

**UMAKANT MISHRA**  
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### **BIO**

Umakant Mishra is a computational soil scientist whose research lies at the intersection of soil science, global biogeochemical processes, and environmental variability. His studies integrate field observations, environmental datasets, geospatial analysis, and process-based modeling to quantify the effects of human activities and environmental variability on soil properties and processes. Umakant has conducted extensive research on permafrost, temperate, and tropical soils, publishing studies on the response of soil organic carbon to land use and environmental stressors, lifecycle analyses of bioenergy crops, spatial prediction of soil properties at regional and national scales, and the assessment of Earth system model projections. Umakant has supported various scientific societies and agencies both within the United States and internationally, serving in multiple roles. His contributions to science have been recognized and awarded by the U.S. Department of Energy, the Soil Science Society of America, and the International Union of Soil Science.

### **ACADEMIC PREPARATION**

<b>Geological Postdoctoral Fellow</b> Lawrence Berkeley National Laboratory/University of California Berkeley	<b>Aug 09 – May 12</b>
<b>Doctor of Philosophy, Soil Science</b> The Ohio State University, OH, USA.	<b>Jan 06 – Jun 09</b>
<b>Master of Science, Physical Land Resources</b> Ghent University, Ghent, Belgium.	<b>Sep 02 - Sep 04</b>
<b>Bachelor of Science, Agriculture</b> Tribhuvan University, IAAS, Chitwan, Nepal.	<b>Aug 94 – Jul 98</b>

### **PROFESSIONAL EXPERIENCE**

<b>Adjunct Professor</b> , Environmental Studies University of California, Santa Cruz, CA, USA	<b>Jan 23 - present</b>
<b>Deputy Director</b> , Lifecycle Economics and Agronomy Division Joint Bioenergy Institute, Emeryville, CA, USA	<b>Oct 22 – present</b>
<b>Principal Member of Technical staff</b> , Biomaterials & Biomanufacturing Sandia National Laboratory, Livermore, CA, USA	<b>Oct 20 – present</b>

<b>Scientific Lead</b> , Life-Cycle and Technoeconomic Analysis Joint Bioenergy Institute, Emeryville, CA, USA	<b>Oct 17 – Sep 22</b>
<b>Geospatial Scientist</b> , Environmental Science Division Argonne National Laboratory, IL, USA	<b>Apr 15 – Sep 20</b>
<b>Research Fellow</b> , Computation Institute University of Chicago, IL, USA	<b>Oct 14 – Sep 17</b>
<b>Assistant Geospatial Scientist</b> , Environmental Science Division Argonne National Laboratory, IL, USA	<b>Jun 12 – Mar15</b>
<b>Geological Postdoctoral Fellow</b> Earth Sciences Division, Lawrence Berkeley National Laboratory, USA Energy Biosciences Institute, University of California Berkeley, CA, USA	<b>Aug 09 – May 12</b>
<b>Graduate Research Associate</b> , School of Environment and Natural Resources The Ohio State University, Columbus, OH, USA.	<b>Jan 06 – Jun 09</b>
<b>Assistant Agronomist</b> Department of Agriculture, Nepal.	<b>Dec 98 – Sep 02</b>

### AWARDS, HONORS, & RECOGNITIONS

<b>2025</b>	<b>Editor’s Citation of Excellence Award</b> , Soil Science Society of America Journal
<b>2025</b>	<b>Distinguished Lecture Award</b> , Biogeosciences, Asia Oceania Geosciences Society
<b>2022</b>	<b>IUSS Jeju Award</b> , International Union of Soil Science
<b>2020</b>	<b>Certificate of Excellence</b> , Regional and Global Model Analysis program, Department of Energy- Earth and Environmental Systems Sciences Division
<b>2015</b>	<b>Honorable mention, Editor’s citation for excellence in Manuscript review</b> , Agronomy Journal
<b>2014</b>	<b>Outstanding Associate Editor Award</b> , Agronomy Journal
<b>2008</b>	<b>Gamma Sigma Delta</b> , The Honor Society of Agriculture, Ohio State University
<b>2008</b>	<b>Edward J. Ray Travel Award</b> , The Ohio State University
<b>2002</b>	<b>Flemish Interuniversity Council (VLIR) Award</b> , Ghent University, Belgium

### NEWS & RESEARCH HIGHLIGHTS



#### **Research-Spotlight: Coming to a Consensus on Carbon (03/07/2024)**

“A new study describes inconsistencies in how different Earth system models predict soil carbon levels in a warming climate” (<https://eos.org/research-spotlights/coming-to-a-consensus-on-carbon>) Shi et al., 2024, AGU Advances, Vol 5, issue 2, e2023AV001068.



### **NEWS RELEASE: Prediction Accuracy of Empirical Relationships Comparable to Machine Learning (11/14/2022)**

“The approach used in this study generates insights into how environmental factors are controlling SOC stocks and differs from the ML approach, which offers few insights into the mathematical relationships between input and output variables”

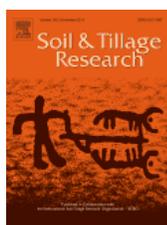
(<https://doi.org/10.1002/csan.20901>; CSA news) Mishra et al., 2022, SSSAJ, Volume 86, No. 6, SSSAJ, Pages 1611-1624.



U.S. DEPARTMENT OF  
**ENERGY**

### **2017's Top Stories from the Office of Science (01/03/2018)**

[The Challenge of Estimating Alaska's Soil Carbon Stocks \(https://science.energy.gov/news/featured-articles/2018/01-03-18/\)](https://science.energy.gov/news/featured-articles/2018/01-03-18/), Vitharana et al., 2017, JGR- Biogeosciences, Volume 122, issue 2, Pages 415-429.



### **Most cited Soil & Tillage Research articles since 2010 (03/09/2015)**

[Tillage effects on soil organic carbon storage and dynamics in Corn Belt of Ohio USA](#), Volume 107, Issue 2, April 2010, Pages 88-96.

Umakant Mishra | David A N Ussiri | Rattan Lal



### **NEWS RELEASE (05/20/2010)**

“Common view of scientists in the discipline is that a single model applicable to different soil landscapes in regional-scale was unlikely to be developed. This new method can play a vital role in improving the prediction ability of soil organic carbon pools on a regional scale” – CSA news

[Predicting the Spatial Variation of the Soil Organic Carbon Pool at a Regional Scale](#), SSSAJ, Volume 74, No. 3, Pages 906-914.

Umakant Mishra | Rattan Lal | Desheng Liu | Marc Van Meirvenne

## **PEER-REVIEWED PUBLICATIONS**

1. Mao, J., S. Zhang, M. Wang, W. Yu, F. Liu, Y. Yang, U. Mishra, Z. Shi, & Z. Luo. 2026. Much larger whole-profile soil organic carbon stocks on the Qinghai-Tibet Plateau than previously reported, *Global Change Biology*, doi: 10.1111/gcb.70808.
2. Rajagopal, D., G. Hochman, S.K. Mishra, U. Mishra, and S. Spatari. 2026. Liquid biofuels for transportation: lessons of the last two decades for the next two, *Environmental Science & Technology*, doi:10.1021/acs.est.5c16314.
3. Arije, D., P. Bista, S. Gautam, C. Steele, U. Mishra, and R. Ghimire. 2026. Enhancing soil carbon storage in water-limited environments with multispecies cover cropping: Insights from Daycent model simulation, *Field Crops Research*, 340, 110384, doi:10.1016/j.fcr.2026.110384.

4. Gautam, S., U. Mishra, S.N. Scott, and M.J. Lara. 2025. Machine learning and process-based modeling of spatiotemporal changes in active layer thickness across Alaska, *Scientific Reports*, 15 (1), 42420, doi: 10.1038/s41598-025-26586-w, SAND2025-14920J.
5. Song, H.J., S.J.C. Galgo, B.L. Turner, U. Mishra, P.J. Kim. 2025. Greater root biomass offsets soil organic carbon loss under climate impact in rice paddies, *Soil Biology and Biochemistry*, 209, 109888, doi: 10.1016/j.soilbio.2025.109888.
6. Kondo, M., P.K. Patra, J.G. Canadell, P. Ciais, R.A. Houghton, F. Achard, A.K. Jain, W. Li, G. Koren, T. Hirano, T. Kumagai, A. Ito, N. Chandra, T. Saeki, T. Maki, T. Nakamura, C.S. Deshmukh, X. Luo, U. Mishra, N. Saigusa. 2025. The greenhouse gas budget of Southeast Asia for 2000–2019 and pathways towards carbon neutrality, *Global Biogeochemical Cycles*, 39 (9), e2024GB008256, doi:10.1029/2024GB008256.
7. Gautam, S., U. Mishra, and C.D. Scown. 2025. Machine learning based reduced-order models to predict spatiotemporal dynamics of soil carbon and biomass yield of different bioenergy Crops, *Carbon Capture Science & Technology*, 100440, doi: 10.1016/j.ccst.2025.100440.
8. Lara, M.J., R. Michaelides, D. Anderson, W. Chen, E.C. Hall, C. Ludden, A.I.G. Schore, U. Mishra, S.N. Scott. 2025. Peat fires in Alaska will double by the end of the century, *Scientific Reports*, 15 (1), 35874, doi: 10.1038/s41598-025-19682-4, SAND2025-13647J.
9. Fan, C., Y. Song, U. Mishra, S. Gautam, M. A. Mayes. 2025. Harnessing the power of machine learning and omics to identify environmental regulation on microbial functional composition for soil C, N, and P cycling, *JGR-Biogeosciences*, 130 (10), e2024JG008470, doi: 10.1029/2024JG008470, SAND2025-15300J.
10. Song, H.J., J.H. Lee, H.Y. Hwang, S.T. Jeong, R.C. Canatoy, B.L. Turner, U. Mishra, S.Y. Park, P. J. Kim. 2025. Dilemma of organic matter input to mitigate climate impact of rice paddies, *Soil Biology and Biochemistry*, 209, 109873, doi:10.1016/j.soilbio.2025.109873.
11. Peng, W., Y. Yi, U. Mishra, K. Bakian-Dogaheh, J.S. Kimball, M. Moghaddam, H.W. Chen. 2025. Characterizing spatial variability of soil organic carbon in Alaska through improving machine learning modeling with data resampling, *IEEE Transactions on Geoscience and Remote Sensing*, doi: 10.1109/TGRS.2025.3572344.
12. Zhu, Y., X. Xia, J. G. Canadell, S. Piao, X. Lu, U. Mishra, X. Wang, W. Yuan, Z. Qin. 2025. China's carbon sinks from land-use change underestimated, *Nature Climate Change*, 15, 428-435, doi:10.1038/s41558-025-02296-z.
13. Yoon, J-H, S. S. Jung, H.S. Kim, Y. Park, H. Kim, U. Mishra, S. Gautam, C. Alewell, P. Panagos, M.B. Kirkham, P. Borrelli & J.E. Yang. 2025. Impact of soil erosion on soil organic carbon loss and its implications for carbon neutrality, *Advances in Agronomy*, 191, 363-414, doi:10.1016/bs.agron.2025.01.005.
14. Lara, M.J., R. Michaelides, D. Anderson, W. Chen, E.C. Hall, C. Ludden, A.I.G. Schore, U. Mishra, S.N. Scott. 2025. A 20-m spatial resolution peatland extent map of Alaska, *Scientific Data*, 12, 226, doi:10.1038/s41597-025-04502-1, SAND2025-01755J.

