon", submitted to the Climate Change Science Institute, Oak Ridge National Laboratory, Apr 2018, Co-I, @$28,000 (Accepted).
- "FTICRMS and EEMs analysis to assess if the molecular composition of dissolved organic C (DOC) alters with warming of subtropical wetland soils", submitted to the Environmental Molecular Science Laboratory, Pacific Northwest National Laboratory, Graduate Student Research Award, May 2015 (Accepted).

Research-related Skills

- Software expertise: Statistical packages and programing language (R, FORTRAN, Matlab, NetLogo, SAS, and JMP), Bayesian Analysis (JAGS, OpenBUGS), STELLA (a software for systems simulation), ArcGIS, MS office suite, and a Decision Support System (DSS) named as InfoRCT (Information of Use of Resource Conservation Technologies in Agriculture) Simulation Model.
- Expertise on instrumentations: Gas Chromatography (GC), High performance liquid chromatography (HPLC), Gas chromatography–mass spectrometry (GC-MS), Shimadzu TOC-L analyzer, Auto Analyzer (AA), Infra-red Gas Analyzer (IRGA, LI-COR 8100, and GASMET), Microplate Fluorometer, UV-VIS Spectrophotometer, Atomic Absorption Spectrophotometer (AAS), Flame Emission Spectrophotometer (FES), BIOLOG (EcoPlate), Polarography, Distillation apparatus, Potentiometer and Electrical Conductivity Meter.
- Analytical Techniques: Greenhouse gas flux measurements, Soil organic matter decomposition experiments, Soil Enzyme and Microbial Kinetic Study, Stable Isotope Enrichment techniques, and Soil and water physico-chemical properties.
- Certified analyst for TOC and TN on Shimadzu TOC-L analyzer, Wetland Biogeochemistry Laboratory (NELAP-Certified Laboratory, DOH ID: E72949), Institute of Food and Agricultural Science, University of Florida, 2014-15.

Professional Affiliations

Professional society memberships

- American Geophysical Union (AGU), 2012 to present
- Ecological Societies of America (ESA), 2013 to present
- Soil Science Society of America (SSSA), 2011 to present
- Soil Ecology Society (SES), 2017 to present
- American Association for the Advancement of Science (AAAS), 2016 to present

Working group memberships

- Analyzing Observations and Models of Carbon, Energy, and Water Fluxes: Working Group Member, a collaboration between US DOE's RUBISCO (Reducing Uncertainties in Biogeochemical interactions through synthesis and computation) Scientific Focus Area and the AmeriFlux Management Project (AMP), 2019 to present.
- Improved Processed Modeling and Mapping of Tidal Wetland Methane Emissions: Working Group Member, Coastal Carbon Research Coordination Network (CCRCN), 2019 to present
- Ecological Forecasting Initiative (EFI): Working Group Member, Cyberinfrastructure, Methods and Tools, 2019 to present
- National Ecological Observatory Network (NEON) Terrestrial Biogeochemistry and Microbial Technical Working Groups (TWGs) member, 2017 to present.

Teaching Experiences

Teaching, Emory University

- Fund. Concepts in Soil Sci (ENVS 285); Spring 2021
- Biogeochemistry and Environmental Health (ENVS 385/585); Fall 2021

Teaching, Professional Network

- Flux Course, Summer 2019

Guest Lecturer

- Taught a lecture on "*Soil: Basic characteristics and classification*" in Soil: Genesis, Nature, and Characterization (GEOG 340), Geography Department, College of Liberal Arts and Sciences, Frostburg State University, Frostburg, MD, Fall 2016.

Co-Teaching/Teaching Assistant, University of Florida

- Environmental Biogeochemistry (both in-class and distance-education sections) (SWS 4223 and SWS 5224); Spring of 2012, 2013, and 2014
- Introduction to soils in the environment Lab (SWS 3022L); Fall of 2013 and 2014
- Introduction to soils in the environment Lecture (SWS 3022); Fall of 2012

Mentoring Experiences

Postdoctoral research scholar, Emory University

- Zhuonan Wang

Graduate student, Emory University

- Marissa Duckett, doctoral student rotation mentor, Population Biology, Ecology and Evolution
- Xorla Ocloo, doctoral dissertation committee, Population Biology, Ecology and Evolution
- Ayanna Jones, doctoral dissertation committee, Chemistry
- Yanyu Wang, master thesis committee, Environmental Sciences
- Abdul Baseer Khan, visiting PhD scholar

