GOV. MSG. NO. 794

SUSAN E. CROW
Curriculum Vitae

Department of Natural Resources and Environmental Management
College of Tropical Agriculture and Human Resources
University of Hawai'i Mānoa
1910 East-West Rd., Honolulu, HI 96822

TECHNICAL EXPERTISE

Soil Ecology and Biogeochemistry: carbon dynamics and sequestration, greenhouse gas flux, soil health in natural and managed (forested or agriculture) ecosystems and how these relate to global change pressures - such as land-use, climate change, and invasive species - sustainable agriculture, and climate readiness policy.

EDUCATION

B.S., Biology, College of William and Mary, Williamsburg, VA.
M.S., Biology, Villanova University, Villanova, PA.
Ph.D., emphasis in Ecology, Department of Botany and Plant Pathology, Oregon State University, Corvallis, OR.

PROFESSIONAL APPOINTMENTS

2018-present	**Associate Professor**, Department of Natural Resources and Environmental Management, University of Hawai'i Mānoa
2011-present	**Affiliate Researcher**, Water Resources Research Center, University of Hawai'i Mānoa
2009-present	**Graduate Faculty**, Department of Natural Resources and Environmental Management, University of Hawai'i Mānoa
2012-2018	**Assistant Professor**, Department of Natural Resources and Environmental Management, University of Hawai'i Mānoa
2009-2012	**Assistant Researcher**, Department of Natural Resources and Environmental Management, University of Hawai'i Mānoa
2007-2009	**Research Fellow**, ^{14}CHRONO Centre for Climate, the Environment, and Chronology, Queen's University Belfast
2006-2007	**Postdoctoral Researcher**, Department of Earth and Atmospheric Sciences, Purdue University

GRANTS, CONTRACTS, AND GIFTS

External

National Alliance for Water Innovation *2022-2023*
Sustainable Sorbent Materials for Selective Removal and Recycling of Nutrients from Agricultural and Municipal Wastewater (co-Principal Investigator). $1,908,371

National Science Foundation *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

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-NRCS *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-NRCS *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 Hawai'i Carbon Land Use Opportunity Assessment (Principal Investigator). American Forests $81,004; Cash cost shares: Hawai'i State Energy Office $7,500; Hawai'i 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 Hawai'i (co-Principal Investigator). $95,000.

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 Hawai'i: 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 Hawai'i (Principal Investigator). $121,816.

USDA-Agricultural Research Service *2013-2016*

Parameterization of two simulation models (ALMANAC and SWAT) in Hawai'i 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-National Institute of Food and Agriculture Hatch *2020-2021*

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 Investigator), $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 pCO_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).

PROFESSIONAL WORKING GROUPS, LEADERSHIP

North American Carbon Program (NACP) **(2019-present)**
Carbon Cycle Science Interagency Working Group (CCIWG) – NACP Science Leadership Group (SLG) (Member). Nominated by current members of the CCIWG to join the NACP SLG, which provides scientific leadership for the NACP, interacts closely with the CCIWG and NACP office to assist in implementing the NACP Science Plan.

Hawaii State Planning Office **(2017-present)**

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-present.

Carbon Farming Task Force (Member) – Established by Act 33, SHL 2017, 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 identify Hawai'i 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 (2018-present)

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 (OHA) **(2017-2018)**

Kūkaniloko Master Planning Working Group (Member) – OHA acquisition and development of agricultural land associated with the Kūkaniloko 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.

International Soil Carbon Network **(2016-2018)**

Action Team (co-Leader) – Large Scale Assessment of soil carbon storage, stability, and susceptibility to disturbance.

U.S. Geological Survey (USGS) Powell Center for Analysis and Synthesis (co-P.I.) (2015-2018)

What lies below? Improving quantification and prediction of soil carbon storage, stability, and susceptibility to disturbance.

FELLOWSHIPS AND AWARDS

- Nominated for American Geophysical Union **Sulzman Award** (2019)
- Nominated for University of Hawaii Board of Regents **Excellence in Teaching Award** (2016)
- Nominated for CTAHR **Excellence in Research Award** (2015-2016)
- Springer Science and Business Media "**Excellence in Reviewing**" for *Biogeochemistry* (2013)
- Springer Publishing **Award for Excellence (Oral presentation),** American Geophysical Union Meeting, Session: Soil organic matter dynamics in the Anthropocene (2013)
- **NSF-CZEN International Scholars Fellowship** – Title: Decomposing Arctic Soils; Potential Effects of Warmer Climate on Soil Organic Matter Turnover and Chemistry in the Svalbard Archipelago Tundra, $9,040 funded for travel and research (2007)
- Tropical Ecosystems **Research Fellowship** - Oregon State University (2004, 2005)
- **Honorable Mention**, Student Oral Presentation, BIOGEOMON 4th International Symposium on Ecosystem Behaviour, University of Reading, UK, (2002)
- **Travel Award** from the Botany and Plant Pathology Graduate Student Association, Oregon State University (2002, 2005)
- Academic Year **Research Fellowship** in Biology, Villanova University, (AY 2000-2001)
- Summer **Research Fellowship**, Villanova University (2000, 2001)

