

Susan E. Crow
College of Tropical Agriculture and Human Resources
Dept. of Natural Resources and Environmental Management
FTE Distribution: 50% I; 50% R; 0% E

Education

<u>Degree</u>	<u>University</u>	<u>Major</u>
B.S.	College of William and Mary	Biology
M.S.	Villanova University	Biology
Ph.D.	Oregon State University	Ecology

Professional Appointments

<u>Title</u>	<u>Employer</u>	<u>Dates Employed</u>
Professor	University of Hawaii Manoa	2023-present
Associate Professor	University of Hawaii Manoa	2018- 2023
Assistant Professor	University of Hawaii Manoa	2013-2018
Affiliate Researcher	Water Resources Research Center, University of Hawaii Manoa	2011-2021
Graduate Faculty	Department of Natural Resources and Environmental Management	2009- Present
Assistant Researcher	Department of Natural Resources and Environmental Management, University of Hawaii Manoa	2009-2012
Research Fellow	¹⁴ CHRONO Centre for Climate, the Environment, and Chronology, Queen's University Belfast	2007-2009
Postdoctoral Researcher	Department of Earth and Atmospheric Sciences, Purdue University	2006-2007

Courses Taught

Course Number and Title (credits)

NREM 301+Lab Natural Resource Management (3)(1)
TPSS/NREM 304+Lab Fundamentals of Soil Science (3)(1)
NREM 600 Foundations of NREM and Policy (4)
NREM 601 Social-Ecological Systems Analysis of NREM (4)
NREM 612 Predicting and Controlling Degradation in Human-Dominated Terrestrial Ecosystems (3)
NREM 691 Advanced Topics in NREM: Quantitative Ecosystem Carbon (3)

Publications (reverse chronological order)

Books

Book Chapters and Sections

Sierra, C.A. and **S.E. Crow**. 2022. Modeling soil organic carbon dynamics, carbon sequestration, and the climate benefit of sequestration. Understanding and fostering soil carbon sequestration, Edited Book, Ed. Dr. Cornelia Rumpel

Wells, J. M.*, **S.E. Crow**, M.N. Meki, C.A. Sierra, K.M. Carlson, A. Youkhana, D. Richardson*, L. Deem*. 2017. Maximizing soil carbon sequestration: Assessing procedural barriers to carbon management in cultivated tropical perennial grass systems. Book chapter in Carbon Storage and Capture, Ed. Y. Yun, InTech.

<http://dx.doi.org/10.5772/66741>

Paudel, B., T.* Radovich, **S.E. Crow**, K. Thapa, J. Halbrendt*, C. Chan-Halbrendt, B.B. Tamang. 2015. Potential

of conservation agriculture production system (CAPS) for improving sustainable food and nutritional security in hilly regions of Nepal. Chapter 3, pp. 55-76. In Conservation Agriculture in Subsistence Farming: Case Studies from South Asia and Beyond, Eds. C. Chan and J. Fantle-Lepczyk, CAB International

Crow, S.E., B.B. Tamang, O. Schubert, T. Radovich, B. Paudel*, J. Halbrecht*, and K. Thapa. 2015. Soil quality and sustainable production in conservation agriculture production systems (CAPS) of rainfed, sloping land farming of the mid-hills region of Nepal. Chapter 9, pp. 171-206. In Conservation Agriculture in Subsistence Farming: Case Studies from South Asia and Beyond, Eds. C. Chan and J. Fantle-Lepczyk, CAB International

Meki, M.N., J.R. Kiniry, K.D. Behrman, M.N. Pawlowski*, and **S.E. Crow**. 2014. The role of simulation models in monitoring soil organic carbon storage and greenhouse gas mitigation potential in bioenergy cropping systems. Book chapter in CO₂ Sequestration and Valorization, Ed. V. Esteves, InTech

Hubanks*, H., J.L. Deenik, **S.E. Crow**. 2018. Getting the dirt on soil health and management. In: Reference Module in Earth Systems and Environmental Sciences. Elsevier, doi [doi:10.1016/B978-0-12-409548-9.10903-0](https://doi.org/10.1016/B978-0-12-409548-9.10903-0)

Lajtha K, R.D. Bowden, **S.E. Crow**, et al. 2017. The Detrital Input and Removal Treatment (DIRT) Network. In: Reference Module in Earth Systems and Environmental Sciences. Elsevier, doi: 10.1016/B978-0-12-409548-9.09774-8

Deem* L.M. and **S.E. Crow**. 2017. Biochar. In: Reference Module in Earth Systems and Environmental Sciences. Elsevier, doi: 10.1016/B978-0-12-409548-9.10524-X

Conference Proceedings

Paudel, B.*, T. Radovich, C. Chan-Halbrecht, B.B. Tamang, **S.E. Crow**, J. Halbrecht*, K. Thapa. 2014. Effect of conservation agriculture on maize-based farming system in the mid-hills of Nepal. Humanitarian Technology: Science, Systems and Global Impact 2014, HumTech2014. Procedia Engineering 78: 327-336.

Paudel, B.*, T. Radovich, **S.E. Crow**, J. Halbrecht*, C. Chan-Halbrecht, B.B. Tamang, and K. Thapa. 2014. Using competition ratios and total revenue parameters to assess millet and legume intercropping under conservation agriculture production systems in Nepal. Proceedings from the International Conference “Frontiers in Conservation Agriculture in South Asia and Beyond (F-CASA), Kathmandu, Nepal.

Hashimoto, A., J. Arnold, J. Ayars, **S.E. Crow**, T. Eggeman, L. Jakeway, M. Karkee, S. Khanal, J. Kiniry, J. Matsunaga, N. Meki, G. Murthy, M. Nakahata, R. Ogoshi, B. Turano, S. Turn, J. Yanagida, Q. Zhang. 2012. High-Yield Tropical Biomass for Advanced Biofuels. Sun Grant National Conference, New Orleans, LA, October 3-5, 2012.

Davis, A. A.*, C.A. Lepczyk, **S.E. Crow**, C.W. Morden. 2012. *Toxoplasma gondii* detection in urban Hawaii. Proceedings of the 25th Vertebrate Pest Conference (R. M. Timm, Ed.). University of California Davis. Pp. 251-255.

Refereed Journal Publications

Beckstrom, T.B., T.M. Maaz, J.L. Deenik, H. Peter-Contesse, A. Koch, C. Tallamy Glazer, J. Rivera-Zayas, S.E. Crow^{††}. 2025. From Volcanic ash to abundant earth: understanding Andisol organic matter dynamics in relation to soil health on Hawai'i Island. Biogeochemistry 168:22 <https://doi.org/10.1007/s10533-025-01216-9>

Bremer, L.L., G. McGuire*, Z. Hastings Silao, N. Kurashima, T. Tickton, S.E. Crow, C.P. Giardina, K.B. Winter, N. DeMaagd, and C. Trauernicht. 2025. Carbon benefits through agroforestry transitions on unmanaged fallow agroecological land in Hawai'i. Scientific Reports 15:5097 <https://doi.org/10.1038/s41598-025-87891-y>

Satdichanh, M., G.G.O. Dossa, K. Yan, K.W. Tomlinson, K.E. Barton, **S.E. Crow**, L. Winowiecki T-G Vågen, J. Xu, R.D. Harrison. 2023. Drivers of soil organic carbon stock during tropical forest succession. Journal of Ecology 111: 1722-1734. <https://doi.org/10.1111/1365-2745.14141>

McClellan Maaz, T., R.H. Heck, C.T. Glazer, M.K. Loo, J. Rivera Zayas, A.R. Krenz, T. B. Beckstrom*, **S.E.**

Crow†, J.L. Deenik†. 2023. Measuring the unmeasurable: A structural equation modeling approach to assessing soil health. *Science of the Total Environment* 870: 161900. <https://doi.org/10.1016/j.scitotenv.2023.161900>

Crow, S.E., H. Hubanks*, J.L. Deenik, T. McClellan Maaz, C. Tallamy Glazer, E. Vizka*, J. Rivera-Zayas. 2023. Dynamic soil health properties reveal legacy of intensive agriculture in (sub)tropical natural and working landscapes. *Frontiers in*