Undergraduate student, Emory University

- Kristina Trifonova, SURE Affiliate fellow, Summer 2021
- Ann, Faculty research advisor for CHEM 399R (Introduction to Research), Summer 2021

Mentoring programs outside University

- Mentor in Women in Soil Ecology Mentorship program, 2018-2019
- Mentoring365, AGU Fall Meeting, 2018
- UMP Mentor, AGU Fall Meeting, 2017
- Sharing Science Mentor, AGU Fall Meeting, 2016
- PlantingScience Scientist mentor, 2016-17.
- Supervised undergraduate intern and hourly employee on soil sample collection, processing, and analysis for total nutrients (TC and TN), University of Maryland Center for Environmental Science Appalachian Laboratory during Summer, 2016.
- Mentor in Gator Launch Mentoring Program, Career Resource Center, University of Florida, FL, USA, 2014-2015
- Mentor in University Multicultural Mentor Program (UMMP), University of Florida, FL, USA, 2013-2014, 2014-2015
- Mentor in Undergraduate Mentoring Program, Society of Wetland Scientists Annual Meeting, 2013, 2014
- Tutoring (voluntary) for GRE Exam to Haitian students for their enrolment in IFAS Program, University of Florida, 2013

- Mentor in Soil and Water Science Department Graduate-Undergraduate Mentorship Program, University of Florida, Florida, USA (2013)
- Mentor in Yulee-Diamond Global Mentorship Program, University of Florida, Florida, USA (2012-2013)

Workshop Participations (¶ *fully-funded*)

- Participant for SPRUCE Isotope and Methane Workshop, Oak Ridge National Laboratory, Oak Ridge, TN, Feb 11-13, 2020.
- ¶ Invited participant for CCRCN methane working group meeting, in partnership with AmeriFlux Year of Methane network initiative, NASA Ames Research Center, Moffett Field, CA, Dec 7-8, 2019.
- Invited participant for RUBISCO-AmeriFlux Working Group Meeting, Lawrence Berkeley National Laboratory, Berkeley, CA, USA, Oct 15-17, 2019.
- ¶ Accepted participant for NEON Science Summit, Earth Lab, University of Colorado, Boulder, CO, USA, Oct 15-17, 2019 (declined).
- ¶ Invited participant for MARSh (**M**odEx **A**pproaches to **R**esearch on **Sh**orelines) workshop, Oak Ridge National Laboratory, Sept 19-20, 2019.
- ¶ Accepted participant for WOODSTOICH 4 workshop, Flathead Lake Biological Station, University of Montana, MT, USA, Aug 14-19, 2019.
- ¶ Accepted participant for 2019 CLM/CTSM Tutorial, NCAR Mesa Laboratory, Boulder, CO, USA, Feb 4-8, 2019.
- ¶ Invited participant for Flux Course Revamp Workshop, Indiana University, Bloomington, IN, USA, Oct 26, 2018.
- Invited participant for AmeriFlux Decadal Synthesis Workshop, Lawrence Berkeley National Laboratory, Berkeley, CA, USA, Aug 23-24, 2018.
- ¶ Co-organized Root trait and soil carbon workshop, Oak Ridge National Laboratory, Oak Ridge, TN, USA, July 31-Aug 1, 2018.
- Accepted participant for New Advances in Carbon Cycle Modeling mini-symposium and workshop, Northern Arizona University, Flagstaff, AZ, USA, May 20-26, 2018.
- ¶ Accepted participant for Ecological Knowledge and Predictions: Integrating Across Networks and National Observatories workshop, University of Arizona, Tucson, AZ, USA, Feb 19-21, 2018.
- ¶ Accepted ISMC candidate for CZO / LTER / NEON / ISMC Joint Workshop, NEON HQ in Boulder Colorado, USA, Feb 13-15 2018.
- ¶ Accepted participant for International Soil Carbon Network (ISCN) Hackathon, New Orleans, LA, Dec 10, 2017.
- ¶ Accepted Participant for the Short Course "Bayesian Modeling for Socio-Environmental Data", National Socio-Environmental Synthesis Center (SESYNC), Annapolis, Maryland, USA, Aug 15-25, 2017.
- Accepted Participant for the Short Course "Individual/Agent-based Modeling", Humboldt State University, Arcata, California, USA, July31-Aug 4, 2017.
- ¶ Accepted Participant for 10th Annual Flux Course, AmeriFlux, University of Colorado Mountain Research Station, Niwot Ridge, Colorado, USA, July 10-21, 2017.
- ¶ Service to Activism in the Everglades: a workshop led by former Florida Governor and Senator Bob Graham, Bob Graham Center for Public Service, University of Florida, Mar 22, 2014.