PEER-REVIEWED PUBLICATIONS

*graduate student, **undergraduate student, † equal authorship

Journal Articles

In review

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

Sierra, C.A. and **S.E. Crow**. In press. 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.

Ball, K.R., **S.E. Crow**, C. Brien, A. Berhe, S. Rathke, and J. Blankinship. In review. Inorganic carbon mediates tillage effects on soil organic carbon stocks in arid agricultural soils. Nature Geoscience.

Published

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., Vindušková, 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 12:61-76. https://doi.org/10.5194/essd-12-61-2020

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 12: 1511-1524. https://doi.org/10.5194/essd-12-1511-2020

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

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

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

Lajtha, K., R.D. Bowden, **S.E. Crow**, I. Fekete, Z. Kotroczó, 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

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

Davis, A.A.*, C.A. Lepczyk, K.H. Haman, C.W. Morden, **S.E. Crow**, N. Jensen, and M.T. Lohr. 2018. Toxoplamsa gondii detection in fecal samples from domestic cats (Felis catus) in Hawaii. Pacific Science 72: 501-512. doi: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

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

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

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

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

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.

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

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

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

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

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

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

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

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

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

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

Giardina, C. P., C.M. Litton, **S.E. Crow,** and G.P. Asner. 2014. Warming-related increases in soil CO_2 efflx are explained by increased below-ground carbon flux. Nature Climate Change 4: 822-827. doi: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

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 CO_2 during decomposition of separated soil organic matter pools. *Soil Biology and Biochemistry* 38: 3279-3291.

Book Chapters

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. Halbrendt*, 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 CO_2 Sequestration and Valorization, Ed. V. Esteves, InTech

Book Sections

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

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

Extended Abstracts

Paudel, B.*, T. Radovich, C. Chan-Halbrendt, B.B. Tamang, **S.E. Crow,** J. Halbrendt*, 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. Proceedia Engineering 78: 327-336.

Paudel, B.*, T. Radovich, **S.E. Crow**, J. Halbrendt*, C. Chan-Halbrendt, 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.

UN Report

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

State Report and Databases

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

State Policy Brief

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

INVITED PROFESSIONAL CONTRIBUTIONS

Panels and Conferences

2021 Invited panelist: Illumination Hawai'i: Summit on Energy & Climate, September 2021, Honolulu, Hawaii.

2019 Invited panelist and participant: Speaker in the Agriculture breakout session panel. US Climate Alliance Western Regional Learning Lab, November 20-21, 2019, Portland, Oregon.

2019 Invited panelist: Cultivation, carbon and collaboration: Adapting the carbon model for Hawaii's farms and ranches, moderator Stephanie Mock. 2019 Hawaii Agriculture Conference, October 15-16, 2019, Honolulu, Hawaii.

2019 Invited speaker and participant: American Farmland Trust's "Farming & Climate Change" at Tenuta di Spannocchia, A discussion with conservationists, scientists, and farmers, May 2019, Tuscany, Italy.

2019 Invited oral presentation: Timescales, a soil carbon conundrum, and actuating the benefits of accumulating carbon in landscapes. European Geophysical Union Meeting, Vienna, April 2019.

2018 Invited participant: The Nature Conservancy "Women on Climate" Summit – 10 women from each of five Pacific states convened to accelerate solutions for climate change, October 11-12, 2018 in Seattle, Washington.

2018 Invited participant: US Climate Alliance Learning Lab, intensive three-day workshop hosted by American Forests to take collaborative action to sequester carbon in forests and other land-based climate mitigation strategies. July 2018, Washington D.C.

2018 Invited participant in my role as Hawaii State Carbon Farming Task Force member in the Climate Action Reserve's North American Carbon World 2018 conference in San Francisco, April 2018.

2018 Invited Panelist: Carbon Farming and Energy Crops at the Maui Energy Conference – Decarbonization: A Business Opportunity for Innovative Communities, Kahului, Maui, March 2018. Panelists discussed - Hawaii established a Carbon Farming Task force in 2017. What financial opportunities exist? What are the most promising energy crops for Hawaii?