Crow, S.E. and C.A. Sierra. 2022. The climate benefit of sequestration in soils for warming mitigation. *Biogeochemistry*. doi.org/10.1007/s10533-022-00981-1

McGrath*, C., C.E. Hicks Pries, N. Nguyen, B. Glazer, S. Lio, **S.E. Crow**. 2022. Minerals limit the deep soil respiration response to warming in a tropical Andisol. *Biogeochemistry* <https://doi.org/10.1007/s10533-022-00965-1>

Wells*, J.M., **S.E. Crow**, S.K. Khanal, S.Q. Turn. 2022. Lignin chemical controls on bioconversion of tropically grown C4 bioenergy grasses to biofuels and biobased products. *Bioresource Technology Reports* 18: 101015. <https://doi.org/10.1016/j.biteb.2022.101015>

Heckman, K.A., Hicks Pries, C.E., Lawrence, C.R., Rasmussen, C., **Crow, S.E.**, Hoyt, A.M., von Fromm*, S.F., Shi, Z., Stoner*, S., McGrath*, C., Beem-Miller*, J., Berhe, A., Blankinship, J.C., Keiluweit, M., Marin-Spiotta, E., Monroe*, G., Plante, A.F., Schimel, J.P., Sierra, C.A., Thompson, A., Wagai, R. 2021. A global synthesis of soil fractions goes beyond bulk to explain heterogeneity in soil carbon storage and persistence. *Global Change Biology*. <https://doi.org/10.1111/gcb.16023>

Wells*, J.M., **S.E. Crow**, S.K. Khanal, S. Turn, A. Hashimoto, J.R. Kiniry, M.N. Meki. 2021. Anaerobic digestion and hot water pretreatment of tropically grown C4 energy grasses: Mass, carbon, and energy conversions from field biomass to fuels. *Agronomy* 11, 838. <https://doi.org/10.3390/agronomy11050838>

Melone*, A., Bremer, L.L., **Crow, S.E.**, Hastings*, Z., Winter, K.B., Ticktin, T., Rii, Y.M., Wong, M., Kukea-Shultz, K., Watson, S.J., Trauernicht, C. 2021. Assessing Baseline Carbon Stocks for Forest Transitions: A Case Study of Agroforestry Restoration from Hawai‘i. *Agriculture*, 11, 189. <https://www.mdpi.com/2077-0472/11/3/189>

Sierra, C.A., **S.E. Crow**, M. Heimann, H. Metzler, E.-D. Schulze. 2021. The climate benefit of carbon sequestration. *Biogeosciences*, 18, 1029-1048. <https://doi.org/10.5194/bg-18-1029-2021>

Crow, S.E., J.M. Wells*, C.A. Sierra, A.H. Youkhana, R.M. Ogoshi, D.T. Richardson, C. Tallamy Glazer, M.N. Meki, J.R. Kiniry. 2020. Carbon flow through energycane agroecosystems established post-intensive agriculture. *Global Change Biology Bioenergy* 12:806-817. <https://doi.org/10.1111/gcbb.12713>

Lawrence, C. R., Beem-Miller, J., Hoyt, A. M., Monroe, G., Sierra, C. A., Stoner, S., Heckman, K., Blankinship, J. C., **Crow, S. E.**, McNicol, G., Trumbore, S., Levine, P. A., Vinduřková, O., Todd-Brown, K., Rasmussen, C., Hicks Pries, C. E., Schädel, C., McFarlane, K., Doetterl, S., Hatté, C., He, Y., Treat, C., Harden, J. W., Torn, M. S., Estop-Aragonés, C., Asefaw Berhe, A., Keiluweit, M., Marin-Spiotta, E., Plante, A. F., Thomson, A., Schimel, J. P., Vaughn, L. J. S., and Wagai, R. 2020. An open source database for the synthesis of soil radiocarbon data: ISRaD version 1.0, *Earth Syst. Sci. Data Discuss.* [doi:10.5194/essd-2019-55](https://doi.org/10.5194/essd-2019-55)

Schädel, C., Beem-Miller, J., Aziz Rad, M., **Crow, S. E.**, Hicks Pries, C., Ernakovich, J., Hoyt, A. M., Plante, A., Stoner, S., Treat, C. C., and Sierra, C. A. 2020. Decomposability of soil organic matter over time: The Soil Incubation Database (SIDb, version 1.0) and guidance for incubation procedures, *Earth Syst. Sci. Data Discuss.* <https://doi.org/10.5194/essd-2019-184>

Yu, J.*, L.M. Deem*, **S.E. Crow**, J.L. Deenik, C.R. Penton. 2019. Comparative metagenomics reveals enhanced nutrient cycling potential after two years of biochar amendment in a tropical Oxisol. *Applied and Environmental Microbiology* 85:e02957-18. [doi: 10.1128/AEM.02957-18](https://doi.org/10.1128/AEM.02957-18)

Pawlowski*, M., M.N. Meki, J. Kiniry, and **S.E. Crow**. 2018. Carbon budgets of potential tropical perennial grass cropping scenarios for bioenergy feedstock production on Maui. *Carbon Balance and Management* 13:17.

[doi:10.1186/s13021-018-0102-8](https://doi.org/10.1186/s13021-018-0102-8)

Blankinship, J.C., A.A. Berhe, J.L., **S.E. Crow**, Druhan, K.A. Heckman, M. Keiluweit, C.R. Lawrence, E. Marín-Spiotta, A.F. Plante, C. Rasmussen, C. Schädel, J.P. Schimel, C.A. Sierra, A.A. Thompson, R. Wagai, and W.R. Wieder. 2018. Improving understanding of soil organic matter dynamics by triangulating theories, measurement, and models. *Biogeochemistry* 140: 1-13. [doi:10.1007/s10533-018-0478-2](https://doi.org/10.1007/s10533-018-0478-2)

Lajtha, K., R.D. Bowden, **S.E. Crow**, I. Fekete, Z. Kotrocó, A. Plante, M.J. Simpson, K.J. Nadelhoffer. 2018. The detrital input and removal treatment (DIRT) network: Insights into soil carbon stabilization. *Science of the Total Environment* 640-641: 1112-1120. [doi:10.1016/j.scitotenv.2018.05.388](https://doi.org/10.1016/j.scitotenv.2018.05.388)

Crow, S.E., and C.A. Sierra. 2018. Dynamic, intermediate soil carbon pools may drive future responsiveness to environmental change. *Journal of Environmental Quality* 47: 607-616. [doi:10.2134/jeq2017.07.0280](https://doi.org/10.2134/jeq2017.07.0280)

Davis, A.A.*, C.A. Lepczyk, K.H. Haman, C.W. Morden, **S.E. Crow**, N. Jensen, and M.T. Loh. 2018. *Toxoplasma gondii* detection in fecal samples from domestic cats (*Felis catus*) in Hawaii. *Pacific Science* 72: 501-512. [doi:10.2984/72.4.9](https://doi.org/10.2984/72.4.9)

Crow, S.E., L.M. Deem*, C.A. Sierra, J.M. Wells*. 2018. Belowground carbon dynamics in tropical perennial C4 grass agroecosystems. *Frontiers in Environmental Science* 6: 1-18. [doi:10.3389/fenvs.2018.00018](https://doi.org/10.3389/fenvs.2018.00018)

Rasmussen, C., K.A. Heckman, W.R. Wieder, M. Keiluweit, C.R. Lawrence, A.A. Berhe, J. C. Blankinship, **S.E. Crow**, J.L., Druhan, E. Marín-Spiotta, A.F. Plante, C. H. Pries, C. Rasmussen, C. Schädel, J.P. Schimel, C.A. Sierra, A. Thompson, R. Wagai. 2018. Beyond clay: towards an improved set of variables for predicting soil organic matter content. *Biogeochemistry* 137: 297-306. [doi:10.1007/s10533-018-0424-3](https://doi.org/10.1007/s10533-018-0424-3)

