Debjani Sihi
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Employment History

- Post-Doctoral Research Associate, Environmental Sciences Division at the Oak Ridge National Laboratory (January 2, 2018 to present)
    - *Project Title: A comprehensive framework for modeling emissions from tropical soils and wetlands (The project is supported by DOE-TES Program).*

- Assistant Research Scientist, University of Maryland Center for Environmental Science, Appalachian Laboratory (August 2015 to Jan 1, 2018)
- Visiting Post-Doctoral Fellow, Organismic and Evolutionary Biology, Harvard University (Jan 2016 to Aug 31, 2018)
    - *Project Title: Integrated Belowground Greenhouse Gas Flux Measurements and Modeling (The project was supported by USDA-NIFA program).*

Education

Doctor of Philosophy: 2011 – 2015
Dissertation Title: *Processes and modeling of soil organic matter (SOM) decomposition in subtropical wetlands* (*The project was supported by NSF-BIO program*).
Affiliation: University of Florida, Gainesville, Florida
Major: Soil and Water Science, Graduate Research Assistant (GPA: 3.94/4.00)

Master of Science: 2008 – 2010
Thesis Title: *Environmental consequences of organic vs. conventional cultivation of basmati rice.*
Affiliation: Indian Agricultural Research Institute, New Delhi, India
Major: Environmental Sciences (Minor: Microbiology), Junior Research Fellow of Indian Council of Agricultural Research (GPA: 8.64/10.00)

Bachelor of Science: 2004 – 2008
Affiliation: Bidhan Chandra Krishi Viswavidyalaya, WB, India
Major: Agricultural Chemistry and Soil Science (Honors: Agriculture), University Research Scholar (GPA: 8.61/10.00)

Honors and Awards

National/International Level

- 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, 2018

- AmeriFlux Scholarship recipient (@$2850) from AmeriFlux Management Project, Department of Energy's Biological and Environmental Research Program, USA.
- Top Reviewers for Multidisciplinary, 2017, Publons Peer Review Award (Publons profile)
- Outstanding Reviewer Recognition, 2017, for two Elsevier Journals: Atmospheric Environment and Agricultural and Forest Meteorology.
- Energypath 2017 Scholarship (@$1000) from Sustainable Energy Fund, an independent non-profit organization in Pennsylvania, USA.
- Runner-up in Oral presentation in 2014 ASA-CSSA-SSSA international annual meeting under the section of "Wetland Soils", awarded monetary prize @ $200
- One of the top three presenters in poster presentation in 2014 ASA-CSSA-SSSA international annual meeting under the section of "ACS Diversity Graduate Student Poster Competition", awarded monetary prize @ $200
- Accepted participant of 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 in 2013 ASA-CSSA-SSSA international annual meeting under the section of "Wetland Soils", awarded monetary prize @ $100

University Level

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

- The Davidson Graduate Student Travel Scholarship, University of Florida, FL, USA @ $300 (2013, 2014).
- The Graduate School Grinter Fellowship, University of Florida, FL, USA @ $2,416 (2011, 2012).
- ICAR Junior Research Fellowship (JRF), Indian Agricultural Research Institute, New Delhi, India (2008-2010).
- University Merit Scholarship, Bidhan Chandra Krishi Viswavidyalaya, West Bengal, India (2004-2008).

Research Interests

- Biogeochemistry, soil organic matter decomposition, measurements and modeling greenhouse fluxes, climate change/warming studies, dynamics of soil microbes and enzymes under environmental perturbations, Bayesian modeling/model-data fusion, data mining, soil microbial trait-based models, omics, elemental cycling, biosphere-atmosphere C exchange, wetlands and aquatic ecosystems, sustainable agricultural practices, and socio-environmental synthesis.

Research-related Skills

- Software expertise: Statistical packages and programing language (R, FORTRAN, NetLogo, SAS, Matlab, 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.
    - Served as 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.