Invited Talks

- **Sihi, D.** and Dari, B. Evaluating Soil Organic Matter Dynamics Under Cover Crop and Biochar Amendment. ASA-CSSA-SSSA Meeting, Salt Lake City, UT, Nov 7-10, 2021.

- **Sihi, D.** and Gerber, G. Surprising Dynamics of Organic Matter for Predominantly Organic Soil in Microbial Explicit Models: A Food for Thought for Evaluating Efficacy of Peatland Restoration Efforts in a Warmer World. ASA-CSSA-SSSA Meeting, Salt Lake City, UT, Nov 7-10, 2021.
- **Sihi, D.** Evaluating soil and ecosystem carbon dynamics at the continental scale by leveraging data available from the national ecological observatory network, in session *"Revolutionizing our understanding of scale: How the NEON network enables innovative research into the complexities of ecological phenomena across spatio-temporal scales"*, Ecological Society of America Meeting (virtual), Aug 3-6, 2020.
- **Sihi, D.** Exploring soil-climate-health-policy nexus through sustainability lens, Emory Climate Talks, Emory University, Atlanta, GA, June 8, 2020 (delivered via zoom).
- **Sihi, D.** Soil organic matter decomposition and greenhouse gas emissions: A dynamic interplay of physical and biogeochemical processes, Department of Geography, University of Zurich, Zurich, Switzerland, Apr 29, 2020 (delivered via zoom).
- **Sihi, D.** Measuring and Modeling Soil Organic Matter and Greenhouse Gas Dynamics: A Tale of a Biogeochemist, University of Maryland Center for Environmental Science Appalachian Laboratory, Apr 23, 2020 (delivered via zoom).
- **Sihi, D.** Forest Ecosystem Carbon and Greenhouse Gas Dynamics: Experiences and Future Research Directions, Department of Biology, West Virginia University, March 12, 2020.
- **Sihi, D.** Measuring and Modeling Biogeochemical Feedbacks in Terrestrial Systems and Terrestrial-Aquatic Interfaces: State of the Science and Future Research Directions, Department of Atmospheric and Environmental Sciences University at Albany, SUNY, Feb 17, 2020.
- **Sihi, D.** Terrestrial Biogeochemistry and Greenhouse Gas Dynamics under Changing Climate: An Interdisciplinary Perspective, Department of Environmental Sciences, Emory University, Feb 3, 2020.
- **Sihi, D.** Carbon-climate feedback in the terrestrial ecosystem: Why should we care about soil?, RUBISCO Soil Carbon Dynamics, RUBISCO AmeriFlux Working Group Meetings, and RUBISCO SFA Project Meeting, InterContinental San Francisco, Union Square, San Francisco, CA, Dec 12, 2019.
- **Sihi, D.** Quantifying Carbon-Climate Feedbacks and Greenhouse Gas Dynamics in Terrestrial Ecosystems through Soil Microbial Lens, Biology Department, Syracuse University, Dec 5, 2019.
- **Sihi, D.** Soil: A Multifunctional Natural Resource to Sustain Life, Department of Soil Science, University of Manitoba, Nov 26, 2019.
- **Sihi, D.** Soil Organic Matter Decomposition and Greenhouse Gas Emissions: A Dynamic Interplay of Different Realms of Ecology, Department of Biological Sciences, Tennessee State University, May 28, 2019.
- **Sihi, D.** Soil organic matter decomposition and greenhouse gas emissions: A dynamic interplay of physical and biogeochemical processes, University of Louisiana at Lafayette, May 15, 2019.
- **Sihi, D.** Mechanistic representation of soil and ecosystem fluxes of greenhouse gases using a model-data fusion approach, UMCES Appalachian Laboratory, Frostburg, MD, Nov 9, 2017.
- **Sihi, D.** Measurements and modeling of soil organic matter decomposition and greenhouse gas emission: Mechanistic representation of microbial and enzymatic processes, Oak Ridge National Laboratory, Oak Ridge, TN, Feb 6, 2017.
- **Sihi, D.** Measurements and modeling of decomposition and greenhouse gas emission from soil: Insights from microscale to ecosystem scale studies, Center for Ecosystem Science and Society, Northern Arizona University, Flagstaff, AZ, Dec 6, 2016.
- **Sihi, D.**, Davidson, E. A., Savage, K., Liang, Dong, Diaz Liomari. Coupled Simulation of CO_2, CH_4, and N_2O Fluxes from a Forested Wetland Using Data-Model Fusion Approach. ASA-CSSA-SSSA Meeting, Phoenix, AZ, Nov 6-9, 2016.