Yu, J.*, L.M. Deem*, **S.E. Crow**, J.L. Deenik, C.R. Penton. 2018. Biochar application influences on microbial assemblage complexity and composition due to soil and bioenergy crop type interactions. *Soil Biology and Biochemistry* 117: 97-107. [doi:10.1016/j.soilbio.2017.11.017](https://doi.org/10.1016/j.soilbio.2017.11.017)

Harden, J., G. Hugelius, A. Anders, J. Blankinship, B. Bond-Lamberty, C. Lawrence, J. Loisel, A. Malhotra, R. Jackson, S. Ogle, C. Philips, R. Ryals, K. Todd-Brown, R. Vargas, S. Vargara, F. Cotrufo, M. Keiluweit, K. Heckman, **S.E. Crow**, W. Silver, M. DeLonge, L. Nave. 2017. Networking our science to characterize the state, vulnerabilities, and management opportunities of soil organic matter. *Global Change Biology*:1-14. [doi:10.1111/gcb.13896](https://doi.org/10.1111/gcb.13896)

Jackson, R.B., K. Lajtha, **S.E. Crow**, G. Hugelius, M.G. Kramer, G. Piñeiro. 2017. The ecology of soil carbon: pools, vulnerabilities, and biotic and abiotic controls. *Annual Review of Ecology, Evolution, and Systematics*: 48:419-445. [doi:10.1146/annurev-ecolsys-112414-054234](https://doi.org/10.1146/annurev-ecolsys-112414-054234)

Meki, M. N., R. M. Ogoshi, J. R. Kiniry, **S.E. Crow**, A. H. Youkhana, M. Nakahata, and K. Littlejohn*. 2017. Performance evaluation of biomass sorghum in Hawaii and Texas. *Industrial Crops and Products*, 103: 257-266. [doi:10.1016/j.indcrop.2017.04.014](https://doi.org/10.1016/j.indcrop.2017.04.014).

Youkhana, A. H., R. M. Ogoshi, J. R. Kiniry, M. N. Meki, M. H. Nakahata, and **S.E. Crow**. 2017. Allometric models for predicting aboveground biomass and carbon stock of tropical perennial C4 grasses in Hawaii. *Frontiers in Plant Science* 8:650. [doi:10.3389/fpls.2017.00650](https://doi.org/10.3389/fpls.2017.00650)

Pawlowski*†, M.N., **S.E. Crow**†, M.N. Meki, J.R. Kiniry, A.D. Taylor, R. Ogoshi. A. Youkhana, and M.H. Nakahata. 2017. Field-based estimates of global warming potential in bioenergy systems of Hawaii: Crop choice and deficit irrigation. *PLoS ONE* 12(1): e0168510. [doi:10.1371/journal.pone.0168510](https://doi.org/10.1371/journal.pone.0168510)

Crow, S.E., M.I. Reeves*, S. Turn, S. Taniguchi*, O. S. Schubert, N. Koch. 2016. Carbon balance implications of land use change from pasture to managed eucalyptus forest in Hawaii. *Carbon Management* 7: 171-181. [doi:10.1080/17583004.2016.1213140](https://doi.org/10.1080/17583004.2016.1213140)

- Sumiyoshi, Y.*, **S.E. Crow**, A. Taylor, C.M. Litton, J.L. Deenik, B. Turano, and R. Ogoshi. 2016. Belowground impact of napier and guinea grasses grown for biofuel feedstock production. *Global Change Biology Bioenergy* 9: 694-709. [doi:10.1111/gcbb.12379](https://doi.org/10.1111/gcbb.12379)
- Paudel*, B., C. Chan, J. Halbrendt*, **S.E. Crow**, T.J. Radovich, G. Norton. 2016. Bioeconomic optimization of conservation agriculture production systems (CAPS) for smallholder tribal farmers in the hill region of Nepal. *Journal of Soil and Water Conservation* 71:103-117. [doi:10.2489/jswc.71.2.103](https://doi.org/10.2489/jswc.71.2.103)
- Wells, J.M.*, **S.E. Crow**, R. Ogoshi, B. Turano, A. Hashimoto. 2015. Optimizing feedstock selection for biofuel production in Hawaii: CuO oxidative lignin products in C4 grasses. *Biomass and Bioenergy* 83:511-515. [doi:10.1016/j.biombioe.2015.10.027](https://doi.org/10.1016/j.biombioe.2015.10.027)
- Meki, M.N., J.R. Kiniry, A.H. Youkhana, **S.E. Crow**, R.M. Ogoshi, M. Nakahata, R. Tirado-Corbala, R.G. Anderson, J. Osorio, and J. Jeong. 2015. Two-year growth cycle sugarcane crop parameter attributes and their application in modeling *Agronomy Journal* 107: 1310-1320. [doi: 10.2134/agronj14.0588](https://doi.org/10.2134/agronj14.0588)
- Crow, S.E.**, M. Reeves*, O.S. Schubert, and C. Sierra. 2015. Optimization of method to quantify soil organic matter dynamics and carbon sequestration potential in volcanic ash soils. *Biogeochemistry* 123: 27-47. [doi: 10.1007/s10533-015-0167-3](https://doi.org/10.1007/s10533-015-0167-3)
- Silva, J.H.S.*, J.L. Deenik, R.S. Yost, G.L. Bruland, and **S.E. Crow**. 2015. Improving clay measurement in oxidic and volcanic ash soil of Hawaii by increasing dispersant concentration and ultrasonic energy levels. *Geoderma* 237-238: 211-223. <https://doi.org/10.1016/j.geoderma.2014.09.008>
- Frey, S.D., S. Ollinger, K. Nadelhoffer, R. Bowden, E. Brzostek, A. Burton, B.A. Caldwell, **S.E. Crow**, C. Goodale, S. Grandy, A. Finzi, M. Kramer, K. Lajtha, J. LeMoine, M. Martin, W. McDowell, R. Minocha, J. Sadowsky, P. Templer, and K. Wicking. 2014. Chronic nitrogen additions suppress decomposition and sequester carbon in temperate forests. *Biogeochemistry* 121:305-316. [doi:10.1007/s10533-014-0004-0](https://doi.org/10.1007/s10533-014-0004-0)
- VanderWerf, E.A., L.C. Young, **S.E. Crow**, E. Opie**, H. Yamazaki*, C.J. Miller, D.G. Anderson, L.S. Brown, D.G. Smith, and J. Eijzenga. 2014. Increase in Wedge-tailed Shearwaters and changes in soil nutrients following removal of alien mammalian predators and nitrogen-fixing plants at Kaena Point, Hawaii. *Restoration Ecology* 22:676-684. [doi:10.1111/rec.12126](https://doi.org/10.1111/rec.12126)
- Giardina, C. P., C.M. Litton, **S.E. Crow**, and G.P. Asner. 2014. Warming-related increases in soil CO₂ efflx are explained by increased below-ground carbon flux. *Nature Climate Change* 4: 822-827. [doi:10.1038/nclimate2322](https://doi.org/10.1038/nclimate2322)
- Briones, M.J., N. McNamara, J. Poskitt, **S.E. Crow**, and N. Ostle. 2014. Interactive biotic and abiotic regulators of soil carbon cycling: evidence from controlled climate experiments on peatland and boreal soils. *Global Change Biology* 20: 2971-2982. [doi:10.1111/gcb.12585](https://doi.org/10.1111/gcb.12585)
- Halbrendt, J.*, S. Gray, **S.E. Crow**, T. Radovich, B.B. Tamang, A.H. Kimura. 2014. Differences in farmer and expert beliefs and the perceived impacts of conservation agriculture. *Global Environmental Change* 28: 50-62. <https://doi.org/10.1016/j.gloenvcha.2014.05.001>
- Ma, Y.*, T.R. Filley, C.T. Johnston, **S.E. Crow**, K. Szlavecz, and M. McCormick. 2013. The combined controls of land use legacy and earthworm activity on soil organic matter chemistry and particle association during afforestation. *Organic Geochemistry* 58: 56-68.
- Ware, S.A., **S.E. Crow**, and B.A. Waitman. 2011. Mode of substrate adaptation in rock outcrop plants: *Cyperus aristatus* Rottb. and *Cyperus granitophius* McVaugh. *Castanea* 76:415-423.
- Crow, S.E.**, K. Lajtha, R.D. Bowden, Y. Yano, J.B. Brant, B.A. Caldwell, E.W. Sulzman. 2009. Increased coniferous needle inputs accelerate decomposition of soil carbon in an old-growth forest. *Forest Ecology and Management* 258: 2224-2232.