2017 Invited Panelist: Think Globally, Act Locally Alternative Fuel initiatives, Carbon Sequestration and Biocrop Results in Hawaii at the Bioeconomy Hawaii Forum 2017, The Future of Biofuels, The State of Hawaii Capitol Auditorium, Honolulu, HI, January 2017. Presenters addressed issues of strategic value in reviewing the state-of-the-art advances in renewable energy and environment for Hawaii.

2016 Invited Speaker and Panelist: Biofuels Panel at APRISE 2016, Asia Pacific Resilience Innovation Summit & Expo, Joint Base Pearl Harbor-Hickam, HI, July 2016. A panel of academic, private sector, and military leadership to discuss ongoing efforts in the biofuels space, and discuss the opportunities and challenges specific to biofuels R&D, production, and integration.

2015 Invited Oral Presentation: Crow, S. E., *et al.* Soil organic matter stabilization/destabilization in DIRT. ASA, CSSA, and SSSA Annual Meeting, Minneapolis, MN, November 2015.

Off-Campus Seminars

Actuating soil to mitigate climate change and improve health of productive landscapes in Hawaii. Center for Ecology and Hydrology, Natural Environmental Research Council, Edinburgh, Scotland, Visiting Scientist Seminar, June 2019.

The low-carbon revolution: harnessing the nature and properties of soil to mitigate climate change and improve the health of managed ecosystems in Hawaii. University of Arizona, Soil Water and Environmental Science, Departmental Seminar Series, October 2017.

Carbon balance and market feasibility in Hawaii. Lunch and learn for Monitoring Analytics (Eagleville, PA), the Independent Market Monitor for PJM Interconnection, which is responsible for monitoring compliance with the rules, standards, procedures and practices of energy markets, March 2017.

Carbon cycle and the soil resource: from mechanism to management. University of New Hampshire, Department of Natural Resources & the Environment, Graduate seminar series in Soil Change, February, 2014.

On-Campus Seminars

Opportunity for land-based climate action and rebuilding resilient, productive landscapes in Hawaii. University of Hawaii Manoa, Institute for Sustainability and Resilience Seminar Series, November 2018.

Interactive feedbacks of temperature, mineralogy, and microbes on soil carbon. Lyon Arboretum Centennial Symposium, East-West Center, September 2018.

The low-carbon revolution: harnessing the nature and properties of soil to mitigate climate change and improve the health of managed ecosystems in Hawaii. NREM Departmental seminar series, October 2017.

Biofuels and biomass in Hawaii: carbon balance and feasibility. Workshop on Energy and Environmental Research, Department of Economics, weekly workshop aims to facilitate interaction among graduate students and faculty across campus, February 2017.

Biofuel production in Hawaii: Greenhouse gas flux, carbon budget, and achieving environmental and economic sustainability. University of Hawaii Manoa, Molecular Biosciences and Bioengineering Department, Graduate Seminar Series: Bioenergy Topics, September 2013.

Global change and soils: Invasive earthworms, arctic shrubs, and Acrudoxic Hydrudands. University of Hawaii Manoa, Geology and Geophysics Departmental seminar series, October 2010.

Select Press, News, and Social Media

- Interview for local news station KITV in response to the passage of legislation to form a Carbon Farming Task Force to help Hawaii meet Paris Climate Accord goals: http://www.kitv.com/story/35604780/hawaii-becomes-first-state-to-enact-law-in-alignment-with-paris-accord
- Appearance on Hawaii Public Radio, The Conversation to discuss the future of biofuels and bioenergy in Hawaii: http://hawaiipublicradio.org/post/conversation-monday-january-23rd-2017
- Featured article by student science communication author published in the Biofuels Digest: http://www.biofuelsdigest.com/bdigest/2017/03/12/viable-biomass-for-hawaii/

CONFERENCE PRESENTATIONS (LAST SIX YEARS)

*UH graduate student, **UH undergraduate student, † equal authorship

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)

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.