15. Song, H., U. Mishra, S.Y. Park, Y.H. Seo, B. Turner, S. Galgo, P.J. Kim. 2025. Warming but not elevated CO<sub>2</sub> depletes soil organic carbon in temperate rice paddy, *Agriculture, Ecosystems and Environment*, 379, 109333, doi:10.1016/j.agee.2024.109333.
16. Hoang, H.G., M. Hadi, M.K. Nguyen, N. S.H. Nguyen, P.Q.H. Le, K.N. Nguyen, H.-T. Tran, and U. Mishra. 2025. Assessing heavy metal pollution levels and associated ecological risks in peatland areas in the Mekong Delta region, *Environmental Research*, 121319, doi: 10.1016/j.envres.2025.121319.
17. Nyaupane, K., U. Mishra, F. Tao, K. Yeo, W.J. Riley, F. Hoffman, and S. Gautam. 2024. Observational benchmarks inform representation of soil organic carbon dynamics in land surface models, *Biogeosciences*, 21, 5173–5183, doi:10.5194/bg-21-5173-2024, SAND2025-00084J.
18. Tao, F., B.Z. Houlton, Y. Huang, Y-P Wang, S. Manzoni, B. Ahrens, U. Mishra, L. Jiang, X. Huang, and Y. Luo. 2024. Convergence in simulating global soil organic carbon by structurally different models after data assimilation, *Global Change Biology*, 30, e17297, doi: 10.1111/gcb.17297.
19. Qin, Z., Y. Zhu, J. G. Canadell, M. Chen, T. Li, U. Mishra, W. Yuan. 2024. Global spatially explicit carbon emissions from land-use change over the past six decades (1961-2020), *One Earth*, 7, 835-847, doi:10.1016/j.oneear.2024.04.002.
20. Shi, Z., F.M. Hoffman, M. Xu, U. Mishra, S.D. Allison, J. Zhou, J.T. Randerson. 2024. Global-scale convergence obscures inconsistencies in soil carbon change predicted by Earth system models, *AGU Advances*, 5, e2023AV001068, doi:10.1029/2023AV001068.
21. Lin, Z., X. Lu, Y. Xu, W. Sun, Y. Yu, W. Zhang, U. Mishra, Y. Kuzyakov, G. Wang, Z. Qin. 2024. Increased straw return promoted soil organic carbon accumulation in China's croplands over the past four 40 years, *Science of The Total Environment*, 945, 173903, doi: 10.1016/j.scitotenv.2024.173903.
22. Wang, Z., J. Kumar, S.R. Weintraub-Leff, K. Todd-Brown, U. Mishra, D. Sihi. 2024. Upscaling soil organic carbon measurements at the continental scale by multivariate clustering analysis, *JGR-Biogeosciences*, 128, e2023JG007702, doi:10.1029/2023JG007702.
23. Vitharana, U.W.A., N. J. Casson, D. Kumaragamage, U. Mishra, K. Friesen-Hughes. 2024. Factors controlling the spatial heterogeneity of soil organic carbon concentrations and stocks in a boreal forest, *Geoderma Regional*, e00749, doi:10.1016/j.geodrs.2023.e00749.
24. Wang, M., S. Zhang, L. Xiao, X. Guo, U. Mishra, Y. Luo, Z. Luo. 2024. Responses of soil organic carbon to climate extremes under warming across global biomes, *Nature Climate Change*, 14, 98–105, doi:10.1038/s41558-023-01874-3.
25. Lin, Z., Y. Dai, U. Mishra, G. Wang, W. Shangguan, W. Zhang, and Z. Qin. 2024. Global and regional soil organic carbon estimates: magnitude and uncertainties, *Pedosphere*, doi: 10.1016/j.pedsph.2023.06.005.

26. Gautam, S., N. Baral, U. Mishra and C.D. Scown. 2023. Impact of bioenergy feedstock carbon farming on sustainable aviation fuel viability in the United States, *Proceedings of National Academy of Sciences*, 120 (51), e2312667120, doi:10.1073/pnas.2312667120.
27. Gautam, S., U. Mishra, R. Ghimire, and C. Scown. 2023. Increased drought and extreme events over continental United States under high emission scenario, *Scientific Reports*, 13, 21503, doi:10.1038/s41598-023-48650-z.
28. Massoud, E.C., F.M. Hoffman, Z. Shi, J. Tang, E. Alhajjar, M. Barnes, R. K. Braghieri, Z. Cardon, O. Crompton, P. J. Denny-Frank, S. Gautam, M. A. Gonzalez-Meler, J. K. Green, P. Levine, N. MacBean, J. Mao, R. T. Mills, U. Mishra, M. Mudunuru, A. A. Renchon, S. Scott, E. R. Siirila-Woodburn, M. Sprenger, C. Tague, Y. Wang, C. Xu, and C. Zarakas. 2023. Perspectives on Artificial Intelligence for Predictions in Ecohydrology, *Artificial Intelligence for the Earth Systems*, e230005, doi:10.1175/AIES-D-23-0005.1
29. Tao, F., Y. Huang, B. A. Hungate, S. Manzoni, S. D. Frey, M. W. I. Schmidt, M. Reichstein, N. Carvalhais, P. Ciais, L. Jiang, J. Lehmann, U. Mishra, G. Hugelius, T. D. Hocking, Y.-P. Wang, B. Z. Houlton, X. Lu, Z. Shi, K. Viatkin, R. Vargas, Y. Yigini, C. Omutu, A. A. Malik, G. Peralta, R. Cuevas-Corona, L. E. Di Paolo, I. Luotto, C. Liao, Y.-S. Liang, V. S. Saynes, X. Huang, and Y. Luo. 2023. Microbial carbon use efficiency promotes global soil carbon storage, *Nature*, 618, 981-985, doi:10.1038/s41586-023-06042-3.
30. Yi, Y., K. Bakian-Dogaheh, M. Moghaddam, U. Mishra, J. S. Kimball. 2023. Mapping Surface Organic Soil Properties in Arctic Tundra using C-band SAR data, *Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, 16, 1403-1413, doi: 10.1109/JSTARS.2023.3236117.
31. Qin, Z., K. Guan, W. Zhou, B. Peng, J. Tang, Z. Jin, R. Grant, M. Villamil, E. DeLucia, A. Margenot, U. Mishra, T. Hu, and Z. Chen. 2023. Assessing long-term impacts of cover crops on soil organic carbon in the central U.S. Midwestern agroecosystems, *Global Change Biology*, doi: 10.1111/gcb.16632.
32. Wang, M., X. Guo, S. Zhang, L. Xiao, U. Mishra, Y. Yang, B. Zhu, G. Wang, X. Mao, T. Qin, T. Jiang, Z. Shi, and Z. Luo. 2022. Global soil profiles indicate depth-dependent soil carbon losses under a warmer climate, *Nature Communications*, 13, 5514, doi:10.1038/s41467-022-33278-w.
33. Baral, N.R., S.K. Mishra, S. Gautam, U. Mishra and C.D. Scown. 2022. Multifunctional landscape for Dedicated Bioenergy Crops Leads to Low-Cost and Carbon-Negative Biofuels, *Renewable and Sustainable Energy Reviews*, 169, 112857, doi: 10.1016/j.rser.2022.112857.
34. Mishra, U., K. Yeo, A. Adhikari, W.J. Riley, F. Hoffman, C. Hudson, and S. Gautam. 2022. Empirical relationships between environmental factors and soil organic carbon produce comparable prediction accuracy as the machine learning, *Soil Science Society of America Journal*, 86, 1611-1624, doi:10.1002/saj2.20453.