Crow, S.E. and S. Ware. 2009. Soil type tolerance in rock outcrop plant communities: *Satureja arkansana* (Nutt.) Briq. (Lamiaceae) in the Ozarks. *The Journal of the Torrey Botanical Society* 136: 363-368.

Crow, S.E., K. Lajtha, T.R. Filley, C. Swanston, B. Caldwell, R.D. Bowden. 2009. Sources of plant-derived carbon and stability of soil organic matter: implications for global change. *Global Change Biology* 15: 2003-2019.

Crow, S.E., T.R. Filley, M. McCormick, K. Szlavecz, D. E. Stott, D. Gamblin, and G. Conyers. 2009. Earthworms, stand age, and species composition interact to influence particulate organic matter chemistry during forest succession. *Biogeochemistry* 92: 61-82.

Turetsky, M.R., **S.E. Crow**, B. Evans, D.L. Vitt, R.K. Wieder. 2008. Trade-offs in resource allocation among moss species control decomposition in boreal peatlands. *Journal of Ecology* 96:1297-1305.

Filley, T.R., M.K. McCormick, **S.E. Crow**, K. Szlavecz, D.F. Whigham, C.T. Johnston, R.N. van den Heuval. 2008. Comparison of the chemical alteration trajectory of *Liriodendron tulipifera* L. litter among forests with different invasive earthworm activity. *Journal of Geophysical Research*, 113, G01027, <http://dx.doi.org/10.1029/2007JG000542>.

Beldin, S.I., B.A. Caldwell, P. Sollins, E.W. Sulzman, K. Lajtha, and **S.E. Crow**. 2007. Cation exchange capacity of density fractions from paired conifer/grassland soils. *Biology and Fertility of Soil* 43: 837-841.

Crow, S.E., C. Swanston, K. Lajtha, J.R. Brooks, and H. Keirstead. 2007. Density fractionation of forest soils: Methodological questions and interpretation of incubation results and turnover time in an ecosystem context. *Biogeochemistry* 85: 69-90.

Crow, S.E. and S. Ware. 2007. Soil type tolerance in rock outcrop plants: species of non-calcareous substrates. *The Southwestern Naturalist* 52:120-125.

Sollins, P., C. Swanston, T. Filley, M. Kleber, M. Kramer, **S.E. Crow**, B. Caldwell, K. Lajtha, and R.D. Bowden. 2006. Organic C and N stabilization in a forest soil: evidence from sequential density fractionation. *Soil Biology and Biochemistry* 38: 3313-3324.

Crow, S.E., E.W. Sulzman, W.D. Rugh, R.D. Bowden, and K. Lajtha. 2006. Isotopic analysis of respired CO₂ during decomposition of separated soil organic matter pools. *Soil Biology and Biochemistry* 38: 3279-3291.

Lajtha, K., **S.E. Crow**, Y. Yano, S.S. Kaushal E. Sulzman, P. Sollins, and J.D.H. Spears. 2005. Detrital controls on soil solution N and dissolved organic matter in soils: a field experiment. *Biogeochemistry* 76: 261-281.

Holub, S.M., K. Lajtha, J. D. H. Spears, J. A. Tóth, **S. E. Crow**, B. A.Caldwell, M. Papp, and P. T. Nagy. 2005. Organic matter manipulations have little effect on gross and net nitrogen transformations in two temperate forest mineral soils in the U.S.A and central Europe. *Forest Ecology and Management* 214: 320-330.

Crow, S.E., and R.K. Wieder. 2005. Sources of CO₂ emission from a northern peatland: root respiration, exudation and decomposition. *Ecology* 86: 1825-1834.

Extension Publications

Hawaii Climate Change Mitigation and Adaptation Commission. 2021. Nature-based resilience and adaptation to climate change in Hawaii: A climate ready Hawaii working paper. (contributor) <https://climate.hawaii.gov/wp-content/uploads/2021/04/CRHI-Working-Paper-V5.pdf>

FAO, ITPS, GSBI, SCBD and EC. 2020. State of knowledge of soil biodiversity - Status, challenges and potentialities, Report 2020. Rome, FAO. <https://doi.org/10.4060/cb1928en>

Creative Works (i.e., Extension Videos, Websites, Blogs, Creative Designs and Exhibitions, etc.)

Hawaii Partnership for Climate Smart Commodities <https://climatesmarthawaii.org/>

Hawaii Soil Health Tool <https://soilhealthhawaii.org>

Crow, S.E., Rivera-Zayas, J. Tallamy Glazer, C., Vizka, E., and Silva, J. Hawaii Natural and Working Lands Baseline and Benchmarks, Final Report 2021. Honolulu, HI, USA, Hawaii State Office of Planning <https://planning.hawaii.gov/wp-content/uploads/UH-CTAHR-Baselines-and-Benchmarks-Final-Report.pdf>

Hawai'i Greenhouse Gas Database <http://hdl.handle.net/10125/76002>

Crow, S., & Rivera-Zayas, J. (2021, July 19). Hawaii greenhouse gas emissions database.

<https://doi.org/10.17605/OSF.IO/JPR7Q>

Hawai'i Soil Carbon Database <http://hdl.handle.net/10125/76001>

Citation: Crow, S., Rivera-Zayas, J., & Vizka, E. (2021, July 19). Hawaii Soil Carbon database.

<https://doi.org/10.17605/OSF.IO/HMTV6>

Leadership Roles (Committees, Boards, Advisory, etc.)

Director, Soil Health, Environment, and Ecosystem Resilience [S(HEE)R] Lab 2023-present.

NREM Graduate Chair, Elected 2021-present

NREM Graduate Committee Member 2019-2021

NREM Faculty Curriculum Committee Chair 2016-2018

NREM Faculty Curriculum Committee Member 2014-2015

Search Committee Member, NREM, "Applied Ecology and Sustainable Management", Spring 2017.

Search Committee Member, Tropical Plant and Soil Sciences, "Soil Microbiology", Spring-summer 2015.

Search Committee Member, NREM, "Assistant Professor in NREM", Winter 2014.

Search Committee Member, NREM, "Tropical Soils and Watershed Hydrology", Spring-Summer 2014.

CTAHR Faculty Senate – elected NREM representative, served Spring 2015-Fall 2017.

CTAHR Strategic Planning Action Team #5 – Land Development Opportunities, Fall 2013-present.

Certificate of Specialization in Leadership and Management (2023-2024) Harvard Business School

Online program, following the completion of three in-track courses: Power and Influence for Positive Impact (2023), Leadership Principles (2023) and Management Essentials (2024).

University of Hawai'i Leading with Excellence, 2022, 2023, conference attendee.

Conference session organizer: Soil Science Society of America International Soils Meeting, San Diego, 2019. Soil carbon is dead, long live soil carbon! Assessing and predicting transformations, protection, and turnover.

Associate Editor, Biogeochemistry, a Springer Journal, 2015-2019

Editorial Review Board Member, Biogeochemistry, a Springer Journal, 2012-2015.

North American Carbon Program - Carbon Cycle Science Interagency Working Group: Science Leadership Group member, (2019-present)

Hawai'i State Planning Office - Greenhouse Gas Sequestration Task Force (Member) – Established by Act 15, SHL 2018, the Task Force is comprised of 15 members from State agencies, nonprofit sector, private associations, and a researcher and an extension agent from CTAHR. The broad purpose is to expand and make permanent the Carbon Farming Task Force, align the energy and sequestration efforts with climate initiatives, and make recommendations to achieve carbon neutrality by 2045. August 2018-2022.