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)

Crow, S.E., C.A. Sierra, M.F. Cotrufo, and J.W. Harden. Networking soil carbon and health: a common ground for actuating resilience and climate change mitigation. North American Carbon Program Open Science Meeting 2020, Washington D.C., March 2020. (abstract accepted, COVID-19)

Tallamy Glazer, C., **S.E. Crow**, H. Hubanks, M.F. Cotrufo, M. Haddix. Mineral associated organic matter and soil health in Hawaii. Goldschmidt2020, Honolulu, HI, June 2020. (abstract accepted, COVID-19)

Crow, S.E., C. McGrath, C.E. Hicks Pries, N. Nguyen, M. Lazaro, C.P. Giardina, C.M. Litton. Complex non-crystalline mineralogy protects soil carbon from temperature-dependent decay. Goldschmidt2020, Honolulu, HI, June 2020. (abstract accepted, COVID-19)

McGrath, C., **S.E. Crow**, C.E. Hick Pries, N. Nguyen, B. Glazer, S. Lio. Interactive feedbacks of climate, mineralogy and microbiological communities on soil carbon: A deep soil warming experiment. Goldschmidt2020, Honolulu, HI, June 2020. (abstract accepted, COVID-19)

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 N_2O 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 productions 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.

Paudel, B.*, T. Radovich, **S.E. Crow**, J. Halbrendt*, C. Chan-Halbrendt, B.B. Tamang, and K. Thapa. Using competition ratios and total revenue parameters to assess millet and legume intercropping under conservation agriculture production systems in Nepal. The International Conference "Frontiers in Conservation Agriculture in South Asia and Beyond (F-CASA), Kathmandu, Nepal, March 2013.

CURRICULUM

2016-2019	NREM Faculty Curriculum Committee Chair
2014-2015	NREM Faculty Curriculum Committee Member

As a member of the NREM faculty curriculum committee I participated in the review and re-definition of the graduate program's student learning outcome and annual assessment of the program. Following several years of proposals, faculty feedback, and leadership by the departmental Curriculum Committee, of which I am a member since 2014 and currently Chair, the NREM Department revamped its core graduate courses (NREM600-601-605) to be case study-based, interactive, and interdisciplinary. Professor Kirsten Oleson (Ecological Economics) and I (Soil Ecology and Biogeochemistry) volunteered to take on the initial development and delivery of the course. The 5-credit pilot course was taught in Spring 2016 and expanded into a year-long 8-credit core curriculum in AY 2016-2017. In response to the identified needs of off-island and professional natural resource managers and conservationists for access to distance learning graduate education, I acted as co-Project Director on a 2016 proposal titled "Developing a professional environmental leadership degree program" led by Dr. M'Randa Sandlin to the USDA-NIFA Higher Education Challenge Grant RFA. Adapting the revised core course to an online format appropriate for the proposed degree was a central piece of the proposal; we continue to seek support for this endeavor.

I presented our department's efforts and outcomes at the 2017 Assessment for Curricular Improvement poster exhibit, March 2017. "A collaborative assessment process for sustained curriculum improvement in natural resources and environmental management".

My video from the 2017 Assessment Poster Exhibit is promoted on the Office's website: http://manoa.hawaii.edu/assessment/workshops/poster2017/poster2017.htm#video

COURSES

2016-present	**Co-Instructor**, "Foundations of NREM and Policy" (NREM 600) and "Social-Ecological Systems Analysis of NREM" (NREM601). Co-developed and instructed a fully integrated interdisciplinary core course curriculum required for all NREM M.S. students with co-instructor, Dr. Kirsten Oleson. Formerly, "Evaluation of Natural Resource Management" (NREM 600), "Economic Analysis of Natural Resource Management" (NREM 601), and "Research Skills" (NREM 605).
2014, 2018	**Instructor**, "Advanced Topics in NREM: Quantitative Ecosystem Carbon" (NREM691). Developed and instructed graduate-level elective course in concepts and analytical methods for understanding and assessing terrestrial ecosystem carbon across broad time scales and geographic regions, University of Hawaii Manoa.
2013, 2015	**Instructor**, "Predicting and Controlling Degradation in Human-Dominated Terrestrial Ecosystems" (NREM 612). Graduate-level core course, continued development and delivery of lecture and current literature discussion-based course, University of Hawaii Manoa.
2013-2014	**Co-Instructor**, "Natural Resource Management" (NREM 301 + Lab), continued development, coordination, and delivery of undergraduate-level classroom lectures and laboratory activities, worked with teaching assistant, University of Hawaii Manoa.
2009-present	**Co-instructor**, "Fundamentals of Soil Science" (TPSS/NREM 304+Lab), further development, coordination, and delivery of undergraduate-level classroom lectures and laboratory activities, worked with teaching assistant, University of Hawaii at Manoa.
2004	**Graduate Teaching Assistant**, "Introduction to Soil Science Laboratory", and "General Biology Laboratory: Genetics and Ecology", Oregon State University.
1999-2000	**Graduate Teaching Assistant**, "General Biology Laboratory" and "Science and Environmental Issues", Villanova University.
1999	**Undergraduate Teaching Assistant**, "Botany Laboratory", College of William and Mary