- **Sihi, D.** Processes and modeling of temperature sensitivity of organic matter decomposition in subtropical wetlands. UMCES Appalachian Laboratory, Frostburg, MD, May 21, 2015.
- **Sihi, D.,** Inglett, P.W., Gerber, S., and Inglett, K.S. Temperature sensitivity of organic carbon processing under two contrasting rates of warming. 15th Soil and Water Science Department Forum, University of Florida, Gainesville, FL, Sept 18, 2014.

Presentations at Conferences and Symposiums

- **Sihi, D.** and Dari, B. Biochar Amendment Influenced Distribution of Soil Organic Matter Fractions: A Climate-Smart Approach to Ensure Food Security. Ecological Society of America Meeting (Virtual), Aug 2-6, 2021.
- **Sihi, D.** and Gerber, S. Challenges of using microbial explicit models for evaluating organic matter decomposition in predominantly organic soils. 3rd ISMC Conference ─ Advances in Modeling Soil Systems (virtual), May 18-22, 2021.
- **Sihi, D.**, Davidson, E. A, Savage, K., and Hagedorn, J. Numerical representation of soil hot spots and hot moments of carbon dioxide, methane, and nitrous oxide fluxes using microsite probability density functions. American Geophysical Union Fall Meeting (virtual), Dec 1-17, 2020.
- **Sihi, D.**, Zheng, J., Brenner, J., Phillips, J., Singh, S., Pet-Ridge, J., Jagadamma, S., Lioreda, C. L., and Mayes, M. A. Oscillating Redox Conditions Controlled Greenhouse Gas Dynamics in Wet Tropical Forest Soils. American Geophysical Union Fall Meeting, Washington, Dec 9-14, 2019.
- **Sihi, D.**, Mayes, M. A., Xu, X., O'Connell C., Silver, W., Lloreda C. L., Yudkin, B., Zheng, J., Quinn, R., Brenner, J., Phillips, J., Gonzalez, G., and Newman, B. Improved representations of methane emissions from wet tropical forest soils using a microbial functional group-based model. DOE Environmental System Science (ESS) PI meeting, Potomac, MD, Apr 30-May1, 2019.
- **Sihi, D.**, Mayes, M. A., Xu, X., O'Connell C., Silver, W., Lloreda C. L., Yudkin, B., Quinn, R., Zheng, J., Brenner, J., Phillips, J., Gonzalez, G., and Newman, B. Evaluating a microbial functional group-based model to explain greenhouse gas productions and consumptions from Puerto Rican tropical forest soils. American Geophysical Union Fall Meeting, Washington DC, Dec 10-14, 2018.
- **Sihi, D.**, Liang, J., Hoffman, F. M., Gu, L. and Mayes, M. A. Soil respiration synthesis across AmeriFlux/FluxNet sites, 2018 AmeriFlux PI Meeting, Bloomington, IN, Oct 24-25, 2018.
- **Sihi, D.** Ecological Forecasting of Soil, Ecological Knowledge and Predictions: Integrating Across Networks and National Observatories, Tuscon, AZ Feb 19-21, 2018.
- **Sihi, D.** Data, Information, Knowledge, and Wisdom Hierarchy**,** Ecological Forecasting of Soil, Ecological Knowledge and Predictions: Integrating Across Networks and National Observatories, Tuscon, AZ, Feb 19-21, 2018.
- **Sihi, D.** Training, Education, and Outreach, Ecological Forecasting of Soil, Ecological Knowledge and Predictions: Integrating Across Networks and National Observatories, Tuscon, AZ, Feb 19-21, 2018.
- **Sihi, D.** Achieving ISMC mission by leveraging CZO-LTER-NEON activities, CZO/LTER/NEON/ISMC Joint Workshop, NEON HQ in Boulder Colorado, USA, Feb 13-15, 2018.
- **Sihi, D.**, Davidson, E. A, Savage, K., and Liang, D. Getting beyond hand-waving about microsites with numerical representations of trace gas production and consumption, American Geophysical Union Fall Meeting, New Orleans, LA, Dec 11-15, 2017.
- **Sihi, D.,** Davidson, E. A, Min Chen, Savage, K., Richardson A., Keenan, T., and Hollinger, D. Merging a Mechanistic Enzymatic Model of Temperature, Moisture, and Substrate Supply Effects on Soil Respiration into an Ecosystem Model in Two Forests of Northeastern USA, European Geophysical Union General Assembly, Vienna, Austria, Apr 23-28, 2017 (PICO talk)