Peer-reviewed Articles (Google scholar, ORCID)

Published

- **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
- 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. JGR-Biogeosciences, 2019, DOI: 10.1029/2018JG004956.

- **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). (*Featured in SCIENCE TRENDS:* https://sciencetrends.com/soil-heterotrophic-respiration-and-the-earth-system-model/)
- 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.
- 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.
- **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, 2017, DOI:10.1111/gcb.13839 *(Featured in Nature Climate Change Research Highlight, available as Biogeochemistry: Peat decomposition. Nature Climate Change 7, 686-686, 2017, DOI: 10.1038/nclimate3406).*
- **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 (*Featured for a research-based story on Research Matters, Science Media Centre, Gubbi Labs, Indian Institute of Science, Bangalore, India:* https://researchmatters.in/article/soil-health-improves-organic-farming-long-and-short-terms-shows-study).
- **Sihi, D**., Gerber, S., Inglett, P. W., and Inglett K. S. Comparing models of microbial-substrate interactions and their response to warming. Biogeosciences, 13, 1-20, 2016, DOI:10.5194/bg-13-1-2016 (*Recognized in UF/IFAS High Impact Research Publications*).
- **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.
- 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, 2016, DOI: 10.1007/s10333-016-0557-8.
- **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. Oryza-An International Journal of Rice, 2012, 49(1), 24-29.

Under Review/Revision and in Preparation

- **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. Target journal: Global Change Biology (Invited contribution to 25-year anniversary of GCB).

- **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. Target journal: Biogeochemistry.
- **Sihi, D.**, Dari, B., Sharma, D. K., Pathak, H., Nain, L., and Sharma, O. P. Assessment of Ground Water Quality in Indo-Gangetic Plain of South-Eastern Asia under Organic vs. Conventional Farming. Environmental Monitoring and Assessment (under revision).

Ongoing Collaborations

- Renchon, A. A., Drake, J. E., Macdonald, C. A., Gorsel, E. V., **Sihi, D.**, Savage, K., Davidson, E. A., Hinko-Najer, N., Arndt, S. K., Pendall, E. Lessons from simultaneous measurements of soil respiration and net ecosystem exchange of CO_2 in temperate forests. Target journal: JGR-Biogeosciences.
- 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. Target journal: New Phytologist.
- Buchkowski, R., Keiser, A., **Sihi, D.**, Shaw, A., Smith, G. R. Stoichiometry in emerging models of terrestrial organic matter dynamics. Target journal: Frontiers in Ecology and Evolution.
- Ruddle, B., Veerecken, H., Dralle. D., Sullivan, P., Tang, J., Harms, T., **Sihi, D.**, Cagnarini, C., Olshansky, Y., Vanderborght, J., and Li, L. Dimensionless Analysis in Observatories. Target journal: TBD.
- Baatz, R., Hendricks Harrie-Jan F., Van Looy, K., Vereecken, H., Adamescu, C. M., Williams, M., Euskirchen, E., Dietze, M., Fox, A., Flores, L., **Sihi, D.**, Simunek, J., Brunetti, G., Rocha, A., Luo, Y., Lannoy G. D., Pauwels, V., Naz, B., Görgen, K., Sullivan, P., Jones, J., He, Y., Furusho, C., Malone, S. L., Samaniego, L., Rocha, A. Ecosystem Reanalysis and Ecosystem Reconstruction: A Review. Target journal: TBD.

Invited Book Chapters

- **Sihi, D**. and Dari, B. (2018) Soil biogeochemistry for nutrient cycling. In: The Soils of India, World Soils Book Series. Hartemink, A. and Mishra, B. B. (Eds), Springer (in Press).
- Dari, B., and **D. Sihi**. (2018). Future of Rice Crop Under Enriched CO_2 Environment. Pages 425-437 in Advances in Crop Environment Interaction, S. K. Bal, J. Mukherjee, B. U. Choudhury, and A. K. Dhawan (Eds), Springer Singapore, Singapore. DOI: 10.1007/978-981-13-1861-0_17.
- Souri, Z., Cardoso, A. A., Silva, C. J., Oliveira L. M., Dari, B., and **Sihi, D.** 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 (in press).