GUEST LECTURES

2020	**Guest Lecturer**, "Theory and Practice of Sustainable Agriculture" (SCFS 320, UH West Oahu), guest lecture provided on the potential for soil ecosystems (locally and globally) to serve as sinks for CO_2 in soil organic matter.
2018	**Guest Lecturer,** "Climate Change and Policy" (NREM 302), shared research path leading to active legislative outreach and policy implementation in Hawaii.
2017	**Guest Lecturer**, "Introduction to Environmental Science and Sustainability" (OCN 101), facilitate discussion session on issues of renewable and non-renewable resources such as soils and biomass.
2009-2012, 2015-2017	**Guest Lecturer**, "Natural Resource Management" (NREM 301L), guest co-instructor for introductory soil science laboratory session, University of Hawaii Manoa. (7 times)
2014	**Guest Lecturer**, "Biomass Conversion to Biofuel and Bioenergy (BE 410), delivered lecture on climate change and biofuels/bioenergy for graduate students.
2010-2014	**Guest Lecturer**, "Ecosystem Ecology" (NREM 680), lecture series on litter decay and soil carbon storage, University of Hawaii at Manoa. (3 times)

2006	**Guest Lecturer**, "Introduction to Soil Science", lecture to ~80 undergraduate and graduate students Oregon State University
2004	**Guest Lecturer**, "Honors Ecology", lecture and lab session to undergraduates, Oregon State University

POSTDOCTORAL AND STUDENT TRAINING

Postdoctoral

2020-pr	**Mentor**, Dr. Johanie Rivera-Zayas, Junior Researcher (Postdoctoral Fellow)
2011-2016	**Advisor,** Dr. Adel Youkhana, Postdoctoral Researcher, "Water and carbon footprint and plant parameters of biofuel production on the HC&S sugarcane lands on Maui, Hawaii".

Graduate

Ph.D.

2020, Fall	**Advisor, Graduate Committee Chair**, Karen Moran-Rivera, NREM Ph.D.
2018, Fall	**Graduate Committee Member,** Bradley Weiss, NREM Ph.D.
2018, Summer	**Advisor, Graduate Committee co-Chair**, Elaine Vizka, NREM Ph.D., "Development and testing of a soil health index for Hawaii to improve nutrient management and build resilience in productive landscapes", degree expected in 2023.
2014, Fall	**Advisor, Graduate Committee Chair**, Jon Wells, NREM Ph.D., "Development of a new index to predict conversion efficiency of renewable fuel feedstocks", degree awarded December 2019. Recipient of the 2016 CTAHR Symposium Award of Merit. Recipient of the 2017 CTAHR Symposium Best Oral Presentation for NREM Department.

M.S.

2020, Fall	**Graduate Committee Member**, Malissa Tayo, NREM M.S. Plan A, Thesis. TBD
2017-2019	**Advisor, Graduate Committee Chair**, Casey McGrath, NREM M.S. Plan A, Thesis option, "Interactive feedbacks of climate and mineralogy on soil carbon: A tropical deep soil warming experiment", degree awarded December 2019.
2017-2019	**Advisor, Graduate Committee co-Chair**, Hannah Hubanks, NREM M.S. Plan A, Thesis option, "Measurable soil quality for Hawaii", degree awarded May 2019.
2015-2019	**Advisor, Graduate Committee Chair**, Daniel Richardson, NREM M.S. Plan A, Thesis option, "Microbial community response to four years of zero-tillage harvest of perennial grasses following 100 years of intensive cultivation for sugarcane", degree expected May 2019. Recipient of the 2017 CTAHR Symposium CTAHR M.S. Student Poster Presentation Award of Merit (2nd place College-wide).
2016-2018	**Advisor, Graduate Committee Member**, Genelle Watkins, NREM M.S. Plan B, "Mangrove restoration and conservation in Pemba, East Africa", degree awarded August 2018.
2014-2016	**Advisor, Graduate Committee Chair**, Jabez Meulemans, NREM M.S. Plan A, Thesis option, "Systems approach to assessing the environmental and economic sustainability of food and fuel crops with biochar soil amendment", degree awarded May 2016.
2013-2016	**Advisor, Graduate Committee Chair**, Lauren Deem, NREM M.S. Plan A, Thesis option, "Mechanistic understanding of improvements in yield and sustainability of biochar-amended soil", degree awarded May 2016.
2014-2015	**Second Supervisor**, Konni Biegert, Institute of Soil Science and Land Evaluation, University of Hohenheim, Germany, M.S. "Biochar effects on greenhouse gas emission from two Hawaiian arable soils", Degree awarded December 2015.
2013-2015	**Graduate Committee Member**, Alexandra Hedgpeth, Geography M.A. "Sensitivity of Arctic permafrost carbon in the Mackenzie River Basin: an incubation experiment to observe the priming effect", degree awarded December 2015.