Hawai'i State Planning Office - Carbon Farming Task Force, align the energy and sequestration efforts with climate initiatives, and make recommendations to achieve carbon neutrality by 2045. August 2018-present. Carbon Farming Task Force (Member) – Established by Act 33, SHL 2017, the Task Force is composed of 15 members from State agencies, nonprofit sector, private associations, and a researcher and an extension agent from CTAHR. The broad purpose is to identify Hawaii agricultural, aquacultural, and agroforestry activities and best practices that provide carbon sequestration benefits, which may be used to establish a carbon farming certification. August 2017-July 2018.

City & County of Honolulu Office of Climate Change, Sustainability & Resilience - Island Exposure & Innovation, Climate Change Mitigation Working Group (member) – As a participating city in the international 100

Resilient Cities initiative, the City & County of Honolulu is conducting multiple phases of resilience strategy planning, including tackling climate change by reducing emissions. Fall 2018-present.

Office of Hawaiian Affairs - Kukaniloko Master Planning Working Group (Member) - Office of Hawaiian Affairs acquisition and development of agricultural land associated with the Kukaniloko cultural site requires a master plan. The working group is comprised of members with expertise in cultural and natural resource management, agriculture, archaeology, business and marketing, education, Hawaiian culture, and other fields of study such as environmental and property law. The working group advised OHA in the creation of the master plan. 2017-2019

International Soil Carbon Network (Action Team co-Leader) - Large Scale Assessment of soil carbon storage, stability, and susceptibility to disturbance. 2016-2018.

U.S. Geological Survey (USGS) Powell Center for Analysis and Synthesis (co-P.I.) What lies below? Improving quantification and prediction of soil carbon storage, stability, and susceptibility to disturbance. 2015-2018.

Graduate Students

<u>Category</u>	<u>Current Number of Students</u>	<u>Number Graduated (Career)</u>
Chair of Master's Committees	3	12
Chair of PhD Committees	1	1
Member of Master's Committees	2	10
Member of PhD Committees	1	1

Grant Support

External

USDA-Natural Resources Conservation Service

2023-2025

Hawai'i climate- smart commodities: A portfolio approach to equitably scaling the agriculture sector (Principal Investigator with Lynker as Project Manager). \$40.0 million total award, \$10,647,990 million UH subaward..

National Science Foundation, Idaho State University

2021-2025

Mid-scale RI-1 (M1:IP): A Deep Soil Ecotron facility to explore belowground communities and ecosystem processes (co-Principal Investigator). \$18,950,955 total award; \$391,386 to UH Mānoa.

USDA- National Institute of Food and Agriculture

2021-2024

An emergent soil health framework for agroecosystems in underrepresented tropical/subtropical islands or regions (Project Director). \$499,323.

USDA-Natural Resources Conservation Service

2021-2024

Producer-driven implementation of soil health management systems adapted to diverse cropping systems in tropical and subtropical island regions (co-Principal Investigator). \$1,983,479

USDA-Natural Resources Conservation Service

2020-2023

Science of Hawai'i soil health - dynamic soil properties for soil health assessment (Principal Investigator). \$140,499.

US Climate Alliance

2020-2022

On the Path to Carbon Neutrality: A Hawaii Carbon Land Use Opportunity Assessment (Principal Investigator). American Forests \$81,004; Hawaii State Energy Office \$7,500; Hawaii State Department of Land and Natural Resources \$10,000. \$98,5004 total.

Office of Hawaiian Affairs

2020-2021

Memorandum of Understanding between the Office of Hawaiian Affairs and University of Hawaii (co-Principal Investigator). \$50,000.

State Office of Planning (Key Personnel)

2019-2021

Soil Carbon Inventory and Working Lands Baseline (Key Personnel). \$60,000.

Montana State University Western SARE

2019-2021

Evaluating Water Use Efficiency in Irrigated Agriculture in Hawaii: A Framework and a Case Study (Principal Investigator, student award to Ms. Elaine Vizka). \$23,036.

Hawaii State Department of Health, Clean Water Branch

2019-2022

Implementing Soil Management Strategies and Soil Testing Technologies (co-Principal Investigator). \$349,922.

USDA- National Institute of Food and Agriculture

2018-2022

Putting the farmer in the driver's seat: integrative web tool for soil health and carbon assessment, monitoring, and planning (Project Director). \$449,958.

USDA-National Institute of Food and Agriculture **2018-2019**
 Soil organic matter data synthesis and visualization working group (co-Project Director). \$40,620.

Department of Defense - Office of Naval Research **2016-2017**
 Finalization of soil carbon sequestration measurement and model validation in the development of perennial grass feedstocks for biofuel in Hawaii (Principal Investigator). \$121,816.

USDA-Agricultural Research Service **2013-2016**
 Parameterization of two simulation models (ALMANAC and SWAT) in Hawaii with subsequent parallelization of the SWAT model (Principal Investigator). \$1,201,728.

USDA-Natural Resources Conservation Service **2012-2015**
 Rapid assessment of soil carbon project assistance for the Hawaiian Islands (Principal Investigator). \$75,000.

USDA-National Institute of Food and Agriculture **2012-2017**
 Practical benefits of biochar amendment to agricultural systems: Linking soil and microbial processes to economic feasibility and sustainability (Project Director). \$480,000.

USDA-Agricultural Research Service **2011-2016**
 Water and carbon footprint and plant parameters of biofuel production on the HC&S sugarcane lands on Maui, Hawai'i (Principal Investigator). \$543,000.

Internal

USDA McIntire-Stennis **2023-2028**
 A holistic assessment of soil health and biodiversity in subtropical and tropical island (agro)forestry systems (Principal Investigator). \$135,000

USDA-National Institute of Food and Agriculture Hatch **2020-2022**
 Team Science. Land-based solutions: Activating landscapes for climate change mitigation and soil health (Principal Investigator). \$79,900

USDA McIntire-Stennis **2020-2025**
 Long-term Microbial Transformation of Recalcitrant Nutrients in Experimentally Warmed Tropical Forest Soils (co-Principal Investigator). \$125,000

USDA McIntire-Stennis **2016-2021**
 Interactive feedbacks of climate, mineralogy and afforestation on soil carbon: A tropical deep soil warming experiment (Principal Investigator). \$125,000.

USDA-National Institute of Food and Agriculture Hatch **2016-2018**
 Measurable soil quality (Principal Investigator). \$80,000.

USGS Powell Center for Analysis and Synthesis **2015-2017**
 What lies below? Improving quantification and prediction of soil carbon storage, stability, and susceptibility to disturbance (co-Principal Investigators), \$146,140.

USDA-National Institute of Food and Agriculture Hatch **2013-2015**
 Carbon cycling and storage in Hawaiian Ecosystems: Tropical forest soil carbon formation and decomposition with rising mean annual temperature (co-Principal Investigator). \$49,730.

USDA-National Institute of Food and Agriculture Hatch **2013-2015**
 Can microbial-derived nitrogen be used as a fertilizer for organic farming? (co-Principal Investigator). \$50,000.

CTAHR Research Instrumentation **2012-2013**
 Improving efficiency and depth of analytical capacity for process-level carbon and nutrient cycle research for environmental management and sustainability (Principal Investigator). \$221,000.

CTAHR Catalyst Funds **2011-2013**
 Sustainable food production: Response of root crops and soil carbon resources to the atmospheric $p\text{CO}_2$ estimates of the next 300 years (co-Principal Investigator). \$160,000.

NSF Industry/University Cooperative Research Center **2009-2013**
 Inclusion of carbon and greenhouse gas tradeoffs on life cycle analysis of biomass production systems, Center for BioEnergy Research and Development (CBERD) (Principal Investigator) \$178,198.

USDA-National Institute of Food and Agriculture Hatch **2009-2012**
 Impact of temperature on soil carbon sequestration and quality in native tropical forest and managed pasture (co-Principal Investigator). \$80,000.

Collaborative grants (non-PI status, but with dedicated budget)

Office of Naval Research **2017-2018**

Asia Pacific Research Initiative for Sustainable Energy Systems. Principal Investigator R. Rocheleau, \$8,573,577 (total award); \$131,488 (Crow).

USDA NIFA Biomass Research and Development Initiative

2012-2017

Conversion of high-yield tropical feedstocks and biomass conversion technology for renewable energy production and development. Principal Investigator A. Hashimoto, \$6,000,000 (total award); \$248,997 (Crow).