- Dari, B. and **Sihi, D**. Heavy Metals as Emerging threats in Indian Soils. In: Soil Management, Springer (under review).

Technical Report

- Inglett, K.S., Osborne, T.Z., Bochnak, A.M.K., Vandam, B., Duffy, S., Inglett, P.K., and **Sihi, D.** Hydrologic Effects on Soil Stability - Loss, Formation, and Nutrient Fluxes. Final Report to the Saint Johns River Water Management District, 2013, 114 pp.

Workshop Participation (¶ *fully-funded*)

- ¶ Accepted participant for WOODSTOICH 4 workshop, August 14-19, 2019, Flathead Lake Biological Station, University of Montana, MT, USA.
- ¶ Accepted participant for 2019 CLM/CTSM Tutorial, February 4-8, 2019, NCAR Mesa Laboratory, Boulder, CO, USA.
- ¶ Invited participant for Flux Course Revamp Workshop, Oct 26, 2018, Indiana University, Bloomington, IN, USA.
- ¶ Invited participant for AmeriFlux Decadal Synthesis Workshop, Aug 23-24, 2018, Lawrence Berkeley National Laboratory, Berkeley, CA, USA.
- ¶ Invited participant for Root trait and soil carbon workshop, July 31-Aug 1, 2018, Oak Ridge National Laboratory, Oak Ridge, TN, USA.
- Accepted participant for New Advances in Carbon Cycle Modeling mini-symposium and workshop, May 20-26, 2018, Northern Arizona University, Flagstaff, AZ, USA.
- ¶ Accepted participant for Ecological Knowledge and Predictions: Integrating Across Networks and National Observatories workshop, February 19-21, 2018, University of Arizona, Tucson, AZ, USA.
- ¶ Accepted ISMC candidate for CZO / LTER / NEON / ISMC Joint Workshop, February 13-15 2018, NEON HQ in Boulder Colorado, USA.
- ¶ Accepted Participant for 10th Annual Flux Course, AmeriFlux, 2017, University of Colorado Mountain Research Station, Niwot Ridge, Colorado, USA.
- ¶ Accepted Participant for the Short Course "Bayesian Modeling for Socio-Environmental Data", 2017, National Socio-Environmental Synthesis Center (SESYNC), Annapolis, Maryland, USA.
- Accepted Participant for the Short Course "Individual/Agent-based Modeling", 2017, Humboldt State University, Arcata, California, USA.
- ¶ Accepted participant for International Soil Carbon Network (ISCN) Hackathon, New Orleans, LA, Dec 10, 2017.
- ¶ Service to Activism in the Everglades: a workshop led by former Florida Governor and Senator Bob Graham on March 22, 2014 at Bob Graham Center for Public Service, University of Florida.

Grant Writing Activity

- "Linking Root Traits with Soil Carbon", submitted to the Climate Change Science Institute, Oak Ridge National Laboratory, Apr 2018, @28,000 (Accepted).
- "Artificial neural network synthesis of environmental controls on soil respiration & belowground-aboveground linkages", submitted to the Climate Change Science Institute, Oak Ridge National Laboratory, Apr 2018 (Declined).

- "CO_2 and CH_4 Flux Responses to Changing Environments in a High-Latitude, Black SPRUCE Peatland", submitted to the US Department of Energy Office of Science, Apr 2018, ORNL collaborator (Declined).
- "Arctic methane emissions: a shifting balance of processes", submitted to the US Department of Energy Office of Science, Apr 2018, ORNL collaborator (Declined).
- "Soil Carbon-Climate Feedback and Implications for Climate Policy", submitted to the National Socio-Environmental Synthesis Center, December 2016 (Declined).
- "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).