35. Gautam, S., U. Mishra, C.D. Scown, S.A. Wills, K. Adhikari and B. Drewniak. 2022. Climate change may release over 1.8 petagrams of soil organic carbon from topsoils in the United States by 2100, *Global Ecology & Biogeography*, 31, 1146-1160, doi: 10.1111/geb.13489.
36. Zhang, Z., Y. Wang, Y. Zhu, K. He, T. Li, U. Mishra, F. Wang, L. Yu, X. Zhao, L. Zhu, X. Zhu, and Z. Qin. 2022. Carbon sequestration in soil and biomass under native and non-native mangrove ecosystems, *Plant & Soil*, doi:10.1007/s11104-022-05352-1.
37. Kim, Y.J., D. Laffly, S-E. Kim, L. Nilsen, J. Chia, S. Nama, Y.B. Leed, S. Jung, U. Mishra, Y.K. Lee, J.Y. Jung. 2022. Chronological changes in soil biogeochemical properties of the glacier foreland in Midtre Lovénbreen, Svalbard, attributed to soil-forming factors, *Geoderma*, 415, 115777, doi: 10.1016/j.geoderma.2022.115777.
38. Heckman, K.A., C.W. Swanston, M.S. Torn, P.J. Hanson, L.E. Nave, R.C. Porras, U. Mishra, and M. Bill. 2021. Soil organic matter is principally root derived in an Ultisol under oak forest, *Geoderma*, 403, 115385, doi: 10.1016/j.geoderma.2021.115385.
39. Joshi, D., R. Ghimire, T. Kharel, U. Mishra, S. Clay and D. Clay. 2021. Prospects of conservation agriculture for food security and climate resilience in Nepal, *Agronomy Journal*, doi: 10.1002/agj2.20830.
40. Baatz, R., H.-F. Harrie-Jan, E. Euskirchen, S. Debjani, M. Dietze, K. Van Looy, G. de Lannoy, M. Williams, V. Pauwels, C. Montzka, U. Mishra, H. Bogena, M. Adamescu, A. Fox, K. Gørgen, B. Naz, and H. Vereecken. 2021. Reanalysis in Earth system science: towards terrestrial ecosystem reanalysis, *Reviews of Geophysics*, doi: 10.1029/2020RG000715.
41. Mishra, U., G. Hugelius, E. Shelef, Y. Yang, J. Strauss, A. Lupachev, J. W. Harden, J. D. Jastrow, C.-L. Ping, W. J. Riley, E. A. G. Schuur, R. Matamala, M. Siewert, L. E. Nave, C. D. Koven, M. Fuchs, J. Palmtag, P. Kuhry, C. C. Treat, S. Zubrzycki, F. M. Hoffman, B. Elberling, P. Camill, A. Veremeeva, and A. Orr. 2021. Spatial heterogeneity and environmental predictors of permafrost region soil organic carbon stocks. *Science Advances*, 7, eaaz5236, doi: 10.1126/sciadv.aaz5236.
42. Goncalves, D.R.P., U. Mishra, S.A. Wills, and S. Gautam. 2021. Regional Environmental controllers influence continental scale soil carbon stocks and future carbon dynamics, *Scientific Reports*, 11, 6474, doi: 10.1038/s41598-021-85992-y.
43. Mishra, S.K., S. Gautam, U. Mishra, and C. D. Scown. 2021. Performance-based payments for soil carbon sequestration can allow a low-carbon bioeconomy, *Environmental Science & Technology*, 55 (8), 5180-5188, doi:10.1021/acs.est.0c06452.
44. Shu, S., A. K. Jain, C. D. Koven, and U. Mishra. 2020. Estimation of permafrost SOC stock and turnover time using a land surface model with vertical heterogeneity of permafrost soils, *Global Biogeochemical Cycles*, 34, e2020GB006585, doi: 10.1029/2020GB006585.
45. Mishra, U., S. Gautam, W.J. Riley, and F. Hoffman. 2020. Ensemble machine learning approach better predicts the spatial heterogeneity of surface soil organic carbon stocks in

data-limited northern circumpolar region, *Frontiers in Big data*, 3, 40, doi: 10.3389/fdata.2020.528441.

46. Sulman, B., J. Harden, Y. He, C. Treat, C. Koven, U. Mishra, J. O'Donnell, L. Nave. 2020. Land use and land cover affect the depth distribution of soil carbon: Insights from a large database of soil profiles, *Frontiers in Environmental Science* 8, 146, doi: 10.3389/fenvs.2020.00146.
47. Gautam, S., U. Mishra, Y. Yang, and C. Scown. 2020. Sorghum biomass production in the continental United States and its potential impacts on soil organic carbon and nitrous oxide emissions, *Global Change Biology Bioenergy*, 12, 878-890, doi:10.1111/gcbb.12736.
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49. Novak, J.M., P.J. Bauer, D.L. Karlen, P.G. Hunt and U. Mishra. 2020. Loamy sand soil approaches organic carbon saturation after 37 years of conservation tillage, *Agronomy Journal*, 112, 3152-3162, doi:10.1002/agj2.20184.
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51. Huntington, T., X. Cui, U. Mishra, and C. Scown. 2020. Machine learning for bioenergy sorghum yield prediction under future climate scenarios, *Biofuels, Bioproducts & Biorefining*, 14, 566-577, doi:10.1002/bbb.2087.
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57. Mitran T., U. Mishra, R. Lal, T. Ravisankar, and K. Sreenivas. 2018. Spatial distribution of soil carbon stocks in a semi-arid region of India, *Geoderma Regional*, 15, p. e00192, doi: 10.1016/j.geodrs.2018.e00192.
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88. Christopher S.F., R. Lal, and U. Mishra. 2009. Long-term no-till effects on carbon sequestration in the Midwestern U.S, *Soil Science Society of America Journal*, 73:207-216, doi: 10.2136/sssaj2007.0336.
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### **PEER-REVIEWED BOOK CHAPTERS & WORKSHOP REPORTS**

1. Hoffman, F.M., J. Kumar, Z. Shi, A. P. Walker, J. Mao, Y. Wang, A. L. S. Swann, J. T. Randerson, U. Mishra, G. J. Kooperman, H. Kim, C. Xu, C. D. Koven, D. Lawrence, M. Fowler, M. De Kauwe, B. Medlyn, L. Gu, L. Agee, J. Warren, S. Serbin, A. Rogers, T. F. Keenan, N. McDowell, N. Collier, S. Sreepathi, J. Restrepo, R. Archibald, F. Bao, R. T. Mills. 2021. AI-Constrained Bottom-Up Ecohydrology and Improved Prediction of Seasonal, Interannual, and Decadal Flood and Drought Risks, DOE BER, AI4ESP 2021 #AI4ESP1060, DOI: <https://doi.org/10.2172/1769668>.
2. Kim, Y. J., J. Y. Jung, and U. Mishra. 2021. Managing Soil Organic Carbon for Climate Change Mitigation and Food Security, In Rattan Lal (Ed) *Soil Organic Carbon and Feeding the Future: Basic Soil Processes*, Advances in Soil Science, Taylor and Francis, Boca Raton, FL, doi: 10.1201/9781003243090-2.

3. Joshi, D.R., D.E. Clay, S. Clay, A. Smart, S.A. Clay, T.P. Kharel and U. Mishra. 2019. Soil and land-use change sustainability in the Northern Great Plains of the USA. In S. Appiah-Opoku (ed.) *Land Use*, IntechOpen Limited, London, United Kingdom; doi: 10.5772/intechopen.84781.
4. Lajtha, K., V.L. Bailey, K. McFarlane, K. Paustian, D. Bachelet, R. Abramoff, D. Angers, S.A. Billings, D. Cerkowski, Y.G. Djalynas, A. Finzi, N.H.F. French, S. Frey, N.P. Gurwick, J. Harden, J.M.F. Johnson, K. Johnson, J. Lehmann, S. Liu, B. McConkey, U. Mishra, S. Ollinger, D. Paré, F. Paz Pellat, D. deB. Richter, S.M. Schaeffer, J. Schimel, C. Shaw, J. Tang, K. Todd-Brown, C. Trettin, M. Waldrop, T. Whitman, and K. Wickland, 2018: Chapter 12: Soils. In *Second State of the Carbon Cycle Report (SOCCR2): A Sustained Assessment Report* [Cavallaro, N., G. Shrestha, R. Birdsey, M. A. Mayes, R. G. Najjar, S. C. Reed, P. Romero-Lankao, and Z. Zhu (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, pp. 469-506, <https://doi.org/10.7930/SOCCR2.2018.Ch12>.
5. Mitran, T., U. Mishra, and R. Lal. 2018. Climate change impacts on soil carbon stocks in India. In Lal, R., B.A. Stewart (eds.) *Advances in Soil Science: Soil and Climate*, CRC press, Taylor and Francis Group, FL, USA.
6. Clay, D.E., and U. Mishra. 2017. The importance of crop residues in maintaining soil organic carbon in agroecosystems. In Zhangcai Q., Mishra U., and Hastings A. (eds.) *Bioenergy and Land Use Change*, Geophysical Monograph 231, John Wiley & Sons, Inc. p. 115- 123.
7. Hoffman, F. M., C.D. Koven, G. Keppel-Aleks, D.M. Lawrence, W.J. Riley, J.T. Randerson, A. Ahlström, G. Abramowitz, D.D. Baldocchi, M.J. Best, B. Bond-Lamberty, M.G. De Kauwe, A.S. Denning, A.R. Desai, V. Eyring, J.B. Fisher, R.A. Fisher, P.J. Gleckler, M. Huang, G. Hugelius, A.K. Jain, N.Y. Kiang, H. Kim, R.D. Koster, S.V. Kumar, H. Li, Y. Luo, J. Mao, N.G. McDowell, U. Mishra, P.R. Moorcroft, G.S.H. Pau, D.M. Ricciuto, K. Schaefer, C.R. Schwalm, S.P. Serbin, E. Shevliakova, A.G. Slater, J. Tang, M. Williams, J. Xia, C. Xu, R. Joseph, and D. Koch. 2017. *International Land Model Benchmarking (ILAMB) Workshop Report*, Technical Report DOE/SC-0186, U.S. Department of Energy, Office of Science, Germantown, Maryland, USA, doi:10.2172/1330803.
8. Larson, S.L., R. Busby, W.A. Martin, V.F. Median, P. Seman, C.A. Hiemstra, U. Mishra, and T. Larson. 2017. *Sustainable carbon dioxide sequestration as soil carbon to achieve carbon neutral status for DoD lands*, Engineer Research and Development Center, ERDC TR-17-13, US Army Corps of Engineers, Washington DC, USA.
9. Mishra U., and W.J. Riley. 2012. Active-layer, permafrost, and whole-profile depth variability of Alaskan soils. In: Minasny, B., Brendan M., and McBratney, A.B. (eds.) "Digital Soil Assessments and Beyond: Proceedings of the 5th Global Workshop on Digital Soil Mapping 2012". CRC Press. p. 83-88.
10. Mishra U., and R. Lal. 2011. Predictive mapping of soil organic carbon: A case study using geographic weighted regression approach. In: Clay, D. and Shanahan, J. (eds.) "GIS Applications in Agriculture– Nutrient Management for Improved Energy Efficiency". CRC Press. p. 209-233.