- **Sihi, D.,** Min Chen, Davidson, E. A, Savage, K., Richardson A., Keenan, T., and Hollinger, D. Integrating Measurements and Models of Water Limitation on Soil and Ecosystem Respiration in Two New England Forests from Hourly to Decadal Timescales. American Geophysical Union Fall Meeting, San Francisco, CA, Dec 12-16, 2016.
- **Sihi, D.** and Davidson, E. A. Modeling the dynamics of CO_2 and CH_4 fluxes at soil microsite scale. Ecological Society of America Annual Meeting, Fort Lauderdale, FL, held Aug 7-12, 2016.
- **Sihi, D.**, Davidson, E. A., and Savage, K. Modeling soil methane fluxes along the concentration gradient of oxygen. International Soil Modeling Conference, Austin, TX, Mar 29-April 1, 2016 (*Lightning talk and poster*).
- **Sihi, D.**, Inglett P. W., and Inglett, K. S. Warming Effects Enzyme Turnover During Decomposition of Subtropical Peat. American Geophysical Union Fall Meeting, San Francisco, CA, Dec 14-18, 2015 (*Poster*).
- **Sihi, D.,** Gerber, S., Inglett, K.S., and Inglett, P.W. Modeling the Response of Soil Organic Matter Decomposition to Warming: Effects of Dynamical Enzyme Productivity and Nuanced Representation of Respiration. American Geophysical Union Fall Meeting, December, San Francisco, CA, Dec 15-19, 2014 (*poster*).
- **Sihi, D.,** Inglett, K.S., and Inglett, P.W. Temperature Sensitivity of Soil Organic Matter Decomposition in Subtropical Wetlands: Assessing the Role of Microbial Carbon Use Efficiency. ASA-CSSA-SSSA, Long Beach, CA, Nov 2-5, 2014 (*Runner up, oral presentation*).
- **Sihi, D.,** Papacek, J. R., Foster, D. K., Inglett, K.S., and Inglett, P.W. The Importance of Enzyme Kinetics in the Temperature Sensitivity of Organic Matter Decomposition in Wetlands. ASA-CSSA-SSSA Meeting, Long Beach, CA, Nov 2-5, 2014 (*One of the top three winners, poster presentation*).
- **Sihi, D.,** Gerber, S., Inglett, K.S. and Inglett, P.W. Mathematical Formulation of Carbon Use Efficiency Affects Warming Response in Wetland Decomposition Models. Joint Aquatic Science Meeting, Portland, OR, May 18-23, 2014 (*Poster*).
- **Sihi, D.,** Gerber, S., Inglett, K.S. and Inglett, P.W. Inclusion of maintenance respiration alters temperature response in microbial soil organic matter decomposition model for wetlands. Water Institute Symposium, University of Florida, Gainesville, FL, Feb 11-12, 2014 (*poster*).
- **Sihi, D.**, Inglett P.W. and Inglett K.S. Temperature sensitivity of anaerobic C processing: The importance of C quality vs. nutrient availability. ASA-CSSA-SSSA Annual Meetings, Tampa, FL, Nov 3-6, 2013 (*One-of the top three winners, oral presentation*).
- **Sihi, D.**, Inglett P.W. and Inglett K.S. Temperature Sensitivity of Soil Organic Matter Decomposition in a Subtropical peatland: The Importance of Substrate Quality and Phosphorus Loading. Annual Meeting of Society of Wetland Scientists, Duluth, MN, June 2-6, 2013 (*Poster*).
- **Sihi, D.,** Gerber, S., Inglett, K.S. and Inglett, P.W. Incorporating microbial physiology into soil organic carbon (SOC) decomposition models. Soil and Water Science Department Forum, University of Florida, Gainesville, FL, Sept 6, 2013 (*Poster*).
- **Sihi, D.,** Gerber, S., Inglett, K.S. and Inglett, P.W. Incorporating microbial physiology in soil organic matter (SOM) decomposition models for wetlands. SWSSAC/FAESS/ SWFAEP joint conference, Tampa, FL, Oct 6-9, 2013 (*Poster*).
- **Sihi, D.**, Gerber, S. Inglett K.S., and Inglett P.W. Inclusion of maintenance respiration alters temperature response in microbial soil organic matter decomposition model. Graduate Student Research Day, University of Florida, Gainesville, FL, Oct 29, 2013 (*Poster*).
- **Sihi, D.**, Inglett, P. W. and Inglett, K. S. Effect of organic matter quality, P-loading and temperature on carbon biogeochemistry in subtropical peats. Graduate Student Research Day, University of Florida, Gainesville, FL, Oct 23, 2012 (*poster*).
- **Sihi, D.**, Inglett, P. W., and Inglett, K. S. Temperature sensitivity of greenhouse gas (CO_2 and CH_4) production and flux in a subtropical wetland: The importance of organic matter quality and