SANREM/USAID CRSP

2010-2015

Sustainable management of agroecological resources for tribal societies (SMARTS). Principal Investigator C. Chan-Halbrendt \$1,380,000; Crow, Collaborative Researcher.

US Department of Energy

2009-2012

Development of high yield tropical feedstocks and biomass conversion technology for renewable energy production and economic development. Principal Investigator A. Hashimoto \$7,919,250 (total award); \$464,000 (Crow).

National Science Foundation

2008-2011

Collaborative Research: Investigating the soil-earthworm-litter system controls on the stabilization of soil organic matter in eastern deciduous forests. Principal Investigator T. Filley \$408,467 (total award); \$12,000 (Crow).

Presentations at Conferences

Slanzon, G., T.M. Maaz, S.E. Crow, J.L. Deenik, M. Kantar and N. Nguyen. Connecting Fungal-Bacterial Interactions and Soil Health in Tropical Soils. CANVAS - ASA, CSSA, & SSSA International Annual Meeting, San Antonio, Texas, November 2024. (oral)

Kiehl*, K.D., C. Fullmer, N. Nguyen, T.M. Maaz, S.E. Crow and J.L. Deenik. A Microbial Proxy for Mineralizable Nitrogen. CANVAS - ASA, CSSA, & SSSA International Annual Meeting, San Antonio, Texas, November 2024. (poster)

Beckstrom*, T.B., K. Estrada*, T.M. Maaz, J.L. Deenik, N. Reyes*, S. Mix, M.K. Loo, D. Sotomayor, D. Lawrence, C.J. Tallamy Glazer, and S.E. Crow. Assessing (sub)Tropical Soil Health Along a Disturbance Gradient in Hawai'i, Puerto Rico, and Pohnpei. CANVAS - ASA, CSSA, & SSSA International Annual Meeting, San Antonio, Texas, November 2024. (poster)

Gonsalves*, M., S.E. Crow, H. Peter-Contesse and A. Sarquis. C Dynamics in Highly-Weathered (Sub)Tropical Soils: Analyzing Key Drivers to Address Soil Carbon Model Needs. CANVAS - ASA, CSSA, & SSSA International Annual Meeting, San Antonio, Texas, November 2024. (poster)

Tallamy Glazer, C.J., S.E. Crow, H.L. Hubanks, H. Peter-Contesse, J.L. Deenik, T.B. Beckstrom, M. Haddix and M.F. Cotrufo. Characterizing Hawai'i's Poorly and Non-Crystalline Soils: Overcoming Methodological Challenges in Density Fractionation. CANVAS - ASA, CSSA, & SSSA International Annual Meeting, San Antonio, Texas, November 2024. (poster)

K. Estrada*, T.M. Maaz, T.B. Beckstrom*, J.L. Deenik, N. Reyes*, S. Mix, M.K. Loo, C.J. Tallamy Glazer, M. Satdichanh, D. Lawrence, J. Rivera Zayas, T. Ticktin, D. Sotomayor and S.E. Crow. The Dirt on Disturbance: Creating an Anthropogenic Disturbance Index to Objectively Capture Overlap across and within Land Use Types for Tropical and Subtropical Agroecosystems. CANVAS - ASA, CSSA, & SSSA International Annual Meeting, San Antonio, Texas, November 2024. (poster)

Shor*, H., T.B. Beckstrom*, K. Estrada*, T.M. Maaz, J.L. Deenik, N. Reyes*, S. Mix, M.K. Loo, D. Sotomayor, D. Lawrence, C.J. Tallamy Glazer, and S.E. Crow. Unearthing Trends: Optimizing Tropical Soil Health Scoring Methods. CANVAS - ASA, CSSA, & SSSA International Annual Meeting, San Antonio, Texas, November 2024. (poster)

Crow, S.E., Deenik, J.L. K. Enos, C.P. Giardina, T.M. Maaz, L. Nuss, J. Rivera-Zayas, C.A. Sierra, K. Todd-Brown and the Hawai'i Partnership for Climate-Smart Commodities. Overcoming barriers to implementation through a

holistic framework for characterizing place-based suites of practices that achieve meaningful climate benefits. American Geophysical Union Annual Meeting, San Francisco, CA December 2023. (Invited oral)

Lam*, K.I., N. Cowen*, G. Feber*, E. Komolafe*, R.S. Collins*, M. Strickland, Z.E. Kayler, **S.E. Crow**, D.G. Williams. Bridging the knowledge gaps of deep soils. American Geophysical Union Annual Meeting, San Francisco, CA December 2023. (poster)

Peter-Contesse, H., **S.E. Crow**, K.Todd-Brown, C.P. Giardina, S. Owen. Integrating remotely sensed data with plot-level forest metrics to identify significant drivers of soil carbon process across Hawaii's forested landscapes. American Geophysical Union Annual Meeting, San Francisco, CA December 2023. (poster)

Luo, Y., N. Wei, X. Lu, Y. Zhou, F. Tao, L. Jiang, C. Liao, Y. Huang, S. Niu, J. Xia, Q. Quan, B. Houlton, **S.E. Crow**, X. Xu, C. Goodale, C. Koven, C. Field. Preserving wood debris towards net-zero carbon emission. American Geophysical Union Annual Meeting, San Francisco, CA December 2023. (oral)

Lam*, K.I., **S.E. Crow**, K. Keali'ikanaka'ole, M. Kalua, J.L. Deenik, J.W. Creswell, M. Kantar, T.M. Maaz, K. Enos, K. Zane, J.E. Lewis, D.T. Richardson, T.B. Beckstrom*. Pedogenesis of the Pu'u 'ōhi'a soil in Mānoa, Hawai'i: A mixed methods study. American Geophysical Union Annual Meeting, San Francisco, CA December 2023. (oral)

Lam*, K.I., **S.E. Crow**, K. Keali'ikanaka'ole, M. Kalua, J.L. Deenik, J.W. Creswell, M. Kantar, T.M. Maaz, K. Enos, K. Zane, J.E. Lewis, D.T. Richardson, T.B. Beckstrom*. Pedogenesis of the Pu'u 'ōhi'a soil in Mānoa, Hawai'i: A mixed methods study. 2023 ASA-CSSA-SSSA International Annual Meeting, October, 2023, St. Louis MO. (poster)

Beckstrom*, T.B., M.B. Kantar, J.L. Deenik, Q. Chen, N. Nguyen, **S.E. Crow**. Insights from deep learning with MIR spectroscopy in Hawai'i soil health modeling and assessment. 2023 ASA-CSSA-SSSA International Annual Meeting, October, 2023, St. Louis MO. (poster) 1st place in student poster presentation for Soil Chemistry Division of the Soil Science Society of America Society.

Kiehl*, K.D., T.M. Maaz, **S.E. Crow**, J.L. Deenik. Evaluating the use of soil protein to predict nitrogen mineralization in soils with contrasting clay mineralogy and land use histories. 2023 ASA-CSSA-SSSA International Annual Meeting, October, 2023, St. Louis MO. (poster)

Maaz, T.M., **S.E. Crow**, J.L. Deenik, M.K. Loo, C. Tallamy Glazer, T.B. Beckstrom*. Measuring the immeasurable: A structural equation modeling approach to conceptualizing and scaling up soil health assessments. 2023 ASA-CSSA-SSSA International Annual Meeting, October, 2023, St. Louis MO. (oral)

M.K. Loo, J.L. Deenik, T.M. Maaz, **S.E. Crow**, D. Sotomayor, J. Rivera-Zayas, C. Tallamy Glazer, A. Krenz, S. Church*, K. Estrada*, M.L. Pagan, M. Stevensen, K. Kiehl*. Farmer-driven Implementation of Soil Health Management Systems Adapted to Diverse Cropping Systems in Tropical and Subtropical Island Environments. 78th SWCS International Annual Conference. Des Moines, IA, August 2023.

Beckstrom, T.B., **S.E. Crow**, J.L. Deenik, T.M. Maaz, J. Rivera-Zayas, C. Tallamy Glazer. A holistic understanding of Andisol soil organic matter across an environmental gradient and its role in volcanic island resilience. 2023 NCSS Conference Soil, Energy, and Agriculture for Resilient Ecosystems, July 2023, Bismarck, ND.