Teaching Experiences

Instructor

- Flux Course, 2019

Co-Teaching/Teaching Assistant: Lead discussion in Lecture, Laboratory, and Field sessions

- 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

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.

Mentoring Experiences

- 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 from New England forest, processing of soil samples, 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)
- Participating Scientist for Skype a Scientist program.

Presentations at Conferences and Symposiums (Invited*)**

- **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, April 30-May1, 2019, Potomac, MD.
- **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, 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, 24-25, 2018.
- ***Sihi, D.** Achieving ISMC mission by leveraging CZO-LTER-NEON activities, CZO / LTER / NEON / ISMC Joint Workshop, February 13-15, 2018, NEON HQ in Boulder Colorado, USA.
- **Sihi, D.** Ecological Forecasting of Soil, Ecological Knowledge and Predictions: Integrating Across Networks and National Observatories, Feb 19-21, 2018, Tuscon, AZ.
- **Sihi, D.** Data, Information, Knowledge, and Wisdom Hierarchy**,** Ecological Forecasting of Soil, Ecological Knowledge and Predictions: Integrating Across Networks and National Observatories, Feb 19-21, 2018, Tuscon, AZ.
- **Sihi, D.** Training, Education, and Outreach, Ecological Forecasting of Soil, Ecological Knowledge and Predictions: Integrating Across Networks and National Observatories, Feb 19-21, 2018, Tuscon, AZ.
- **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.** 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.,** 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.** 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, February 6, 2017 (oral presentation).
- **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, December 12-16, 2016 (*oral presentation*).

- ***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, December 6, 2016 (*oral presentation*).
- ***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, November 6-9, 2016 (*oral presentation*).
- **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 August 7-12, 2016 (*oral presentation*).
- **Sihi, D.**, Davidson, E. A., and Savage, K. Modeling soil methane fluxes along the concentration gradient of oxygen. International Soil Modeling Conference, Austin, TX, March 29-April 1, 2016 (*Lightning talk and poster presentation*).
- **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, December 14-18, 2015 (*Poster presented*).
- ***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.,** 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, 15-19, 2014 (*poster presented*).
- **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, November 2-5, 2014 (*Runner up in 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, November 2-5, 2014 (*One of the top three presenters in poster presentation*).
- ***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, 18th September 2014, University of Florida, Gainesville, FL (*oral 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 presented*).
- **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, Feb 11-12, 2014, University of Florida, Gainesville, FL (*poster presented*).

- **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, November 3-6, 2013 (*One-of the top three presenters in 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 presented*).
- **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, 6th September 2013, University of Florida, Gainesville, FL (*Poster presented*).
- **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, October 6-9, 2013 (*Poster presented*).
- **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, 29th October 2013 at University of Florida, Gainesville, FL (*Poster presented*).
- **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, 23rd October 2012 at University of Florida, Gainesville, FL (*poster presented*).
- **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, 7th September 2012, University of Florida, Gainesville, FL (*poster presented*).
- 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 presented*).
- **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), Feb. 6-8, 2011, Punjab Agricultural University, Ludhiana, Punjab, India. (*Extended summary published and poster presented*).
- **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, Dec. 3-7, 2010 in New Delhi, India (*Poster presented*).

Co-authored Presentations (**Invited***)**

- Topographic Controls over Greenhouse Gas Emissions from Puerto Rican Rainforest Soils. 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. 14th Annual Genomics of Energy & Environment Meeting, US DOE JGI, April 2-5, 2019, San Francisco, CA.
- 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, April 30-May1, 2019, Potomac, MD.

- *****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, 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, 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 (Plenary presentation in a PICO session)
- 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, November 6-9, 2016 (*oral presentation as co-author*)
- 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, December 14-18, 2015 (*oral presentation as co-author*).
- 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, December 14-18, 2015 (*Oral presentation as co-author*).
- 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, August 9-14, 2015 (*oral presentation as co-author*).
- 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 (*oral presentation as co-author*)

- 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, 6th September 2013, University of Florida, Gainesville, FL (*Poster presented as co-author*).

