Curriculum Vitae

Kate Scow, Distinguished Professor Emerita of Soil Science and Microbial Ecology
Work Address: Dept. of Land, Air and Water Resources, University of California, Davis, One Shields Ave., Davis, CA 95616, USA. Email: kmscow@ucdavis.edu

Education:

- Ph.D. (Agronomy and Soil Science), Cornell University, 1989
- M.Sc. (Agronomy and Soil Science), Cornell University, 1986

Academic Positions:

- Distinguished Professor, Associate and Assistant Professor of Soil Microbiology and Microbial Ecology, Department of Land, Air and Water Resources, University of California, Davis. 1989-2021
- Director of the Russell Ranch Sustainable Agricultural Facility: home of the Long Term Research on Agricultural Sustainability Experiment (http://asi.ucdavis.edu/rr) 2008-2020
- Chair of the International Agricultural Development Graduate Group 2012-2022

Research Interests:

- Biodiversity of carbon and nitrogen cycling organisms in soils under different farming management systems.
- Relationships between soil health and soil biodiversity and human health
- Biodegradation and bioremediation of contaminants in groundwater and soil systems.
- Impact of biochar on nutrient cycling and contaminant fate

Honors: National Academy of Sciences (2022); National Academy of Engineering (2022); Fellow Soil Science Society of America

Selected Publications:
Total >290 international peer-reviewed papers, book chapters; 2 edited books.
Google Scholar Profile; h-index 96

Taylor, K.M., Nelsen, T.S., Scow, K.M. and Lundy, M.E., 2024. No-till annual wheat increases plant productivity, soil microbial biomass, and soil carbon stabilization relative to intermediate wheatgrass in a Mediterranean climate. *Soil and Tillage Research*, *235*, p.105874.

Taylor, K., Samaddar, S., Schmidt, R., Lundy, M. and Scow, K., 2023. Soil carbon storage and compositional responses of soil microbial communities under perennial grain IWG vs. annual wheat. *Soil Biology and Biochemistry*, *184*, p.109111.

Devarajan, N., Weller, D.L., Jones, M., Adell, A.D., Adhikari, A., Allende, A., Arnold, N.L., Baur, P., Beno, S.M., Clements, D. and Olimpi, E.M., 2023. Evidence for the efficacy of pre-harvest agricultural practices in mitigating food-safety risks to fresh produce in North America. *Frontiers in Sustainable Food Systems*, *7*, p.1101435.

Peng, Y., Rieke, E.L., Chahal, I., Norris, C.E., Janovicek, K., Mitchell, J.P., Roozeboom, K.L., Hayden, Z.D., Strock, J.S., Machado, S. and Sykes, V.R., 2023. Maximizing soil organic carbon stocks under cover cropping: insights from long-term agricultural experiments in North America. *Agriculture, Ecosystems & Environment*, *356*, p.108599.

Liptzin, D., Rieke, E.L., Cappellazzi, S.B., Bean, G.M., Cope, M., Greub, K.L., Norris, C.E., Tracy, P.W., Aberle, E., Ashworth, A. and Tavarez, O.B., 2023. An evaluation of nitrogen indicators for soil health in long-term agricultural experiments. *Soil Science Society of America Journal*, *87*(4), pp.868-884.

Liptzin, D., Norris, C.E., Cappellazzi, S.B., Mac Bean, G., Cope, M., Greub, K.L., Rieke, E.L., Tracy, P.W., Aberle, E., Ashworth, A. and Tavarez, O.B., 2022. An evaluation of carbon indicators of soil health in long-term agricultural experiments. *Soil Biology and Biochemistry*, p.108708.

Samaddar, S., Karp, D.S., Schmidt, R., Devarajan, N., McGarvey, J.A., Pires, A.F. and Scow, K., 2021. Role of soil in the regulation of human and plant pathogens: soils' contributions to people. *Philosophical*