## **TECHNICAL REPORTS**

1. Mishra, U., S. Gautam. 2022. Improving and testing machine learning methods for benchmarking soil carbon dynamics representation of land surface models, SAND2022-12922, Sandia National Laboratories, CA, USA.
2. Mishra, U. 2022. Investigating soil carbon vulnerability and bioenergy sustainability under changing climate, SAND2022-3539C, Sandia National Laboratories, CA, USA.
3. Ludden, C., A. Schore, E. Hall, U. Mishra, S. Scott, M. Lara. 2022. Progress Toward Mapping and Modeling Arctic-Boreal Peatland Dynamics, SAND2022-12169C, Sandia National Laboratories, CA, USA.
4. Scott, S., U. Mishra, M. Lara, A. Schore, E. Hall. 2022. Arctic-Boreal Peatland Mapping in Alaska: Implications for Historical Peat-Fire Dynamics, SAND2022-8990C, Sandia National Laboratories, CA, USA.
5. Mishra, U., S. Scott, R. Davis, C. Smallwood, T. Turner. 2024. Soils in the climate crisis: Modeling microbiomes during disturbance workshop report, SAND2024-01307R, Sandia National Laboratories, CA, USA.

## **BOOK EDITED**

- Zhangcai C., Mishra U., and Hastings A. (eds.) “Bioenergy and land use change” John Wiley & Sons, Inc., NJ, USA and the American Geophysical Union, Washington, D.C., USA, ISBN: 978-1-119-29734-5.

## **PROFESSIONAL SERVICE**

### **1. Member, Committee on budget and finance**

- International Union of Soil Science, Jan 2023 – present

### **2. Member, International Advisory Committee**

- 16<sup>th</sup> International Conference of East and South Asian Federation of Soil Science conference 2024.

### **3. Member, Scientific committee**

- Pedometrics 2024 conference

### **4. Chair, International Soil Science Award Committee**

- Soil Science Society of America, Jan 2021 – Dec 2021; Jan 2022 – Dec 2022; Jan 2023 – Dec 2023

### **5. Chair, Soil and the Critical Zone Processes Technical Committee**

- American Geophysical Union (Jan 2020 – Dec 2020).

## **6. Co-chair, Data & observation model link panel and Executive board member**

- International Soil Modeling Consortium (2017 – 2019, 2020 – 2023).

## **7. Member, International Soil Science Award Committee**

- Soil Science Society of America, Jan 2019 – Dec 2019; Jan 2020 – Dec 2020.

## **8. Member, Rien van Genuchten Award & Early Career Award committees**

- International Soil Modeling Consortium (2018).

## **9. Member, Fellows Committee**

- Soil Science Society of America, Jan 1, 2018 – Dec 31, 2019.

## **10. Member, Soil Science Research Award Committee**

- Soil Science Society of America, Jan 1, 2015 – Dec 31, 2016.

## **11. Member, Editorial Board**

- Associate Editor, Soil Science Society of America Journal (2022 – 2024, 2025 – 2027)
- Associate Editor, Tropical Agricultural Research, Postgraduate Institute of Agriculture, University of Peradeniya, Sri Lanka (2023 – present).
- Member, Editorial Board, Rural Development, Vytautas Magnus University Agriculture Academy, Lithuania (2025 – present)
- Associate Editor, Vadose Zone Journal, Soil Science Society of America publication (2014 – 2022)
- Technical Editor, Agronomy Journal, American Society of Agronomy publication (2019 – 2021)
- Associate Editor, Korean Journal of Soil Science and Fertilizer (2014 – 2017)
- Associate Editor, Agronomy Journal, American Society of Agronomy publication (2009 – 2012, 2012 – 2015)

## **12. Journal Reviewer:** Reviewed one or more manuscripts for different journals

\* Arctic, Antarctic, and Alpine Research \* Agricultural & Environmental Letters \* Agriculture, Ecosystems, and Environment \* Agronomy Journal \* Applied and Environmental Soil Science \* Archives of Agronomy & Soil science \* Biogeosciences \* Biomass & Bioenergy \* Carbon Management \* Catena \* Climatic Change \* Computers and Geosciences \* Earth's Future \* Ecosystems \* Environment International \* Environmental Monitoring and Assessment \* Environmental Research Letters \* European Journal of Soil Science \* Frontiers in Ecology and the Environment \* Frontiers in Soil Science \* Geoderma \* Geophysical Research Letters \* Geoscientific Model Development \* Global Biogeochemical Cycles \* Global Change Biology \* Global Change Biology Bioenergy \* International Journal of Agronomy \* International Journal

of Geographical Information Science \* Journal of Environmental Management \* Journal of Advances in Modeling Earth Systems \* JGR-Atmospheres \* JGR-Biogeosciences \* JGR- Earth Surface \* Land Degradation and Development \* Nature Communications \* Nature Climate Change \* Northern Journal of Applied Forestry \* Nutrient Cycling in Agroecosystems \* One Earth \* Pedosphere \* Plant & soils \* Plos one \* Polar Research \* Precision Agriculture \* Resources, conservation & Recycling \* Science Advances \* Science of the Total Environment \* Scientific Reports \* Sustainable Energy Technologies and Assessments \* Soil \* Soil Science \* Soil Science Society of America Journal \* Soil & Tillage Research \* USDA publications \* USGS publications \* Vadose Zone Journal

**13. Proposal Reviewer:** Reviewed one or multiple proposals for following agencies

- United States Department of Agriculture
- National Science Foundation, USA
- Swiss National Science Foundation
- National Aeronautics and Space Administration
- U.S. Department of Energy
- Croatia Science Foundation
- Ontario Ministry of Agriculture, Canada

**14. Conference session convener:**

- Greenhouse gas budget assessment and component flux evaluation in tropical asia and beyond, Asia Oceania Geosciences Society, Fukuoka, Japan, Aug 2-7, 2026.
- Soil Organic Carbon Dynamics – Bridging Observations, Experiments, and Models Across Scales, Asia Oceania Geosciences Society, Fukuoka, Japan, Aug 2-7, 2026.
- Advancing Earth System Predictability: AI-Enhanced Integration of Models, Experiments, and Biogeochemical Processes, AGU Fall meeting, New Orleans, Louisiana, Dec 17, 2025.
- Biogeochemical processes across scales, AsiaFlux 2025 conference, Pangkalan Kerinci, Riau, Indonesia, Oct 20-25, 2025.
- Soil Carbon Storage & Dynamics: Enhancing Sequestration and Resilience, Soils For Our Future 2025 conference, Winnipeg, Canada, July 20-25, 2025.
- Data Model Integration to Enhance Our Understanding About Soil Carbon Storage and Dynamics, Asia Oceania Geosciences Society, Singapore, July 27 – Aug 1, 2025.
- Greenhouse Gas Budget and Component Fluxes in North, East, South, and Southeast Asia, Asia Oceania Geosciences Society, Singapore, July 27 – Aug 1, 2025.
- C- Farming: the next frontier for science & society, American Geophysical Union, Washington DC, Dec 9-13, 2024.
- Coupling remote sensing with Artificial Intelligence and physics-based modeling to improve spatio-temporal prediction of SOC stocks, American Geophysical Union, Washington DC, Dec 9-13, 2024.
- Recent Advances in soils research – 16<sup>th</sup> International Conference of East and South Asian Federation of Soil Science, Thai Nguyen, Vietnam, March 26 – 29, 2024.
- Enhancing Our Understanding About Soil Carbon Storage and Dynamics – Asia Oceania Geosciences Society, Pyeongchang, Gangwon-do, South Korea, June 23 -28, 2024.
- Modelling biogeochemical fluxes and organic carbon dynamics in soil systems – International Soil Modeling Consortium, Tianjin University, China, May 18 -21, 2021 (organized virtually).

- Permafrost, peat and frozen soils – International Soil Modeling Consortium, Wageningen, Netherlands, Nov 5-7, 2018.
- Biofuel-induced land use land cover change and its biogeochemical and biophysical impacts- American Geophysical Union Fall meeting 2015.
- Agriculture and land management impacts on soil carbon processes- Soil Science Society of America annual meeting, Nov 2-5, 2014.
- Environmental aspects of bioenergy production- American Geophysical Union Fall meeting 2010.