2013-2015 **Advisor, Graduate Committee Member**, Michelle Lazaro, NREM M.S., Plan B. Recipient of the 2013 Hau'oli Mau Loa Foundation Graduate Fellowship in NREM, Capstone Project Title "Optimization of baseline soil carbon stock assessment across the Hawaiian Islands", degree awarded May 2015.

2013-2014 **Advisor, Graduate Committee Chair**, Whitney Ray, NREM M.S. Plan A, Thesis option, "Greenhouse gas emission balance of biofuel feedstock for potential carbon trading", degree awarded December 2014.

2012-2015 **Graduate Committee Member**, Bikash Paudel, NREM, Ph.D., "Evaluating conservation agriculture production systems for smallholder subsistence farmers in the hill region of Nepal", degree awarded May 2015.

2012-2014 **Graduate Committee Member**, Benjamin Czeck, Geology and Geophysics Department M.S., Thesis "Our food in a changing climate: growth, yield, and nutrient changes of sweet potato across the spectrum of CO_2 concentrations projected in the next 150 years", degree awarded May 2014.

2012-2013 **Advisor, Graduate Committee Member** Hironao Yamazaki, NREM, M.S. Plan B, Capstone Project Title "Alteration in soil carbon pools following land use and management change for bioenergy feedstock production", degree awarded December 2013.

2012-2013 **Graduate Committee Member,** James Harmon, Tropical Plant and Soil Sciences Department, M.S. Plan B,, capstone Project Title "Composting to improve sustainable food production systems and water quality in Pohnpei, Federated States of Micronesia", degree awarded May 2013.

2011-2013 **Advisor, Graduate Committee Chair,** Meghan Pawlowski, NREM, M.S. Plan A, Thesis option, "Greenhouse gas flux and fine root dynamics of sugarcane and Napier grass under deficit irrigation", degree awarded May 2013.

2011-2013 **Graduate Committee Member,** Alisa Davis, NREM, M.S. Plan A, Thesis Option, "*Toxoplasma gondii* detection in the environment from naturally infected cats in Hawaii", degree awarded May 2013.

2010-2012 **Advisor, Graduate Committee Chair**, Mataia Reeves, M.S. Plan A, Thesis option, "The potential carbon sequestration of *Eucalyptus grandis* in conjunction with its use as a biofuel feedstock", degree awarded December 2012.

2010-2012 **Advisor, Graduate Committee Chair,** Yudai Sumiyoshi, M.S. Plan A, Thesis option, "Belowground carbon cycle of Napier and Guinea grasses grown for sustainable biofuel feedstock production", degree awarded December 2012. Awarded "Best NREM Master's Student Presentation" at the 2011 CTAHR Student Research Symposium. Awarded "2011 Outstanding Student Paper Award" from the Biogeosciences Section of the American Geophysical Union.

MEM

2019, Fall **NREM Advisor, Committee member**, Alexis Kerver.

2019, Fall **NREM Advisor, Committee member**, Ryan Uenton.

Undergraduate

2017 **Mentor**, Directed Research (Writing Intensive), Annika Little

2017 **Internship Advisor,** Kaelin Sylva, NREM Department

2017 **Internship Advisor,** Annika Little, NREM Department

2015 **Honors Thesis Committee Member**, William Thompson, TPSS Department, "The role of ash in the efficacy of biochar amendment for promoting plant growth".

2014 **Honors Thesis Committee Member**, Josiah M. K. Marquez, TPSS Department, "Biochar increasing internal tolerance to manganese toxicity in a manganese-rich acid soil".

2013 **Internship Advisor,** Daniel Richardson and Nathan Hunter, NREM Department