Transactions of the Royal Society B, *376*(1834).
Devarajan, N., McGarvey, J.A., Scow, K., Jones, M.S., Lee, S., Samaddar, S., Schmidt, R., Tran, T.D. and Karp, D.S., 2021. Cascading effects of composts and cover crops on soil chemistry, bacterial communities and the survival of foodborne pathogens. *Journal of applied microbiology*, *131*(4), pp.1564-1577.
Tautges, N. and Scow, K., 2020. Pursuing agroecosystem resilience in a long-term Mediterranean agricultural experiment. In *Long-Term Farming Systems Research* (pp. 53-69). Academic Press.
Wang, D., Felice, M.L. and Scow, K.M., 2020. Impacts and interactions of biochar and biosolids on agricultural soil microbial communities during dry and wet-dry cycles. *Applied Soil Ecology*, *152*, p.103570.
Dynarski, K.A., Bossio, D.A. and Scow, K.M., 2020. Dynamic Stability of Soil Carbon: Reassessing the "Permanence" of Soil Carbon Sequestration. *Frontiers in Environmental Science*.
Li, M., Schmidt, J.E., LaHue, D.G., Lazicki, P., Kent, A., Machmuller, M.B., Scow, K.M. and Gaudin, A., 2020. Impact of Irrigation Strategies on Tomato Root Distribution and Rhizosphere Processes in an Organic System. *Frontiers in Plant Science*, *11*, p.360.
Wade, J., Maltais-Landry, G., Lucas, D.E., Bongiorno, G., Bowles, T.M., Calderón, F.J., Culman, S.W., Daughtridge, R., Ernakovich, J.G., Fonte, S.J. and Giang, D., 2020. Assessing the sensitivity and repeatability of permanganate oxidizable carbon as a soil health metric: An interlab comparison across soils. *Geoderma*, *366*, p.114235.
Bair, D.A., Anderson, C.G., Chung, Y., Scow, K.M., Franco, R.B. and Parikh, S.J., 2020. Impact of biochar on plant growth and uptake of ciprofloxacin, triclocarban and triclosan from biosolids. *Journal of Environmental Science and Health, Part B*, pp.1-12.
Schaefer, M.V., Bogie, N.A., Rath, D., Marklein, A.R., Garniwan, A., Haensel, T., Lin, Y., Avila, C.C., Nico, P.S., Scow, K.M. and Brodie, E.L., 2020. Effect of Cover Crop on Carbon Distribution in Size and Density Separated Soil Aggregates. *Soil Systems*, *4*(1), p.6.
Tautges, N.E., Chiartas, J.L., Gaudin, A.C., O'Geen, A.T., Herrera, I. and Scow, K.M., 2019. Deep soil inventories reveal that impacts of cover crops and compost on soil carbon sequestration differ in surface and subsurface soils. *Global change biology*, *25*(11), pp.3753-3766.
Schmidt, R., Mitchell, J. and Scow, K., 2019. Cover cropping and no-till increase diversity and symbiotroph: saprotroph ratios of soil fungal communities. *Soil Biology and Biochemistry*, *129*, pp.99-109.
Houlton, B.Z., Almaraz, M., Aneja, V., Austin, A.T., Bai, E., Cassman, K.G., Compton, J.E., Davidson, E.A., Erisman, J.W., Galloway, J.N. and Gu, B., 2019. A world of cobenefits: Solving the global nitrogen challenge. *Earth's future*, *7*(8), pp.865-872.
Barzee, T.J., Edalati, A., El-Mashad, H., Wang, D., Scow, K. and Zhang, R., 2019. Digestate biofertilizers support similar or higher tomato yields and quality than mineral fertilizer in a subsurface drip fertigation system. *Frontiers in Sustainable Food Systems*, *3*, p.58.
Wang, D., Li, C., Parikh, S.J. and Scow, K.M., 2019. Impact of biochar on water retention of two agricultural soils–A multi-scale analysis. *Geoderma*, *340*, pp.185-191.
Pincus, L., Ballard, H., Harris, E. and Scow, K., 2018. Seeing below the surface: making soil processes visible to Ugandan smallholder farmers through a constructivist and experiential extension approach. *Agriculture and Human Values*, *35*(2), pp.425-440.
Schmidt, R., Gravuer, K., Bossange, A.V., Mitchell, J. and Scow, K., 2018. Long-term use of cover crops and no-till shift soil microbial community life strategies in agricultural soil. *PloS one*, *13*(2), p.e0192953.
Schmidt, J.E., Peterson, C., Wang, D., Scow, K.M. and Gaudin, A.C., 2018. Agroecosystem tradeoffs associated with conversion to subsurface drip irrigation in organic systems. *Agricultural Water Management*, *202*, pp.1-8.
Winsome, T., Silva, L.C., Scow, K.M., Doane, T.A., Powers, R.F. and Horwath, W.R., 2017. Plant-microbe interactions regulate carbon and nitrogen accumulation in forest soils. *Forest Ecology and Management*, *384*, pp.415-423.
Waldrop, M.P., Holloway, M.J., Smith, D.B., Goldhaber, M.B., Drenovsky, R.E., Scow, K.M., Dick, R., Howard, D., Wylie, B. and Grace, J.B., 2017. The interacting roles of climate, soils, and plant production on soil microbial communities at a continental scale. *Ecology*.
Griffin, D.E., Wang, D., Parikh, S.J. and Scow, K.M., 2017. Short-lived effects of walnut shell biochar on soils and crop yields in a long-term field experiment. *Agriculture, Ecosystems & Environment*, *236*, pp.21-29.