### **15. Chair, EVS Seminar series**

- Chair, Environmental Science Division seminar series, Argonne National Laboratory (2012 - 2016).

### **16. Outstanding Student Paper Awards Judge**

- Judge, Outstanding Student Paper Awards, American Geophysical Union (2011, 2012, 2013, 2014).
- Judge, Graduate Student presentations, Soil Science Society of America (2014).

## **SELECTED INVITED PRESENTATIONS**

1. Mishra, U. 2026. Global Soil Organic Carbon Storage & Dynamics: Current knowledge & Machine Learning Potentials, University of Wisconsin, Madison, WI, Feb 18, 2026.
2. Mishra, U. 2025. Using Machine Learning and generative AI to Constrain Uncertainties in Soil Organic Carbon storage & Dynamics Predictions, AGU Fall meeting, New Orleans LA, Dec 15-19, 2025, SAND2025-14963A.
3. Mishra, U. 2025. Machine learning and generative AI to constrain uncertainties in soil organic carbon storage & dynamics predictions, AsiaFlux 2025, Riau, Indonesia, Oct 23, 2025, SAND2025-14964A.
4. Mishra, U. 2025. Role of machine learning in constraining our knowledge on global soil organic carbon storage & dynamics, Distinguished Lecture, AOGS 2025, Singapore, Jul 30, SAND2025-00151A.
5. Mishra, U., K. Nyaupane, Z. Shi, Z. Qin, and J. Salinas. 2025. Global Soil Organic Carbon Storage & Dynamics: Current Knowledge and Machine Learning Applications, EGU 2025, Vienna, Austria, Apr 28, 2025, SAND2025-00092A.
6. Mishra, U. 2024. Understanding the current storage and potential dynamics of global soil organic carbon, BioEPIC Seminar Series, Lawrence Berkeley National Laboratory, Oct 23, 2024 (invited plenary presentation).
7. Mishra, U. 2024. Our understanding of the global soil organic carbon storage & dynamics, National Labs Day, University of California Merced, Oct 4, 2024 (invited plenary presentation).

8. Mishra, U. 2024. The opportunities and uncertainties of carbon farming, XXIX Argentinean congress of soil science, Catamarca, Argentina, May 21-24, 2024 (invited plenary presentation).
9. Mishra U. 2024. Using machine learning to investigate soil carbon storage & dynamics, Universidad Nacional Del Centro De La Provincia De Buenos Aires, Argentina, May 21, 2024.
10. Mishra, U. 2024. Our knowledge on storage and fate of global soil carbon, 16<sup>th</sup> International Conference of East and South Asian Federation of Soil Science, Thai Nguyen, Vietnam, March 26 – 29, 2024, SAND2025-00079A (invited plenary presentation).
11. Mishra, U. 2024. Our knowledge about storage & fate of global soil organic carbon, Sustainability, Bayer Crop Science, Feb 15, 2024 (invited industry seminar).
12. Mishra, U. 2023. Carbon farming: opportunities and uncertainties, Rural Development 2023, Kaunas, Lithuania, Sept. 27, 2023 (invited plenary presentation).
13. Mishra, U. 2023. Our knowledge on storage and fate of global soil carbon, Global Soil Security 2023, Seoul, South Korea, June 27, 2023 (invited plenary presentation).
14. Mishra, U. 2023. Data model integration to investigate bioenergy sustainability and soil carbon dynamics under changing climate, Albuquerque, NM, Mar 13, 2023 (invited workshop presentation).
15. Mishra, U. 2022. Fundamental soil science to enhance Earth system predictability, Soils in the climate crisis: Modeling Microbiome During Disturbance, Sandia National Laboratories, June 9, 2022 (invited workshop presentation).
16. Mishra, U. 2022. Carbon farming: a tool to mitigate climate change and improve soil health, ADRA International, Apr 7, 2022 (virtual seminar).
17. Mishra, U. 2022. Predicting land use and climate change impacts on soil carbon, What is water's role in a carbon neutral future? Sandia National Laboratories, Apr 4-6, 2022 (invited workshop presentation).
18. Mishra, U. 2022. Investigating soil carbon vulnerability and bioenergy sustainability under changing climate, Bioenergy's role in soil carbon storage workshop, DOE-BETO, Mar 28-29, 2022 (invited workshop presentation).
19. Mishra, U. 2022. Observed and modeled environmental controls of regional and global SOC stocks, Forest Soil carbon and Beyond, International online workshop, Mar 1-3, 2022 (invited workshop presentation).
20. Mishra, U. 2022. Current knowledge on soil carbon storage and dynamics and remaining challenges, Bjerknes Center for Climate Research, Bergen, Norway, Nov. 21, 2022.

21. Mishra, U. 2022. Current knowledge on soil carbon storage and dynamics, Korean Society of Soil Science and Fertilizers, Jeju, South Korea, Oct. 20, 2022 (invited plenary presentation).
22. Mishra, U. 2022. Current knowledge on soil carbon storage and dynamics and remaining challenges, Norwegian University of Science and Technology, Trondheim, Norway, Nov. 23, 2022 (invited university seminar).
23. Mishra, U. 2022. Machine learning to investigate soil organic carbon storage and dynamics, University of California, Santa Cruz, CA, Sep. 26, 2022 (invited university seminar).
24. Mishra, U. 2022. Carbon farming: a tool to mitigate climate change and enhance food security, California State University Fresno, Sep. 14, 2022 (invited university seminar).
25. Mishra, U. 2021. Applications of machine learning to soil carbon research, 4th Training course on New Advances in Land Carbon Cycle Modeling, Northern Arizona University, May, 17-28, 2021 (invited university seminar).
26. Mishra, U., K. Yeo, S. Gautam, K. Nyaupane and K Adhikari. 2021. Machine learning to investigate soil carbon storage and dynamics, Ecological Society of America, Long Beach, CA, Aug 6- 10, 2021 (invited conference presentation).
27. Mishra, U. 2021. Use of machine learning to investigate soil organic carbon storage and dynamics, University of Arizona, Tuscon, AZ, Apr 29, 2021 (invited university seminar).
28. Mishra, U. 2021. Predicting land use and climate change impacts on soil organic carbon, Sandia – Illinois Climate Workshop, Nov 18, 2021 (invited workshop presentation).
29. Mishra, U. 2021. Spatial heterogeneity and environmental predictors of permafrost region soil organic carbon, Interagency Arctic Research Policy Committee, Mar 30, 2021 (invited workshop presentation).
30. Mishra, U. 2020. Investigating land use and climate change impacts on soil organic carbon, Lawrence Livermore National Laboratory, Livermore, CA, Dec. 8, 2020 (invited workshop presentation).
31. Mishra, U. 2020. Machine learning to investigate soil organic carbon storage and dynamics, NASA Jet Propulsion Laboratory, Pasadena, CA, Apr. 30, 2020 (invited workshop presentation).
32. Mishra, U., S. Gautam, T. Huntington, and C. Scown. 2020. Comparing machine learning with process-based models: Biomass and soil organic carbon predictions, Inter- Bioenergy Research Center Machine Learning/Artificial Intelligence Workshop, Washington DC, Feb. 26-27, 2020 (invited workshop presentation).
33. Scown, C., T. Huntington, and U. Mishra. 2020. Machine learning for predicting feedstock yields, biofuel production costs, and emissions, Inter-Bioenergy Research Center Machine Learning/Artificial Intelligence Workshop, Washington DC, Feb 26-27, 2020 (invited workshop presentation).

34. Mishra U. 2019. Predicting land use and climate change impacts on soil organic carbon, Kangwon National University, South Korea, June 24, 2019 (invited university seminar).
35. Mishra, U., S. Gautam, and E. Mass. 2019. Predicting land use change induced biogeochemical changes, Modeling Approaches to Develop Sustainable Biofuels: A Joint Bioenergy Research Center Workshop, Chicago, IL, May 2-3, 2019 (invited workshop presentation).
36. Mishra, U., and F. Wang. 2019. Marginal lands for bioenergy crops, Modeling Approaches to Develop Sustainable Biofuels: A Joint Bioenergy Research Center Workshop, Chicago, IL, May 2-3, 2019 (invited workshop presentation).
37. Mishra U. 2018. Soil properties of permafrost systems and their representation in earth system models, International Soil Reference and Information Centre, Wageningen, Netherlands, Nov. 08, 2018 (invited seminar).
38. Mishra U. 2018. Improving soil carbon representation in earth system models using field observations and geospatial science, Ghent University, Belgium, Nov. 09, 2018 (invited university seminar).
39. Mishra U. 2018. Soil sustains humanity, OutLoud lecture series, Argonne National Laboratory, Illinois, USA, June 15, 2018 (invited plenary presentation).
40. Mishra U. 2017. Informing earth system models using soil carbon observations and geospatial science, Korean Society of Soil Science and Fertilizer annual meeting, South Korea, May 19, 2017 (invited plenary presentation).
41. Mishra U. 2017. Informing land surface models with observations and geospatial science, Pedotransfer functions in Earth System Sciences; Challenges and perspectives, International Soil Modeling Consortium, New Orleans, Louisiana, USA. Dec 10, 2017 (invited workshop presentation).
42. Mishra U. 2017. Soil-forming processes and factors regulating the spatial heterogeneity of soil carbon stocks, DOE-Environmental System Science PI Meeting, Washington D.C., USA, Apr. 26, 2017 (invited workshop presentation).
43. Mishra U., G. Hugelius, Y. Yang, and The Permafrost Carbon Network. 2017. Spatial and vertical heterogeneity of permafrost soil organic carbon stocks, 7th Annual Meeting of the Permafrost Carbon Network, New Orleans, Louisiana, USA. Dec 10, 2017.
44. Mishra U. 2017. Characterizing and using spatial heterogeneity of soil carbon stocks, Korea Polar Research Institute, South Korea, May 22, 2017 (invited seminar).
45. Mishra U. 2016. Quantifying environmental controls on stocks, uncertainties, and scaling of soil organic carbon, American Geophysical Union Fall meeting, San Francisco, California, USA. Dec 14, 2016 (invited conference presentation).
46. Mishra U. 2016. Benchmarking Earth System Models: An emerging domain in Earth System science, University of Illinois at Chicago, Illinois, USA, Feb. 12, 2016 (invited university seminar).