nutrient availability. Soil and Water Science Department Forum, University of Florida, Gainesville, FL, Sept 7, 2012 (*poster*).

- Pathak H. **Sihi, D.**, Sharma, D. K. and Inglett, P. W. Greenhouse Gas emission from Agricultural Wetland (Rice Field): Organic vs. Conventional farming. 9th INTECOL International Wetlands Conference, Orlando, FL, June 3-8, 2012 (*poster*).
- **Sihi, D.**, Sharma, D. K., Pathak, H., Lata and Sharma, O. P. Assessment of Environmental Quality under organic and conventional basmati rice cultivation. Crop Improvement. The Crop Improvement Society of India. International Conference on Preparing Agriculture for Climate Change (ICPACC), Punjab Agricultural University, Ludhiana, Punjab, India, Feb 6-8, 2011 (*poster*).
- **Sihi, D.**, Sharma, D. K., Pathak, H. and Sharma, O. P. Ecological and economic impact of organic basmati cultivation on ecosystem services. 5th International Nitrogen Conference, New Delhi, India, Dec 3-7, 2010 (*Poster*).

Co-authored Presentations (Invited*)**

- *Mayes, M. A., **Sihi, D.**, Xu, X., Ortiz, M. S., O'Connell C., Silver, W., López-Lloreda, C. Modeling Methane Emissions in Anaerobic Microsites Along a Catena in Puerto Rico. American Geophysical Union Fall Meeting (virtual), Dec 1-17, 2020.
- Davidson, E. A., Fraver, S., Hollinger, D. Y., Richardson, A. D., Savage, K. E., **Sihi, D.**, and Teets, A. F. Multi-Decadal Carbon Cycle Measurements at the Howland Forest AmeriFlux Site. American Geophysical Union Fall Meeting (virtual), Dec 1-17, 2020.
- Oikawa, P., Holmquist, J., Megonigal, P., Russell, S., Knox, S., Najarro, M., Windham-Myers, L., Stuart-Haentjens, E., McNicol, G., Needelman, B., **Sihi, D.**, Forbrich, I., Tang, J., Bridgham, S., Lonneman, M., Wolfe, J., Fluet-Chouinard, E., and Arias-Ortiz, A. United States Methane Budget from Tidal Wetlands: Developing an Open-source Database of Methane Measurements and Process-based Models. American Geophysical Union Fall Meeting (virtual), Dec 1-17, 2020.
- Gerber, S. and Sihi, D. When organic matter is the soil matrix: Challenges of using microbial explicit decomposition models in predominantly organic soils. Ecological Society of America Meeting (virtual), Aug 3-6, 2020.
- *Davidson, E. A. and **Sihi, D.** Carbon Climate Feedbacks Attributable to Soil Carbon Stabilization and Destabilization Processes Compared to the Difference between Simulated Ecosystem Photosynthesis and Respiration. AGU Chapman Conference on Understanding Carbon Climate Feedbacks, San Diego, CA, Aug 26-29, 2019 (*one of the plenary talks*).
- Mayes, M. A., Brenner, J., Phillips, J., **Sihi, D.**, Song, Y., Ottinger, S., López C. L., Singh, S., Jagadamma, S., Tfaily, M., Paša-Tolic, L., and Pan, C. Topographic Controls over Greenhouse Gas Emissions from Puerto Rican Rainforest Soils. 14th Annual Genomics of Energy & Environment Meeting, US DOE JGI, San Francisco, CA, Apr 2-5, 2019.
- Mayes, M. A., Brenner, J., Phillips, J., Quinn, R., Lloreda, C. L., Yudkin, B., Campa, M. F., **Sihi, D.**, Zheng, Song, Y., Hazen, T. C., Zheng, J., O'Connell, C., Silver, W., and Newman, B. Topographic controls over Greenhouse Gas Emissions from Puerto Rican Tropical Rainforest Soils. DOE Environmental System Science (ESS) PI meeting, Potomac, MD, Apr 30-May1, 2019.
- *Davidson, E. A, **Sihi, D.**, Savage, K., and Hagedorn, J. Getting beyond hand-waving about microsites with numerical representations of trace gas production and consumption, International Soils Meeting, San Diego, CA, Jan 6-9, 2019.
- *Mayes, M. A., Song, Y., Wang, D., **Sihi, D.**, Quinn, R., Phillips, J. R., Brenner, J., Pan, C., Yao, Q., Johnston, E. R., Kim, M., and Konstantinidis, K. T. Upscaling Strategies for Quantitative Modeling of Soil Microbial Metagenomics in a Biogeochemical Model. American Geophysical Union Fall Meeting, Washington DC, Dec 10-14, 2018.
- Malhotra, A. Abramoff, R. Z., Hanson, P. J., Harden, J. W., Pries, C. H., Jackson, R. B., McCormack, M. L., Norby, R. J., **Sihi, D.**, Sulman, B. N., Thornton, P. E., Tumber-Davila, S. J.,