2013	**Honors Thesis Committee Member**, Karl Hsu, Geography Department, "Study of long-term climate change and plant ecosystem processes in Hawaii using copper oxide chemistry of organic sediments".
2012	**Mentor**, Erika Mizokuchi, Water, Energy, Soil & Sustainability (WESS) Student Intern. Senior Thesis "Cation exchange capacity and carbon quality of biochar amended soils".
2012	**Mentor**, Michelle Lazaro, Center for Microbial Oceanography: Research and Education (C-MORE) Scholars Intern, Undergraduate "Directed Research" student, awarded University of Hawaii at Manoa Undergraduate Research Opportunities Program Fellowship ($5000 research funds). "Best NREM Undergraduate Presentation" at 2013 CTAHR Student Research Symposium.
2012	**Internship Advisor,** Mark Miller, NREM Department
2012	**Internship Advisor**, Mariko Panzella, TPSS Department
2011-2012	**Mentor,** Mariko Panzella, Undergraduate "Directed Research" student, awarded University of Hawaii at Manoa Undergraduate Research Opportunities Program Fellowship ($3000 stipend).
2010	**Internship Advisor**, Heather Kikkawa, NREM Department
2009-2010	**Mentor,** Mataia Reeves, Undergraduate "Directed Research" student, awarded "Best Undergraduate Presentation" at 2010 CTAHR Student Research Symposium.

High School

2014	**Science Fair Project Mentor**, Matthew Dufale, Farrington High School, "Soil amendments in ambient CO_2 concentrations impact the balance of greenhouse gases". 4th Place Overall and Best in Category (Environmental Management) at the Kapioloani District Science Fair; interviewed on Hawaii News Now (Friday, March 28, 2014); Finalist at the Hawaii State Science Fair: Best of Category Environmental Management; Hawaii Conservation Alliance 1st Place ($500); DuPont Pioneer 1st Place ($150); Pepperman Alpert Memorial Gift Certificate winner.
2011	**Science Fair Project Mentor**, Steven Okada, Maui High School, "Phytolith sequestration in *Saccharum officinarum* and *Pennisetum purpureum*.

DEPARTMENT, COLLEGE, UNIVERSITY SERVICE

CTAHR Research Advisory Committee to Associate Dean of Research, Walter Bowen, 2020-present.
NREM Departmental Promotion Committee (DPC), 2019-present.
Graduate Committee Member, NREM, 2019-present.
Selected participant in the 2015 Innovation Showcase: highlighting cutting-edge innovations and technologies from the faculty of UH Mānoa's College of Tropical Agriculture and Human Resources and the Tokyo University of Agriculture and Technology, May 2015.
Faculty Curriculum Committee Member, NREM, 2014-2018. Chair 2015-2018.
Search Committee Member, NREM, "Applied Environmental Economics", Spring 2020
Search Committee Member, NREM, "Extension Agent, Agricultural Finance", Spring 2018
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.
Exhibitor – The World Congress on Zero Emissions: Launching the "Blue Economy", September 2010.
Faculty judge, CTAHR Student Research Symposium, April 2010, 2014, 2016, 2017.

PROFESSIONAL SERVICE

Science Leadership Group member for the North American Carbon Program, 2019-present.

Associate Editor, Biogeochemistry, a Springer Journal, 2015-2020.

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

USDA NRCS Kealakekua MLRA Soil Survey Office Technical Team Member - The MLRA soil survey technical team consists of the soil survey office (SSO) staff, regional (SSRO) staff (i.e., senior regional soil scientist, soil data quality specialist, and regional ecological site specialist, as appropriate), applicable resource soil scientists, applicable NCSS partners, and other applicable discipline specialists from field, area, State, or regional offices. Members of the technical team help the Kealakekua MLRA Soil Survey Office review and concur with proposed projects among other tasks.

Proposal review panel member, USDA NIFA AFRI, Foundational and Applied Science Program, BNRE Soil health. October 2019.

Conference session organizer: American Geophysical Union, New Orleans, LA, 2021. Soils in the Anthropocene: Advancing characterizations and monitoring of soil health, with Martha Farella Indiana University Bloomington) and Daniel Liptzin (Soil Health Institute)

Conference session organizer: American Geophysical Union, Online, 2020. Soils in the Anthropocene: Linking soil health indicators to function, with Claire Phillips (USDA-ARS) and Daniel Liptzin (Soil Health Institute)

Conference session organizer: American Geophysical Union, San Francisco, 2019. Aligning soil organic matter mechanisms, measurements, and models across scales, with Kate Heckman (USFS)

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.

Proposal review panel member, U.S. Department of Energy, Environmental System Science Funding Opportunity Announcement (DE-FOA-0001386), Early Career Research Program, Biological and Environmental Research – Improved understanding of tropical forest ecosystems to climate change. Gaithersburg, MD, February 2016

Proposal review panel member, U.S. Department of Energy, Environmental System Science Funding Opportunity Announcement (DE-FOA-0001172), Terrestrial Ecosystem Sciences, Belowground Ecology, Rockville, MD, March 2015.