47. Mishra U. 2015. Quantifying climatic and anthropogenic impacts on soil organic carbon, Northwestern University, Evanston, Illinois, USA. Oct. 16, 2015 (invited university seminar).
48. Mishra U. 2015. Land carbon: A knowledge gap in the global carbon cycle, University of Peradeniya, Sri Lanka, Nov. 20, 2015 (invited plenary presentation).
49. Mishra U., B. Drewniak, and Z. Fan. 2015. Informing climate change studies using soil survey information, Soil Science Society of America annual meeting, Minneapolis, Minnesota, USA, Nov. 16, 2015 (invited conference presentation).
50. Mishra U., and S. Shijie. 2015. Recent advances in depth modeling of soil carbon storage, American Geophysical Union Fall meeting, San Francisco, California, USA, Dec 17, 2015 (invited conference presentation).
51. Mishra U., J. Jastrow, R. Matamala, K. Lagory, and J. Krummel. 2014. Benchmarking earth system models: A new domain for soil scientists, USDA-Natural Resource Conservation Services, Lincoln, Nebraska, USA, Mar. 18, 2014 (invited federal agency seminar).
52. Mishra U. 2014. Environmental controls and spatial representation of soil properties across Alaska: comparison between geospatial and CMIP5 earth system models, Korea Polar Research Institute, South Korea June 16, 2014 (invited plenary presentation).
53. Mishra U., M.S. Torn, W.J. Riley, S. Ogle, and B. Drewniak. 2014. Predicting land use and climate change impacts on soil organic carbon at regional scales, Soil Science Society of America annual meeting, Long Beach, California, USA, Nov. 05, 2014 (invited conference presentation).
54. Mishra U., 2012. Quantifying and predicting climatic and anthropogenic impacts on soil organic carbon pool, University of Sydney, Sydney, Australia, Apr. 06, 2012 (invited university seminar).
55. Mishra U. 2012. Predicting climate and land use change impact on soil organic carbon stocks at regional scales, American Society of Agronomy annual meeting, Cincinnati, Ohio, USA. Oct. 21, 2012 (invited conference presentation).
56. Mishra U., and M.S. Torn. 2011. Rainfed productivity of Miscanthus biomass on US croplands and its potential impact on soil organic carbon, International Society of Industrial Ecology, Berkeley, California, USA. June 09, 2011 (invited conference presentation).
57. Mishra U., 2011. Terrestrial carbon sequestration: a local solution to global problems, Operation Research Society Nepal, Kathmandu, Nepal, Jan. 20, 2011 (invited conference presentation).
58. Mishra U., 2010. Predicting the storage and dynamics of soil organic carbon in terrestrial ecosystems, USGS Western Geographic Science Center, Menlo Park, California, USA, Aug. 25, 2010 (invited federal agency seminar).

## CONTRIBUTED PRESENTATIONS

1. Vitharana, U.A.V., U. Mishra. 2026. Climate and topography determine the spatial heterogeneity of soil organic carbon stocks across Sri Lanka, AOGS 2026, Fukuoka, Japan, August 2-7, 2026
2. Mishra, U., S. Gautam & C. G. Jung. 2025. Machine Learning and Generative AI to Constrain Uncertainties in Soil Organic Carbon Storage and Dynamics Predictions, ILAMB workshop, New Orleans LA, Dec 11-14, 2025.
3. Gautam, S., U. Mishra & C.J. Jung. 2025. ML-based reduced order models to predict soil and site-specific impacts of land use change on soil carbon, ILAMB workshop, New Orleans LA, Dec 11-14, 2025.
4. Jung, C.J., U. Mishra, S. Gautam. 2025. A Hybrid ML-Microbial-Informed Framework Captures Seasonal Carbon Fluxes in E3SM Land Model, ILAMB workshop, New Orleans LA, Dec 11-14, 2025.
5. Yi, Y., W. Peng, U. Mishra, J. Kimball, J. Watts, S.J. Goetz. 2025. Characterizing soil organic carbon distribution and disturbance effects in Arctic and Boreal ecosystems using a two-stage deep learning framework, AGU Fall meeting, New Orleans LA, Dec 15-19, 2025.
6. Jung, C.G., S. Gautam, U. Mishra. 2025. Decadal-scale assessment of no-tillage impacts on crop productivity and soil carbon using a multi-model ensemble approach, AGU Fall meeting, New Orleans LA, Dec 15-19, 2025.
7. Jung, C.G., S. Gautam, U. Mishra. 2025. A microbially enabled E3SM land model reveals contrasting seasonal responses of ecosystem respiration across NEON grass land sites, AGU Fall meeting, New Orleans LA, Dec 15-19, 2025.
8. Gautam, S., C.G. Jung, U. Mishra. 2025. Ensemble agroecosystem modeling to predict crop yield and soil carbon change in CONUS croplands, AGU Fall meeting, New Orleans LA, Dec 15-19, 2025.
9. Qin, Z., J.G. Canadell, P. Ciais, M. Chen, S.C. Cook-Patton, T. Li, U. Mishra, S. Piao, P. Smith, Y. Wang, W. Yuan, Y. Zhu. 2025. Exploring land-use-based ecosystem carbon sources and sinks, European Geosciences Union, General Assembly 2025, Vienna, Austria, Apr 27- May 2, 2025.
10. Salinas, J., S. Gautam, C. Fan, M. Kamruzzaman, U. Balakrishnan, K. Poorey, U. Mishra. 2025. Generative-AI-aided uncertainty reduction in permafrost soil organic carbon predictions, USACM Energy & Earth Systems Technical Thrust Area (TTA) – Artificial Intelligence and Digital Twins for Earth Systems, Austin, Texas, Sep 22-24, 2025.
11. Gautam, S., U. Mishra, and C.D. Scown. 2024. Predicting Yield and Soil Carbon Dynamics for Bioenergy Crops Using Machine Learning-Based Reduced Order Models DOE-BER-BSSD PI meeting, Washington DC, Mar 31-2, 2025.

12. Salinas, J., S. Gautam, C. Fan, M. Kamruzzaman, U. Balakrishnan, K. Poorey, U. Mishra. 2025. Reducing uncertainties in permafrost soil organic carbon using gen-AI powered digital twins, Society for Industrial and Applied Mathematics, Fort Worth, Texas, Mar 3-7, 2025.
13. Gautam, S., and U. Mishra. 2025. Sustainability of Irrigated Bioenergy Sorghum Across the Continental USA, EGU 2025, Vienna, Austria.
14. Gautam, S., U. Mishra, and C.D. Scown. 2024. Integrating machine learning with agroecosystem model to predict biomass yield and soil carbon dynamics under Changing Climate , AGU Fall meeting, Washington DC, Dec 9-13, 2024.
15. Gautam, S., U. Mishra, and C.D. Scown. 2024. Machine learning based reduced-order model to predict biomass yield and soil carbon dynamics under high emission scenario, DOE JBEI Annual review, Berkeley, CA, Dec 2-3, 2024.
16. Mishra U. 2024. RUBISCO SOC Working Group, Washington DC, Dec 11, 2024.
17. Jung, C.G., U. Mishra, Y. Song. 2024. Influence of Soil Microbes on Spatiotemporal Dynamics of Soil Carbon: Coupling Machine Learning with ESM, AGU Fall meeting, Washington DC, Dec 9-13, 2024.
18. Wilson, S., S. Gautam, U. Mishra, Y. Song. 2024. Parameterizing Biochar Effect on Climate-Smart Agriculture Using Artificial Intelligence and Land Surface Model, AGU Fall meeting, Washington DC, Dec 9-13, 2024.
19. Ozpolat, E., E. Shelef, M.B. Abbott, S. Mark, U. Mishra & N. Wondolowski. 2024. Comparing the Magnitude of Hillslope and Channel Erosion in Continuous and Discontinuous Permafrost Areas in Alaska , AGU Fall meeting, Washington DC, Dec 9-13, 2024.
20. Mishra, U., S. Gautam, & C.G. Jung. 2024. Efficacy of Carbon Farming Practices to Enhance Soil Carbon Sequestration and Soil Health , AGU Fall meeting, Washington DC, Dec 9-13, 2024.
21. Wilson, S., Y. Song, & U. Mishra. 2024. Parameterizing the integrated effect of biochar addition on soil greenhouse gas emission and carbon sequestration using artificial intelligence and land surface model, Geological Society of America connects 2024, Anaheim, CA, Sep. 22-25, 2024.
22. Mishra, U. 2024. Use of Machine learning to investigate soil carbon storage & dynamics, DOE-EESM PI meeting, Washington DC, Aug. 5-9, 2024.
23. Vitharana, U., & U. Mishra. 2024. Digital soil mapping of Soil pH in the Wet Zone of Sri Lanka, 16<sup>th</sup> International Conference of East and South Asian Federation of Soil Science, Thai Nguyen, Vietnam, March 26 – 29, 2024.
24. Mishra, U., S. Gautam, C.G. Jung, & C. Fan. 2024. Response of soil organic carbon to land use & climate change, Sandia National Laboratory, Albuquerque, New Mexico, March 6, 2024.