Walker, A., Werbin, Z., and Iversen, C. M. The persistence of root carbon in soil: data and modeling gaps. American Geophysical Union Fall Meeting, Washington DC, Dec 10-14, 2018.

- Mayes, M. A., Quinn, R., Lloreda, C. L., Brenner, J., Phillips, J., Yudkin, B., **Sihi, D.**, Zheng, J., O'Connell, C., Silver, W., and Newman, B. Controls over Greenhouse Gas Emissions from Puerto Rican Tropical Rainforest Soils, Department of Energy's Office of Biological and Environmental Research (BER), Potomac, MD, May 1-2, 2018.
- Mayes, M. A., Song, Y., Yao, Q., Pan, C., Wang, G., Yang, X., Turner, B. L., Wright, J. S., Johnston, E. R., Kim, M., Konstantinidis, K., Quinn, R., **Sihi, D.**, Tfaily, M. M., Pasa-Tolic, M. Incorporating Microbial "Omics" Information into a Soil Biogeochemical Model: A Novel Model Scheme to Regulate Microbial Functions and Soil Carbon Dynamics, Ecological Society of America, New Orleans, LA, Aug 5-10, 2018.
- *Davidson, E. A, **Sihi, D.,** and Savage, K. Integrated measurements and modeling of CO_2, CH_4, and N_2O fluxes using soil microsite frequency distributions, European Geophysical Union General Assembly, Vienna, Austria, Apr 23-28, 2017.
- Inglett, P. W., **Sihi, D.**, Medvedeff, C., and Inglett, K. S. What's in store? Interactive effects of warming, nutrient- and carbon-limitation on decomposition and greenhouse gas production in wetlands. ASA-CSSA-SSSA Meeting, Phoenix, AZ, Nov 6-9, 2016.
- *Davidson, E. A., **Sihi, D.**, and Savage, K. The Soil Sink for Nitrous Oxide: Trivial Amount but Challenging Question. American Geophysical Union Fall Meeting, San Francisco, CA, Dec 14-18, 2015.
- Inglett P. W., **Sihi, D.**, and Inglett, K. S. Warming rate drives microbial limitation and enzyme expression during peat decomposition. American Geophysical Union Fall Meeting, San Francisco, CA, Dec 14-18, 2015.
- Gerber, S., **Sihi, D.**, Inglett, P. W., and Inglett, K. S. Substrate limitation in microbial decomposition models. Ecological Society of America Annual Meeting, Baltimore, MD, Aug 9-14, 2015.
- Inglett, K. S., Goswami, S., **Sihi, D.**, and Inglett, P. W. Temperature sensitivity of hydrolytic enzymes: Application to decomposition and greenhouse gas emission. Greater Everglades Ecosystems Restoration, Coral Springs, FL, April 21-23, 2015.
- Goswami, S., Inglett, P.W., **Sihi, D.**, and Inglett, K.S. Temperature Sensitivity of Enzyme Kinetic Parameters in Subtropical Wetland Soils of Contrasting Nutrient Status. Soil and Water Science Department Forum, University of Florida, Gainesville, FL, Sept 6, 2013.