Professional Affiliations

- American Geophysical Union (AGU), 2012 to present
- Ecological Societies of America (ESA), 2015 to present
- Soil Science Society of America (SSSA), 2011 to present
- American Association for the Advancement of Science (AAAS), 2016 to present
- Soil Ecology Society (SES), 2019

Service

Peer-review/Editorial Services

- Academic Editor: PLOS ONE
- Associate Editor: Agronomy Journal (Soils section)
- Editor: Soil Methods On-line: ACS320. Methods of Soil Analysis, ASA, CSSA, SSSA Books, March 2017 - December 2019.
- PeerJ Ambassador
- Peer-reviewed for scholarly journals: Nature Climate Change, Ecology Letters, Global Change Biology, 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, Environmental Reviews, Plant and Soil, Geoderma, PLOS ONE, Ecological Modelling, Atmospheric Environment, PeerJ, Environmental Monitoring and Assessment, GeoHealth, Soil Science Society of America Journal, Soil Systems, Wetlands, Experimental Agriculture.
- Peer-reviewed Proposal for The Natural Environment Research Council (NERC), UK
- 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) (First and Second Order Draft)
- 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

- Secretary, Ecological Society of America (ESA), Biogeosciences Section, 2020-2022.
- Ecological Society of America (ESA) Publication Committee, 2019-2020.
- National Ecological Observatory Network (NEON) Technical Working Groups (TWGs) member for Terrestrial Biogeochemistry and Microbial Ecology, 2017-2019.
- Curriculum committee member, Flux Course, 2018-2020.
- Talent Pool Strategy Task Force member, American Geophysical Union (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, Session # B21F, Session ID and Title: #53076, "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.
- Faculty search committee member for the new University of Maryland Center for Environmental Science Librarian at Chesapeake Biological Laboratory, Fall 2016.

Student Organizations and Student Club

- Vice president (2014-2015) and Graduate Student Committee member (2013-2014), Soil and Water Science Department at University of Florida, FL, USA.
- Vice President/Secretary, Mayors' Council at University of Florida, FL, USA (2013-2015).
- Fund Raiser Chair (2014-2015) and outreach events volunteer (2011-2015), Wetlands Club, University of Florida, Florida, USA.
- Webmaster (2014-2015), travel grant reviewer (2013-2015), Planning committee member of new graduate student orientation (2013), Graduate Student Council at University of Florida, FL, USA.
- Event Director, Indian Graduate Student Association at University of Florida, FL, USA (2014-2015).
- Senator- Student Government (SG), Constituency: Graduate Seat, University of Florida, FL, USA (Fall term, 2013).

Other Service Activities

- Internship at the American Geophysical Union Fall Meeting held in San Francisco, December 14-18, 2015. Registration fee (@ $350) was waived.
- Internship at the 2014 Annual SSSA, ASA and CSSA Meetings, held in Long Beach, November 2-5, 2014. Awarded monetary prize of $100.
- Internship at the Joint Aquatic Science Meeting held in Portland, Oregon, USA, May 18-23, 2014. Awarded monetary prize of $200.
- Internship at the 2013 Annual SSSA, ASA and CSSA Meetings, held in Tampa, Florida, USA, November 3-6, 2013. Awarded monetary prize of $100.
- Moderator assistant at the 9th INTECOL International wetlands conference, Orlando, Florida, June 3-6, 2012. Abstract submission fee (@$350) was waived.
- Science Fair Judge in Alachua County, FL: Regional Science Fair Program at Ft. Clarke Middle School, Gainesville (Dec 10, 2013), Santa Fe College, Gainesville (February 6, 2014), Professional Academies Magnet (PAM) at Loften High School, Gainesville (May 30, 2013), the Alachua County School Volunteer Program at Bishop Middle School (Nov 15, 2012).