25. Mishra, U. 2023. RUBISCO soil organic carbon working group, Project annual meeting, San Francisco, Dec 14, 2023.
26. Mishra, U., S. Gautam, N. Baral & S. Scown. 2023. Data model integration to investigate bioenergy sustainability and biogeochemical dynamics under changing land use & climate, JBEI Annual PI meeting, Napa Valley, Oct 10-12, 2023.
27. Yi, Y., W. Peng, J. Watts, B. Rodgers, S. Natali, U. Mishra, 2023. Potential of multi-temporal and multi-frequency SAR data in characterizing regional soil organic carbon distribution in Alaska, American Geophysical Union, San Francisco, Dec 11-15, 2023.
28. Tao, F. et al. 2023. Microbial Carbon use efficiency promotes global soil carbon storage, American Geophysical Union, San Francisco, Dec 11-15, 2023.
29. Lara, M.J., R.J. Michaelides, U. Mishra and S.N. Scott. 2023. Peatland fires increase between 1985 and 2022 across Alaska, American Geophysical Union, San Francisco, Dec 11-15, 2023.
30. Wilson, S., S. Gautam, U. Mishra, and Y. Song. 2023. Parameterizing Biochar Effect on Climate-Smart Agriculture Using Artificial Intelligence and Land Surface Model, American Geophysical Union, San Francisco, Dec 11-15, 2023.
31. Lara, M.J., U. Mishra and S.N. Scott. 2024. Peatland fires increase between 1985 and 2022 in Arctic and Boreal Alaska, 12<sup>th</sup> International Conference on Permafrost, Whitehorse, Canada June 16-20, 2024.
32. Fan, C., Y. Song, S. Gautam, and U. Mishra. 2022. Mapping microbial functional diversity and it's environmental response for application in Earth system models, American Geophysical Union, Chicago, Dec 12-16, 2022.
33. Wang, Z., D. Sihi, J. Kumar, S.R. Weintraub-Leff, K. Todd-Brown, and U. Mishra. 2022. Upscaling soil organic carbon measurements at the continental scale by multivariate clustering analysis and machine learning, American Geophysical Union, Chicago, Dec 12-16, 2022.
34. Qin, Z., K. Guan, W. Zhou, B. Peng, J. Tang, U. Mishra, A. Margenot. 2022. Assessing long-term impacts of cover crops on soil organic carbon in the central U.S. Midwestern agroecosystems, American Geophysical Union, Chicago, Dec 12-16, 2022.
35. Gautam, S., U. Mishra, and C.D. Scown. 2022. Reduced order models to project future trajectories of bioenergy crop yields and soil carbon changes, American Geophysical Union, Chicago, Dec 12-16, 2022.
36. Nyaupane, K., U. Mishra, and S. Gautam. 2022. Observation based benchmarks may improve representation of soil organic carbon in land surface models, American Geophysical Union, Chicago, Dec 12-16, 2022.

37. Yi Y., K. B. Dogaheh, M. Moghaddam, U. Mishra, and J. Kimball. 2022. Mapping surface organic soil properties in Arctic Tundra using C-band SAR data, American Geophysical Union, Chicago, Dec 12-16, 2022.
38. Mishra, U. and S. Gautam. 2022. Benchmarking model representation of soil organic carbon storage and dynamics, 8th International Symposium on Soil Organic Matter, Seoul, South Korea, June 26-30, 2022.
39. Mishra, U. 2022. Machine learning to investigate model representation of SOC Storage and dynamics, 22<sup>nd</sup> World Congress of Soil Science, Glasgow, Scotland, July 31-Aug 5, 2022.
40. Lara, M.J., A. Schore, E. Hall, C. Friedmann, W. Chen, D. Anderson, U. Mishra and S.N. Scott. 2022. Arctic-Boreal peatland mapping in Alaska: Implications for historical peat-fire dynamics, 16<sup>th</sup> International Circumpolar Remote Sensing Symposium, Fairbanks, Alaska May 16-20, 2022.
41. Hakes, R.S.P., S. Gautam, R.M. Hadden, M.W. Kury, M.K. Lara, S.S. McAllister, U. Mishra, and S.N. Scott. 2022. Peat fires and climate change: Modeling greenhouse gas emissions by 2100, International Association of Wildland Fire, Fire and Climate Conference, Pasadena, CA, USA, May 23-27, 2022.
42. Mishra, U. 2021. Soil carbon dynamics under changing land use and climate, Biosciences External Review Board meeting, Sandia National Laboratories, Oct 19-20, 2021 (virtual seminar).
43. Mishra, U. 2021. Predicting soil carbon storage and dynamics under changing climate, Geochemistry Department, Earth Sciences Division, Sandia National Laboratories, Nov 16, 2021.
44. Vitharana, U.W.A., N.J. Casson, M.M.S.M. Munasinghe, D. Kumaragamage, and U. Mishra. 2021. National scale mapping of soil physical and chemical properties, ASA-CSSA-SSSA International Annual Meeting, Salt Lake City, UT, Nov 7-10, 2021.
45. Gautam, S., U. Mishra, and C. Scown. 2021. Sustainable bioenergy crops in continental US cultivated lands, JBEI Annual review, Dec 6 -7, 2021.
46. Gautam, S., U. Mishra, C. Scown, and Y. Zhang. 2021. Sustainable bioenergy crops in continental US cultivated lands, American Geophysical Union, New Orleans, LA, Dec 13-17, 2021.
47. Song, Y., C. Fan, S. Gautam, and U. Mishra. 2021. Microbial functional composition across diverse environments: a dataset to parameterize and benchmark microbial-mediated soil organic matter decomposition models, American Geophysical Union, New Orleans, LA, Dec 13-17, 2021.
48. Kim, Y.J., D. Laffly, S-E Kim, L. Nilsen, J. Chi, Y. B. Lee, S.J. Jung, U. Mishra, Y.K. Lee, and J.Y. Jung. 2021. Factors affecting soil biogeochemical development in the glacier foreland of Midtre Lovénbreen, Svalbard, American Geophysical Union, New Orleans, LA, Dec 13-17, 2021.

49. Shi, Z., F.M. Hoffman, M. Xu, U. Mishra, S.D. Allison, and J.T. Randerson. 2021. Soil carbon-climate feedback during 21<sup>st</sup> century, American Geophysical Union, New Orleans, LA, Dec 13-17, 2021.
50. Gautam, S., U. Mishra and C.D. Scown. 2021. Environmental sustainability of bioenergy crops in continental United States, Joint BioEnergy Institute PI meeting, virtual, June 1-2, 2021.
51. Mishra, U. 2020. Soil organic carbon working group status and update, DOE-Regional and Global Model Analysis Principal Investigators meeting, virtual, Oct 13-16, 2020.
52. Mishra, U., F. Hoffman, and W.J. Riley. 2020. Deriving functional relationships between environmental factors and soil organic carbon stocks, DOE-Regional and Global Model Analysis Principal Investigators meeting, online Oct 13-16, 2020.
53. Matamala, R., H. Dafeng, J. Jastrow, F. Calderon, C.-L. Ping, and U. Mishra. 2020. Understanding Composition and Decomposability of Arctic Soils by Integrating Laboratory Incubations with New Measurements and Models, American Geophysical Union Fall meeting, online, Dec 7-11, 2020.
54. Reid, P., E. Shelef, J. Rowland, J. Schwenk, and U. Mishra. 2020. Automated Mapping of Arctic Floodplains to Improve Estimates of Sediment and Carbon Fluxes, American Geophysical Union Fall meeting, online, Dec 7-11, 2020.
55. Tao, F., Y. Liu, and U. Mishra. 2020. Big data-driven modelling reveals key mechanisms underlying soil organic carbon stabilization, American Geophysical Union Fall meeting, online, Dec 7-11, 2020.
56. Vitharana, U.W.A., N. Casson, D. Kumaragamage, G. Gunn, S. Higgins, and U. Mishra. 2020. Spatial heterogeneity and environmental controllers of soil organic carbon stocks in a boreal forest, European Geophysical Union General Assembly, Vienna, Austria, May 3-9, 2020.
57. Gautam, S., U. Mishra, C. Scown, and Y. Zhang. 2019. Suitability analysis for biomass Sorghum production in the continental United States, American Geophysical Union Fall meeting, San Francisco, Dec 9-13, 2019.
58. Baatz, R., A.M. Tarquis, A. Verhoef, S. Painter, U. Mishra, J. Simunek, J. Vanderborght, U. Wollschläger, D. Or, M. van der Ploeg, M. Young, T. Ghezzehei, H. Vereecken. 2019. The International Soil Modeling Consortium (ISMC) – New Opportunities for Advancing Data and Modeling of Soil Systems, American Geophysical Union Fall meeting, San Francisco, Dec 9-13, 2019.
59. Scown, C., T. Huntington, X. Cui, and U. Mishra. 2019. Machine learning to predict bioenergy sorghum yields under future climate scenarios, American Geophysical Union Fall meeting, San Francisco, Dec 9-13, 2019.