Peer reviewer, Journals and Book Chapters: Ecosphere (1), Science (1), Journal of Agronomy (1), BioEnergy (1), Journal of Plant Nutrition and Soil Science (1), Quaternary Geochronology (1), Rapid Communications in Mass Spectrometry (1), Radiocarbon (1), Geoderma (1), Organic Geochemistry (1), Ecosystems (2), Soil Biology & Biochemistry (2), Science of the Total Environment (2), Forest Science (2), Soil Science Society of America Journal (2), Global Change Biology (2), Biogeochemistry (9), Wiley-Blackwell Publishers (1).

Peer reviewer, Proposals: National Science Foundation (NSF)-DEB, Ecosystems; NSF EAR Instrumentation & Facilities; Bergen Research Foundation & University of Bergen, Norway, provided international external review of early-career proposal, May 2015; European Commission ERC-2015-AdG Call, provided international external review of one research project.

Conference session Convener: American Geophysical Union Annual Meeting, 2016. B22B – Soil carbon dynamics: Diving into our conceptual and operational view of soil carbon pools.

Conference session Chair: American Geophysical Union Annual Meeting, 2014. B22C – Soil organic matter dynamics: Processes of stabilization and decomposition.

Conference organizing committee, Chief Editor of conference abstracts publication, BIOGEOMON 5th International Symposium on Ecosystem Behavior, University of Santa Cruz, CA, June 2006.

Assistant to the organizing committee, 2nd International Conference on Mechanisms of Organic Matter Stabilization and Destabilization in Soils, Asilomar, CA, 2005.

Conference organizing committee, Co-Editor of conference abstracts publication, BIOGEOMON 4th International Symposium on Ecosystem Behaviour, University of Reading, UK, 2002.

PROFESSIONAL AND NETWORK MEMBERSHIPS

American Geophysical Union, Soil Science Society of America, International Soil Carbon Network, Society of Soil and Water Conservation

COMMUNITY SERVICE

Volunteer judge, 2016, 2017 Hawaii Academy of Science's Annual State Science & Engineering Fair.

Volunteer host, 2016, 2017 Agriculture and Environmental Awareness Day, hosted by CTAHR at the Waimanalo Experimental Station, Oahu. Guided 30 5th grade students and chaperones through the exhibit and demonstration tents for the event.

Presenter, "Soil Carbon", 2015 Sustainable and Organic Agriculture Program 2015 Agricultural Professional Development Program (AGPRO), Maui County Cooperative Extension.

POPULAR PRESS COVERAGE

- **Signatory on Opinion Paper**: Lajtha K (2017) Brave new world. Biogeochemistry 133:3–5. doi: 10.1007/s10533-017-0316-y Read 7,826 times on ResearchGate since March 2017.
- **For Sumiyoshi et al. 2016:**
  Biotech Week newsletter, July 5, 2017, pg 230. Biotech Week is a newsletter providing the latest news from the biotech and pharmaceutical industries, including financial and legal issues, FDA applications and approvals, new product releases, appointments, mergers and acquisitions, partnerships, collaborations, and industry news. This information is most pertinent for biotech companies, consulting firms, and researchers.
- **Carbon Farming Task Force June 2017:**
  - KITV: http://www.kitv.com/story/35604780/hawaii-becomes-first-state-to-enact-law-in-alignment-with-paris-accord
  - CTAHR News: https://www.ctahr.hawaii.edu/site/e-notes/06_07_2017.html
- **For Pawlowski et al 2017**
  - Press release: https://scienmag.com/potential-biofuel-crops-in-hawaii-may-successfully-sequester-carbon-in-soil/
  - Biofuels Digest: http://www.biofuelsdigest.com/bdigest/2017/03/12/viable-biomass-for-hawaii/
  - Hawaii Public Radio "The Conversation": http://hawaiipublicradio.org/post/conversation-monday-january-23rd-2017
  - Hawaii Tribune Herald: http://hawaiitribune-herald.com/news/local-news/biofuel-crops-expected-play-crucial-role-hawaii-s-energy-future
  - Social media:
    - http://raisingislands.blogspot.com/2017/01/do-biofuels-really-sequester-carbon.html?m=1
    - http://www.iflscience.com/environment/tropical-biofuel-crops-can-store-more-soil-carbon-than-they-release/
  - Kaunana: http://manoa.hawaii.edu/kaunana/potential-biofuel-crops-in-hawaii-may-successfully-sequester-carbon-in-soil/
  - UH news: http://www.hawaii.edu/news/2017/01/13/potential-biofuel-crops-in-hawaii-may-successfully-sequester-carbon-in-soil/
  - CTAHR Notes: http://www.ctahr.hawaii.edu/site/e-notes/01_11_2017.html