Service

Peer-review/Editorial Activities

- Associate Editor, PLOS ONE, 2021 to present.
- Academic Editor: PLOS ONE, 2018 to 2021.
- Associate Editor: Agronomy Journal (Soils section), 2018 to present.
- Editor: Soil Methods On-line: ACS320. Methods of Soil Analysis, ASA, CSSA, SSSA Books, 2017 to present.
- Review Editor: Frontiers in Soil Science (Soil Biogeochemistry & Nutrient Cycling Section), 2021 to present.
- Reviewer Board: Forests, 2020 to present.
- PeerJ Ambassador, 2019 to present.
- Peer-reviewed for scholarly journals: Nature Climate Change, Ecology Letters, Global Change Biology, Global Change Biology Bioenergy, Journal of Advances in Modeling Earth Systems, Global Ecology and Biogeography, Earth's Future, Soil Biology and Biochemistry, JGR-Biogeosciences, JGR-Earth Surface, Science of the Total Environment, Agricultural and Forest Meteorology, Ecosystems, Biogeosciences, Biogeochemistry, Environmental Reviews, Plant and Soil, Geoderma, PLOS ONE, Ecological Modelling, Atmospheric Environment, Applied Soil

Ecology, PeerJ, Environmental Monitoring and Assessment, GeoHealth, Soil Science Society of America Journal, Water, Soil Systems, Wetlands, Pedosphere, Experimental Agriculture.
- Peer-reviewed Grant Proposal for Natural Environment Research Council (NERC), UK and Natural Sciences and Engineering Research Council of Canada (NSERC), Canada.
- Peer-reviewed for Intergovernmental Panel on Climate Change (IPCC): Special report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways (SR1.5)
- Peer-reviewed for Conference Proceedings: Scientific papers for 19th Organic World Congress 2017, 5th ISOFAR (International Society of Organic Agricultural Research) Scientific Conference "Innovative Research for Organic 3.0", New Delhi, India.

Leadership Activities at National/International Level
- Member at Large, Soil Ecology Society, 2020-2022.
- Secretary, Ecological Society of America (ESA), Biogeosciences Section, 2020-2021.
- Ecological Society of America (ESA) Publication Committee, 2019-2021.
- Ecological Society of America (ESA) Rapid Response Team Member, 2019-2022.
- Curriculum committee member, Flux Course, 2018-2021.
- Session convener at 2020 AGU Fall Meeting, *"Integrating Molecular Insights to Advance Predictive Biogeochemistry: Theories, Observations, and Modeling (poster)"*.
- Moderator, *Session(s): "Soil Carbon and Greenhouse Gas Emissions-General Oral I and II"*, ASA-CSSA-SSSA annual meeting, San Antonio, TX, Nov 10-13, 2019.
- Society of Transnational Academic Researchers (STAR) Fellow, 2019-present.
- Talent Pool Strategy Task Force member, AGU, 2017-2018.
- Golden Opportunity Scholar and Mentor Selection Committee, ASA-CSSA-SSSA, 2017-2018.
- Reviewer, 2018 AGU Fall Meeting General Student Travel Grant Applications.
- Session chair at 2018 AGU Fall Meeting, *"Estimating Critical Biogeochemical Processes Across the Soil–Plant–Atmosphere Continuum Using Cutting-Edge Techniques (eLightning)"*.
- Panel Member, AGU Different Career Tracks Panel, AGU Fall Meeting, New Orleans, LA, 2017.
- OSPA Judge, AGU Fall Meeting, San Francisco, CA, 2016 and AGU Fall Meeting, New Orleans, LA, 2017.
- Virtual Poster Showcase Judge, AGU Fall Meeting, New Orleans, LA, 2017.
- Poster Judge, Wetland soils section, ASA-CSSA-SSSA Meeting, Phoenix, AZ, 2016.
- Advisory Panel of Eosense environmental gas monitoring, 2016.

Leadership Activities at University Level
- Udall Scholarship Panel Member, Office for Undergraduate Education, Emory College of Arts and Sciences, Emory University, 2020-2021.
- Grants and Scholarship Committee Member, Department of Environmental Sciences, Emory College of Arts and Sciences, Emory University, Spring 2021.
- GHG and Climate Solutions committee member, Emory Office of Sustainability Initiatives, Emory University, Fall 2020.
- Diversity, Inclusion, and Equity Committee member, Department of Environmental Sciences, Emory University, Fall 2020.
- Undergraduate curriculum committee member, Department of Environmental Sciences, Emory University, Fall 2020.
- Search committee member, University of Maryland Center for Environmental Science Librarian at Chesapeake Biological Laboratory, Fall 2016.