Crow, S.E. and C.A. Sierra. Nature-based climate solutions are input and time dependent and may be quantified in terms of the climate benefit of sequestration for warming mitigation and systems-level analysis. American Geophysical Union Annual Meeting, New Orleans, LA, December 2021. (invited oral)

Ball, K., **S.E. Crow**, C. Brien, A.A. Berhe, S.Rathke, and J.Blankinship. Inorganic carbon mediates tillage effects on soil organic carbon stocks in arid agricultural soils. American Geophysical Union Annual Meeting, New Orleans, LA, December 2021. (contributed poster)

Vizka, E.*, J.L. Deenik, H. Hubanks*, **S.E. Crow**. Climate-wise management: Soil mineralogy's primary influence

on soil health in Hawaii. American Geophysical Union Annual Meeting, Online, December 2020. (contributed poster)

Pries, C. K. Heckman, P. Templer, S. Frey, and **S.E. Crow**. The response of deep soil carbon to climate change: From experiments to meta-analysis. EGU General Assembly 2021, online, 19–30 Apr 2021, EGU21-16152, <https://doi.org/10.5194/egusphere-egu21-16152>, 2021.

Sierra, C.A., **S.E. Crow**, M. Heimann, H. Metzler, and E.-D. Schulze. The climate benefit of carbon sequestration. European Geophysical Union Meeting, Vienna, April 2020. (contributed abstract, accepted)

Crow, S.E., J.W. Harden, C.A. Sierra. Soil health and soil carbon: A common ground for actuating resilience and climate change mitigation. American Geophysical Union Annual Meeting, San Francisco, CA, December 2019. (contributed poster)

McGrath, C. *, N. Nguyen, B. Glazer, S. Lio, C. Pries, K., **S.E. Crow**. Interactive feedbacks of climate, mineralogy and microbiological communities on soil carbon: A deep soil warming experiment. American Geophysical Union Annual Meeting, San Francisco, CA, December 2019. (contributed poster)

Crow, S.E.. Timescales, a soil carbon conundrum, and actuating the benefits of accumulating carbon in landscapes. European Geophysical Union Meeting, Vienna, April 2019. (invited oral)

Crow, S.E., H.L. Hubanks*, J.L. Deenik, C.J. Tallamy Glazer, E. Vizka*, N. Nguyen. The legacy of intensive land use on soil health and function. European Geophysical Union Meeting, Vienna, April 2019. (contributed abstract, accepted)

Trumbore, S.E., C.R. Lawrence, J. Beem-Miller, A. Hoyt, G. Monroe, C. Sierra, S. Stoner, K.A. Heckman, J. Blankinship, **S.E. Crow**, and G. McNicol. ISRad: the International Soil Radiocarbon Database. European Geophysical Union Meeting, Vienna, April 2019. (contributed abstract, accepted)

Hubanks*, H.L., J.L. Deenik, C.J. Tallamy Glazer, **S.E. Crow**. Towards a Soil Health Index: Identifying sensitive indicators of change across land use and soil diversity. Soil Science Society of America International Soils Meeting, San Diego, CA, January 2019. (contributed poster)

Yu, J., L.M. Deem*, **S.E. Crow**, J.L. Deenik, C.R. Penton. Soil microbial community response to two years of biochar amendment revealed by metagenomics. International Society for Microbial Ecology Symposia, Leipzig, Germany, August 2018. (contributed poster)

McGrath, C. *, N. Nguyen, B. Glazer, C. Pries, K. Sylva**, C. Evensen, **S.E. Crow**. Interactive feedbacks of climate mineralogy and microbiological communities on soil carbon: A deep soil warming experiment. Hawaii Conservation Conference, July 2018, Honolulu, Hawaii. (contributed poster)

Beem-Miller, J., C. Lawrence, J. Blankinship, A. Hoyt, S. Stoner, C. Sierra, G. Monroe, G. McNicol, Y. He, C. Hatté, C. Treat, **S.E. Crow**, K. Heckman, M. Keiluweit, S. Trumbore. From fractions to fluxes: The international soil radiocarbon database. Radiocarbon Conference, Trondheim, Norway, June 2018. (contributed poster)

Wells, J.M.*, **S.E. Crow**, J. Deenik, K. Carlson, A. Hashimoto. Understanding soil carbon storage across heterogeneous landscapes: carbon offsets and sustainability of tropical biomass production systems. 25th European Biomass Conference and Exhibition, Stockholm, Sweden, June 2017. (contributed oral)

Wells, J.M.*, **S.E. Crow**, S.K. Khanal, S.Q. Turn, A. Hashimoto. Effects of anaerobic digestion and hot water pretreatment on lignin. 25th European Biomass Conference and Exhibition, Stockholm, Sweden, June 2017. (contributed oral)

Crow, S.E., M.K. Lazaro*, K.A. Heckman, C.R. Lawrence, C.P. Giardina and C.M. Litton. Components of complex non-crystalline mineralogy contribute differently to soil carbon storage and turnover. American Geophysical Union

Annual Meeting, San Francisco, CA, December 2016. (contributed poster)

Blankinship, J.C., **S.E. Crow**, J. Schimel, C.A. Sierra, C. Schaedel, A.F. Plante, A.A. Thompson, A.A. Berhe, J.L. Druhan, K.A. Heckman, M. Keiluweit, C.R. Lawrence, E. Marin-Spiotta, C. Rasmussen, R. Wagai and W.R. Wieder. The soil carbon paradigm shift: Triangulating theories, measurements, and models. American Geophysical Union Annual Meeting, San Francisco, CA, December 2016. (contributed oral)

Rasmussen, C., A.A. Berhe, J.C. Blankinship, **S.E. Crow**, J.L. Druhan, K.A. Heckman, M. Keiluweit, C.R. Lawrence, E. Marin-Spiotta, A.F. Plante, C. Schaedel, J. Schimel, C.A. Sierra, A. Thompson, R. Wagai and W.R. Wieder. Beyond clay – using selective extractions to improve predictions of soil carbon content. American Geophysical Union Annual Meeting, San Francisco, CA, December 2016. (contributed oral)

Thompson, A.A., A.A. Berhe, J.C. Blankinship, **S.E. Crow**, J.L. Druhan, K.A. Heckman, M. Keiluweit, C.R. Lawrence, E. Marin-Spiotta, A.F. Plante, C. Rasmussen, C. Schaedel, J. Schimel, C.A. Sierra, A. Thompson, R. Wagai and W.R. Wieder. Representation of diffusion controlled carbon stabilization in reactive transport models. American Geophysical Union Annual Meeting, San Francisco, CA, December 2016. (contributed poster)

Crow, S.E., J. Meulemans, L. Deem, K. Biegert, J. Deenik, J. Yanagida, C.R. Penton. The practical benefits of biochar application to environmental and economic viability. Biochar 2016 The Synergy of Science and Industry: Biochar's connection to Ecology, Soil, Food, and Energy. Oregon State University, Corvallis, OR, August 2016.

Deem, L.M.*, **S.E. Crow**, J. Deenik, C. R. Penton, J. Yu Biochar increases temperature sensitivity of soil respiration and N₂O flux. Biochar 2016 The Synergy of Science and Industry: Biochar's connection to Ecology, Soil, Food, and Energy. Oregon State University, Corvallis, OR, August 2016.