60. Mass, E., U. Mishra, S. Gautam, Y. Wang, R. Ghimire, and R. Lal. 2019. A model ensemble approach to predicting future Sorghum cropping system effects at the field level, ASA-CSSA-SSSA International Annual Meeting, San Antonio, Nov 10-13, 2019.
61. Mishra, U., S. Gautam, and F. Wang. 2019. Marginal lands and agroecosystem models, Joint BioEnergy Institute PI meeting, Monterey, CA, May 28-30, 2019.
62. Gautam, S., E. Mass, and U. Mishra. 2019. Predicting land use change induced biogeochemical change, Joint BioEnergy Institute PI meeting, Monterey, CA, May 28-30, 2019.
63. Wang, F., and U. Mishra. 2019. A scientific framework to quantify marginal lands for bioenergy crop, Joint BioEnergy Institute PI meeting, Monterey, CA, May 28-30, 2019.
64. Mishra, U., J. Jastrow, R. Matamala, and The Permafrost Carbon Network. 2019. Harmonized high-resolution estimates of soil organic carbon stocks and its uncertainties in the permafrost region, DOE-Environmental System Science PI Meeting, Washington DC, Apr 30 - May 1, 2019.
65. Jastrow J., C. Sharp, C. Deck, T. Vugteveen, S. Hofmann, R. Matamala, J. Lederhouse, G. Michaelson, U. Mishra, and C-L Ping. 2019. Assessing the degradation state of soil organic matter in the permafrost region, DOE-Environmental System Science PI Meeting, Washington DC, Apr 30 - May 1, 2019.
66. Matamala, R., N. Jelinski, J. Jastrow, C-L Ping, U. Mishra, T. Vugteveen, and J. Lederhouse. 2019. Soil morphology and organic matter distributions of Alaskan Arctic foothills toposequences, DOE-Environmental System Science PI Meeting, Washington DC, Apr 30 - May 1, 2019.
67. Adhikari, K., U. Mishra, P.R. Owens, S. Wills, Z. Libohova, and D.M. Miller. 2019. Scale dependency of environmental variables on soil organic carbon prediction across the conterminous USA, Pedometrics, Guelph, Canada, June 2-6, 2019.
68. Huntington, T., X. Cui, U. Mishra, and C. Scown. 2019. Machine learning for bioenergy sorghum yield prediction under future climate scenarios, DOE/BER Genomic Sciences Program Annual PI meeting, Washington DC, Feb 24-27, 2019.
69. Baatz, R., J. Vanderborcht, A. Verhoef, J. Simunek, M. van der Ploeg, D. Or, T. Ghezzehei, U. Wollschläger, A.M. Tarquis, S. Painter, U. Mishra, M. Young, H. Vereecken. 2019. The International Soil Modeling Consortium: ISMC status, goals and perspectives, European Geophysical Union, Vienna, Austria, April 7-12, 2019.

70. Jastrow, J.D., R. Matamala, C-Lu Ping, T.W. Vugteveen, J.S. Lederhouse, G.J. Michaelson, and U. Mishra. 2019. Ice-wedge polygon formation impacts permafrost carbon storage and vulnerability to top-down thaw in Arctic Coastal plain soils, Soil Science Society of America, San Diego, CA, Jan 7-9, 2019.
71. Jastrow, J.D., R. Matamala, C-Lu Ping, T.W. Vugteveen, J.S. Lederhouse, G.J. Michaelson, and U. Mishra. 2018. Potential decomposability of permafrost carbon stocks in ice-wedge polygons of the Alaskan Arctic coastal plain, American Geophysical Union, Washington DC, Dec 10-14, 2018.
72. Rowland, J.C., J. Schwenk, E. Shelef, U. Mishra, J. D. Muss, and S.J. Stauffer. 2018. Pan-arctic flux of soil organic carbon to rivers by riverbank erosion, American Geophysical Union, Washington DC, Dec 10-14, 2018.
73. Mishra, U., J. Jastrow, R. Matamala, and The Permafrost Carbon Network. 2018. Spatial heterogeneity and environmental controllers of organic carbon stocks of permafrost-affected soils, American Geophysical Union, Washington DC, Dec 10-14, 2018.
74. Mishra, U., D. Potma, and S. Wills. 2018. Impact of climatic factors on soil organic carbon stocks is soil and site specific in different United States ecoregions, 2nd International Soil Modeling Consortium conference, Wageningen, Netherlands, Nov 5-7, 2018.
75. Mishra, U., J. Jastrow, R. Matamala, and The Permafrost Carbon Network. 2018. Spatial heterogeneity and environmental controllers of permafrost SOC stocks, 21st World Congress of Soil Science, Rio, Brazil, Aug 12-17, 2018.
76. Adhikari, K., U. Mishra, P.R. Owens, S. Wills, and Z. Libohova. 2018. Scaling impacts on soil organic carbon stocks and its environmental controllers, 21st World Congress of Soil Science, Rio, Brazil, Aug 12-17, 2018.
77. Matamala, R., J. Jastrow, F. Calderon, S. Hoffmann, and U. Mishra. 2018. Determining soil organic matter composition and decomposability across the permafrost region using Mid-infrared spectroscopy, DOE-Environmental System Science PI Meeting, May 1-2, 2018.
78. Jastrow, J., R. Matamala, C-L Ping, T. Vugteveen, J. Lederhouse, S. Hoffmann, G. Michaelson, and U. Mishra. 2018. Degradation state of soil organic matter in Arctic coastal plain Ice-wedge polygons, DOE-Environmental System Science PI Meeting, May 1-2, 2018.
79. Mishra, U., G. Hugelius, Y. Yang, and The Permafrost Carbon Network. 2017. Spatial and vertical heterogeneity of permafrost soil organic carbon stocks, 7th Annual Meeting of the Permafrost Carbon Network, New Orleans, LA, Dec 10, 2017.

80. Mishra, U., G. Hugelius, Y. Yang, and The Permafrost Carbon Network. 2017. Towards a global harmonized permafrost soil organic carbon stock estimates, American Geophysical Union, New Orleans, LA, Dec 11-15, 2017.
81. Mishra, U. 2017. Data model intercomparison in permafrost affected soils, International Soil Modeling Consortium, New Orleans, LA, Dec 10, 2017.
82. Jastrow, J.D., R. Matamala, C-L. Ping, T. Vugteveen, J. Lederhouse, G.J. Michaelson, and U. Mishra. 2017. Estimating Arctic coastal plain soil carbon stocks vulnerable to active layer thickening under future climate, American Geophysical Union, New Orleans, LA, Dec 11-15, 2017.
83. Matamala, R., J.D. Jastrow, Z. Fan, C. Liang, F. Calderon, G.J. Michaelson, C-L. Ping, and U. Mishra. 2017. The influence of soil organic matter chemistry and site/soil properties in predicting the decomposability of tundra soils, American Geophysical Union, New Orleans, LA, Dec 11-15, 2017.
84. Nave, L.E., B.F. Walters, K.L. Hofmeister, C.H. Perry, U. Mishra, G.M. Domke, C.W. Swanston. 2017. The role of reforestation in carbon sequestration, American Geophysical Union, New Orleans, LA, Dec 11-15, 2017.
85. Wills, S.A., A. Rossi, T. Loecke, A.M. Ramcharan, S. Roecker, U. Mishra, S. Waltman, L.E. Nave, E.T. Sandquist, C.O. Williams, D. Beaudette, Z. Libohova, and L. Vasilas. 2017. Soil Bulk Density by Soil Type, Land Use and Data Source: Putting the Error in SOC Estimates, American Geophysical Union, New Orleans, LA, Dec 11-15, 2017.
86. Ping, C.L., J.D. Jastrow, R. Matamala, G.J. Michaelson, U. Mishra, Y. Shur. 2017. Cryostratigraphy and soil development in ice wedge polygons on Arctic coastal plains, Alaska, Soil Science Society of America annual meeting, Tampa, FL. Oct 22-25, 2017.
87. Vitharana, U.W.A., U. Mishra, and R.B. Mapa. 2017. Predicting high-resolution soil organic carbon stocks of Sri Lanka using environmental covariates and harmonized profile database, East and South East Asia Federation of Soil Science Societies, Thailand, Dec 13-14, 2017.
88. Mishra, U., J.D. Jastrow, and R. Matamala. 2017. Observed and modeled spatial distribution of uncertainties in Alaskan soil carbon stocks, DOE-Environmental System Science PI Meeting, Apr 25-26, 2017.
89. Matamala, R., J.D. Jastrow, Z. Fan, C. Liang, F. Calderon, G.J. Michaelson, C-L. Ping, and U. Mishra. 2017. Predicting potential carbon mineralization of tundra soils using spectroscopy techniques. DOE-Environmental System Science PI Meeting, Apr 25-26, 2017.

90. Mishra, U., G. Hugelius, Y. Hang, et al., 2016. Towards a harmonized permafrost soil carbon stock estimates. 6th Annual Meeting of the Permafrost Carbon Network, San Francisco, CA, Dec 11, 2016.
91. Mishra, U., and W.J. Riley. 2016. Learning from observed and modeled spatial distribution of uncertainties in Alaskan Soil carbon stocks. DOE-Regional and Global Climate Modeling PI meeting, Nov 29- Dec 01, 2016.
92. Hoffman, F.M., W.J. Riley, J. T. Randerson, G. Keppel-Aleks, D.M. Lawrence, S.M. Elliott, and U. Mishra. 2016. Biogeochemistry-climate feedbacks scientific focus area. DOE-Regional and Global Climate Modeling PI meeting, Nov 29- Dec 01, 2016.
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### **PROFESSIONAL AFFILIATIONS**

- Pedometrics, International Union of Soil Science since, 2004.
- Soil Science Society of America, since 2006.
- Digital Soil Mapping working group, International Union of Soil Science, since 2008.
- American Geophysical Union, since 2009.
- International Soil Carbon Network, since 2009.
- American Association for the Advancement of Science, since 2009.
- Permafrost Carbon Network, since 2011.

- Cryosol working group, International Union of Soil Science, since 2014
- International Soil Modeling Consortium, since 2017.
- United States Permafrost Association, since 2021