Crow, S.E., M.N. Meki, J. Kiniry, R. Ogoshi, A. Youkhana, M. Pawlowski*, M. Nakahata. Projecting global warming potential of production systems for tropical perennial C4 grasses cultivated for biofuel feedstock in Hawaii. ASA, CSSA, and SSSA International Annual Meetings, Minneapolis, MN, November 2015. (contributed poster)

Crow, S.E., et al. Soil organic matter stabilization/destabilization in DIRT. ASA, CSSA, and SSSA International Annual Meetings, Minneapolis, MN, November 2015. (invited talk)

Meulemans, J.*, **S.E. Crow**, L. Deem*, J. Yanagida, J. Deenik. Effects of biochar amendment on GHG emission from tropical agricultural soils in two crop managements in Hawaii. ASA, CSSA, and SSSA International Annual Meetings, Minneapolis, MN, November 2015. (contributed poster)

Youkhana, A., **S.E. Crow**, R. Ogoshi, J.R. Kiniry, M.N. Meki, D. Richardson*, M. Nakahata. Allometric models for predicting aboveground biomass, carbon and nitrogen stocks in potential biofuel crops in Hawaii. ASA, CSSA, and SSSA International Annual Meetings, Minneapolis, MN, November 2015. (contributed poster)

Richardson, D*. **S.E. Crow**, A. Youkhana, J. Moore-Kucera, R. Ogoshi, M.N. Meki, J.R. Kiniry, M. Nakahata. Root biomass and microbial response to deficit irrigation treatments in the rhizosphere of biofuel feedstock cultivation in Hawaii. ASA, CSSA, and SSSA International Annual Meetings, Minneapolis, MN, November 2015. (contributed poster)

Deem, L.M.*, **S.E. Crow**, J. Deenik, R. Penton, J. Yu. The evaluation of biochar effects at both the field and laboratory scale: soil carbon, microbial community composition, and carbon dioxide efflux. 5th International Symposium on Soil Organic Matter, Göttingen, Germany, September, 2015. (contributed poster)

Crow, S.E., L.M. Deem*, Y. Sumiyoshi*, J. Wells*, N. Hunter**, H. Yamazaki*. Belowground carbon dynamics under zero tillage management of tropical, perennial C4 grasses cultivated for biofuel production. 5th International Symposium on Soil Organic Matter, Göttingen, Germany, September, 2015. (contributed poster)

Biegert*, K., S. Marhan, J. Meulemans*, **S.E. Crow**, J. Deenik. Biochar effects on greenhouse gas emissions from

two Hawaiian arable soils. Meeting of the German Soil Science Society, München (Germany), September 2015. (contributed poster)

Lazaro, M.K.*, **S.E. Crow**, C.A. Stiles, C.M. Litton, C.P. Giardina, P. Selmants, M. Reeves, S. Turn, S. Taniguchi, O.S. Schubert, T. Miura, and N. Koch. Comparison of soil carbon mapping techniques across the Hawaiian Islands. National Cooperative Soil Survey Conference, Duluth, MN, June 2015. (contributed poster)

Yu, J., S.E. Crow, J. Deenik, C. R. Penton, L. Deem*. The effect of biochar amendment on microbial community composition, American Society for Microbiology, 115th General Meeting, New Orleans, LA, May 2015.

Wells, J.*, **S.E. Crow**, A. Hashimoto, R. Ogoshi, J.R. Kiniry. Transforming conventional sugarcane into sustainable biofuel feedstock production: Optimizing C4 grass feedstock selection through lignin analysis and conversion efficiency study. American Society of Agricultural and Biological Engineers 2015, 1st Climate Change Symposium, Chicago, IL, May 2015.

Hedgpeth, A.*, D.W. Beilman, and **S.E. Crow**. Sensitivity of Arctic permafrost carbon in the Mackenzie River Basin: a substrate addition and incubation experiment. American Geophysical Union Annual Meeting, San Francisco, CA, December 2014. (contributed poster)

Deem, L.M.*, E. Mizokuchi**, **S.E. Crow**, and J. Deenik. The application of biochar to soils can reduce labile carbon losses and decrease apparent temperature sensitivity. ASA, CSSA, and SSSA International Annual Meetings, Long Beach, CA, November 2014. (contributed poster)

Lazaro, M.K.*, **S.E. Crow**, C.A. Stiles, C.M. Litton, C.P. Giardina, and P. Selmants. Constructing an optimized baseline soil carbon map for the Hawaiian Islands. ASA, CSSA, and SSSA International Annual Meetings, Long Beach, CA, November 2014. (contributed poster)

Youkhana, A., **S.E. Crow**, J. Kiniry, M.N. Meki, R. Ogoshi, and M. Nakahata. Above and belowground biomass and C dynamics under ratoon harvest practices for biofuel feedstock production in Hawaii. ASA, CSSA, and SSSA International Annual Meetings, Long Beach, CA, November 2014. (contributed poster)

Lazaro, M.K.*, **S.E. Crow**, C.A. Stiles, C.M. Litton, C.P. Giardina, and P. Selmants. Optimization of baseline soil carbon prediction map for USGA Carbon Assessment of Hawaii. 22nd Annual Hawaii Conservation Conference, Honolulu, HI, July 2014.

Hashimoto, A., R. Ogoshi, D. Takara, S. Khanal, and **S.E. Crow**. High-yield tropical biomass feedstocks for bioenergy production. 22nd European Biomass Conference and Exhibition, Hamburg Germany, June 2014. (contributed poster)

Young, L.C., E.A. VanderWerf, **S.E. Crow**, E. Opie**, H. Yamazaki*, C. Miller, and L. Brown. Recovery of Wedge-tailed Shearwaters and changes in soil nutrients following construction of a predator-proof fence at Kaena Point, Hawaii. Pacific Seabird Group 41st Annual Meeting, Juneau, Alaska, February 2014. (contributed talk)

Crow, S.E., M. Lazaro**, M. Reeves*, C.M. Litton, C.P. Giardina, J. Wells. Extraordinary soils give insight into the role of non-crystalline minerals in soil carbon response to climate and land use changes. American Geophysical Union Annual Meeting, San Francisco, CA, December 2013. (invited talk)

Deem*, L. **S.E. Crow**, J. Deenik, C.R. Penton, J. Yanagida. Biochar soil amendment for waste-stream diversion, nutrient holding capacity, and carbon sequestration in two contrasting soils. American Geophysical Union Annual Meeting, San Francisco, CA, December 2013 (contributed poster)

Lazaro**, M., **S.E. Crow**, C.M. Litton, C.P. Giardina. Magnitude and temperature sensitivity of tephra-derived soil carbon pools across a mean annual temperature gradient in a tropical montane wet forest. American Geophysical Union Annual Meeting, San Francisco, CA, December 2013 (contributed poster)

Meki, M.N., J.R. Kiniry, A. Youkhana, M. Nakahata, R. Ogoshi, and **S.E. Crow**. Key crop parameters for ALMANAC modeling of high biomass energy sorghum growth and productivity. ASA, CSSA, and SSSA International Annual Meetings, Tampa, FL, November 2013. (contributed poster)

Youkhana, A., **S.E. Crow**, M.N. Meki, J.R. Kiniry, R. Ogoshi, and M. Nakahata. Belowground biomass and C dynamics in sugarcane and ratooning energycane cultivated as biofuel production in Hawaii. ASA, CSSA, and SSSA International Annual Meetings, Tampa, FL, November 2013. (contributed poster)

Lazaro**, M., **S.E. Crow**, C.M. Litton, C.P. Giardina, and J. Wells. Identifying mechanisms of carbon sequestration in volcanic ash-derived soils of Hawaii across a 5.2 °C mean annual temperature gradient. 21st Annual Hawaii Conservation Conference, Honolulu, HI, July 2013.

Giardina, C.P., E. Boxler, S. Cordell, **S.E. Crow**, L. Fortini, M. Fox, J.B. Friday, T. Giambelluca, T. Hawbaker, F. Hughes, J. Jacobi, C. Litton, R. MacKenzie, R. Ostertag, B. Reed, C. Stiles, R. Striegl, and Z. Zhu. Assessing carbon storage and fluxes in Hawaii: Impacts of fire, invasive species, and climate change on the global warming potential. 21st Annual Hawaii Conservation Conference, Honolulu, HI, July 2013. (contributed poster)

Crow, S.E., B.B. Tamang, T. Radovich, P. Poudyal, B. Paudel, J. Halbrendt, and K. Thapa. Maintenance of soil quality and sustainable production through implementation of conservation agriculture production system (CAPS) in rainfed, sloping land farming of the mid-hill region of Nepal. The International Conference “Frontiers in Conservation Agriculture in South Asia and Beyond (F-CASA), Kathmandu, Nepal, March 2013.

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